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Matters of Place and Health: Ethnic Enclaves, Immigration Enforcement, and Preterm Births among Latina Mothers in the U.S.

Author

Nwankwo, Ezinne

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Matters of Place and Health:
Ethnic Enclaves, Immigration Enforcement, and Preterm Births among Latina Mothers in the U.S.

A dissertation submitted in partial satisfaction of the

Requirements for the degree Doctor of Philosophy

in Community Health Sciences

by

Ezinne Maureen Nwankwo

2023

ABSTRACT OF THE DISSERTATION

Matters of Place and Health:

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Ezinne Maureen Nwankwo

Doctor of Philosophy in Community Health Sciences

University of California, Los Angeles, 2023

Professor May Sudhinaraset, Chair

Introduction: Preterm birth (PTB)—delivery before 37 weeks of pregnancy—results from multiple factors (e.g., structural, social, physiological, and behavioral influences) and is a major public health issue. Babies that are born too early are at higher risk of disability and mortality, which impacts individuals, families, communities, and society. Although about 1 in 10 births (10.5%) in the U.S. are premature, this figure is much higher for some groups, especially Black women. Inequities in preterm births persist by race, Latino origin, nativity, and legal status, and are not explained entirely by individual-level factors (e.g., income, education). Research on the structural determinants of PTB highlights the role of residential contexts and how where mothers live shapes their risk of giving birth prematurely.

Background: Living in an ethnic enclave, or a socially and economically distinct geographic area with a large concentration of people of the same ethnic group, is hypothesized to decrease

PTB by reducing residents' interpersonal racism experiences and providing access to culturally-specific resources and social support. However, research on enclave-health effects has typically only used crude population measures—like percent Latino or percent foreign-born—to define these areas, which overlooks the structural, social, and material differences between residential contexts and how disparate environments influence PTB. In addition, although immigration enforcement policies have impacted immigrant communities in the last few decades, studies have yet to jointly assess the association between living in an ethnic enclave, immigration enforcement, and PTB.

Objective: The goal of this national cross-sectional study was to investigate the association between living in an ethnic enclave and PTB among Latina mothers in the U.S (N=1,084,867) and assess differences in the association by nativity, Latino origin, and immigration enforcement policies.

Methods: The study draws on social science and health frameworks, two years (2017-2018) of U.S. birth records, census data, and diverse health and policy datasets. I used U.S. census data to construct a county-level ethnic enclave classification scheme that includes social (i.e., Latino ethnic concentration, immigrant density), economic (i.e., percent indicators of residents on public assistance, children living in poverty, unemployment, residents with a bachelor's degree or higher, and median household income), and geographic (i.e., suburban and urban areas) dimensions. The classification yielded nine enclave types across 232 counties where Latino ethnic density was above 13.75%. Enclaves were categorized according to geographic, social, and economic domains: connected advantage and disadvantage; concentrated advantage and disadvantage; disconnected advantage and disadvantage; detached disadvantage; and anchored advantage and disadvantage enclaves. To test the classification, multivariate logistic regression models were fit to predict the likelihood of PTB, net of individual-, community-, and structural-level covariates.

Results: Enclaves were significantly different across all study measures ($p<0.001$). Compared to Latina mothers in anchored advantage enclaves (i.e., moderate Latino density, large foreign-born concentration, suburban, low economic disadvantage), Latina mothers in all other enclaves reported 5%-25% higher odds of PTB, net of covariates. Similar patterns held across nativity status and Latino origin. Regardless of where they lived, foreign-born mothers reported lower odds of PTB than U.S.-born mothers. Latino origin modified the association between living in an ethnic enclave and PTB, such that the effect of living in particular areas differed for Mexican, Puerto Rican, and Cuban origin mothers. Immigration enforcement policies modified the association between living in an ethnic enclave and PTB; as immigration enforcement policies increased by one unit, PTB decreased significantly in most areas, especially concentrated advantage (aOR=0.98, 95% CI: 0.97,0.99), disconnected disadvantage (aOR=0.98, 95% CI: 0.96, 1.00), and disconnected advantage (aOR=0.96, 95% CI: 0.94,0.98) enclaves.

Discussion: The ethnic enclave classification moves beyond crude population concentration measures and provides a nuanced picture of the association between living in an ethnic enclave and PTB. Since the context in which Latina mothers live may positively or negative influence their risk of giving birth prematurely, place-based health, social, and economic policies are crucial to safeguard the health of the youngest members of society. The findings from this study may allow program planners and policymakers to better tailor health programs and policies that address inequities in premature births for different geographic areas.

The dissertation of Ezinne Maureen Nwankwo is approved.

Hiram Beltrán-Sánchez

Chandra L. Ford

Roger Waldinger

May Sudhinaraset, Committee Chair

University of California, Los Angeles

2023

DEDICATION

To my parents, Prof. Dike and Nkechi Nwankwo; my siblings, Ikechi, Chima, and Ugonma; and my husband, partner, and friend, Emeka Akagha. Thanks for your love, support, and encouragement.

To my niece, Ezioma Nwankwo, my nephew, Kelechi Nwankwo, and their future siblings and cousins, may you always be surrounded by love and filled with laughter and joy.

And to me.

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LIST OF ACRONYMS

Abbreviation	Description
ACS	American Community Survey
ANOVA	Analysis of Variance
CDC	The Centers for Disease Control and Prevention
DHHS	The Department of Health and Human Services
FOIA	The Freedom of Information Act
HCA	The Hart-Celler Act
ICC	Intraclass correlation coefficient
ICE	The U.S. Immigration and Customs Enforcement
ILRC	The Immigrant Legal Resource Center
IPUMS	Integrated Public Use Microdata Series
LBW	Low birth weight
MSA	Metropolitan Statistical Area
NCHS	The National Center for Health Statistics
NCSL	The National Conference of State Legislatures
PTB	Preterm birth
SCP	The Secure Communities Program
VIF	Variance Inflation Factor

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Thank God for the gifts of humor, joy, playfulness, tenacity, and vision. I relied on these assets throughout this journey. I also owe a debt of gratitude to the people who shaped my path. You all taught, inspired, challenged, encouraged, and supported me, believing I would excel at anything I set out to achieve. Thank you!

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To many others who supported me along the way

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I relied on several institutional supports and programs

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To all, I say Daalụ! I meela nke ọma. Thank you! You've done well.

CURRICULUM VITAE

EZINNE M. NWANKWO

EDUCATION

MPH, Health Behavior and Health Education University of Michigan, Ann Arbor, MI 2011–2013
BS, Health Education, San Francisco State University, San Francisco, CA 2006–2010

POSITIONS

RESEARCH
Graduate Student Researcher, Department of Community Health Sciences, UCLA 2020–pres.
Subject Expert, Health Resources and Services Administration, Rockville, MD 2012–2012
Research Assistant, University of Michigan School of Public Health, Ann Arbor, MI 2011–2013

ACADEMIC
Teaching Assistant, Department of Community Health Sciences, UCLA 2022–pres.
Teaching Assistant, Department of Epidemiology and Biostatistics, UCSF 2014–2016
Lecturer, UC Berkeley School of Public Health, On-Campus/Online Program 2016–2016

PROFESSIONAL
Project Manager, Institute for Health Policy Studies, UCSF, San Francisco, CA 2013–2017

PUBLICATIONS

PEER-REVIEWED MANUSCRIPTS

1. Amani B, McAndrew B, Sharif MZ, Garcia J, **Nwankwo E**, Cabral, A, Abotsi-Kowu C, Khan H, Le C, Ponder ML, Ford CL. An Equity-Based Scoring System for Evaluating Surveillance-related harm in Public Health Crises. *Ethnicity and Disease.* 2023 Jan 1; 33 (1): 63–75. https://doi.org/10.18865/2022-2022.
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ABSTRACTS

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2. Ford CL, Amani B, **Nwankwo E**, Abotsi-Kowu C, Le C, Ponder ML, Harawa NT. Adequacy of Existing Surveillance Systems to Monitor Racism, Social Stigma and COVID Inequities: A Detailed Assessment and Recommendations from Project REFOCUS. APHA, Boston, MA, Nov 6-9, 2022.
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5. **Nwankwo EM**. "An alternative story: The West Africa Ebola epidemic and strategies for effective healthcare volunteerism", panel: "Critiques of Western Paternalism on Global Health Outcomes," Interdisciplinary Association for Population Health Research, Minneapolis, MN (Virtual, Sept 27-Oct 1, 2020).
6. **Nwankwo EM**, Portacolone E, Zhi Q, Raveis VH, Gershon RR. Barriers and Facilitators to Disaster Planning in a Sample of Elderly Homecare Recipients, APHA, Denver, CO, October 29-November 2, 2016.
7. Gershon RR, Zhi Q, **Nwankwo EM**. Emergency Preparedness Climate: Are We Prepared for Emerging Pathogens? Association of Occupational Health Professionals in Healthcare, Myrtle Beach, SC, Sept 7-10 2016.

HONORS AND AWARDS

Selected list of honors and awards

Robert Wood Johnson Foundation, Dissertation Award	2021–2022
UCLA Graduate Research Mentorship Award	2019–2020
Robert Wood Johnson Foundation, Health Policy Research Scholar	2018–2022
UCLA Graduate Summer Research Mentorship Award	2018–2019
UCLA Graduate Summer Research Mentorship Award	2017–2018

CHAPTER 1. INTRODUCTION

1.1 Problem statement

Preterm birth (PTB) is a national public health priority (Centers for Disease Control and Prevention, 2019). Infants born preterm are at greater risk of disability and mortality (Blencowe et al., 2019), which places significant burdens on families, communities, and the nation (Beam et al., 2020; Centers for Disease Control and Prevention, 2019; March of Dimes, 2015). Disparities in premature births are well-documented, with studies reporting different patterns by race (Mydam, David, Rankin, & Collins, 2019), Latino origin[1] or ethnicity (DeSisto & McDonald, 2018), nativity (Flores, Simonsen, Manuck, Dyer, & Turok, 2012; Sanchez-Vaznaugh et al., 2016), immigrants' duration in the U.S. (i.e., the healthy immigrant effect)[2] (Palloni & Arias, 2004), legal status (Richardson, Andrea, Ziring, Robinson, & Messer, 2020), and locality (Osypuk, Bates, & Acevedo-Garcia, 2010). To explain these differences, researchers have focused on the structural determinants of health, highlighting the role of place and how the context in which one lives influences health outcomes. Although place denotes geographic boundaries, it also encompasses the social, economic, and political environments that influence health (Cummins, Curtis, Diez-Roux, & Macintyre, 2007).

This study centers on ethnic enclaves,[3] or socially and economically distinct geographic areas with high co-ethnic concentration (Portes, 1981), to understand how Latina mothers'

[1]Though Hispanic and Latino mean different things, researchers have often used these terms interchangeably. In this document, I maintain the authors use of each term. When referring to my research, I use Latina to refer to the women in this study who descend from Latin America.

[2]The finding that when immigrants arrive in the U.S., they are healthier than U.S.-born populations.

[3]The terms ethnic enclave and immigrant enclave are often used interchangeably, but ethnic enclave remains the most used of the two (Google Books Ngram Viewer, 2020). Since actual distinguishing factors remain unclear, when citing relevant literature, I employ authors' denotations. When discussing my work, I use ethnic enclave to represent the broad grouping of places and terms derived from the classification to denote specific areas. In addition, there is a tendency to associate terms to (e.g., "Chinatown,") and power over (e.g., "Little Tokyo") places where a large group of immigrants live (Leung & Takeuchi, 2011). For this study, the term "ethnic enclave" best represents geographically bounded areas with high co-ethnic concentration.

residential contexts impact their risk of PTB. Although living in an ethnic enclave is hypothesized to protect health by providing residents access to culturally-specific resources, social support, and lessening experiences of interpersonal racism (Bécares et al., 2012; Logan, Zhang, & Alba, 2002; Osypuk et al., 2010; Osypuk, Diez Roux, Hadley, & Kandula, 2009), research in this area has produced mixed results. While some studies find lower odds of PTB, for example, others report greater prevalence of PTB risk factors when Latina mothers live in enclaves (DeCamp, Choi, Fuentes-Afflick, & Sastry, 2015; Janevic, Borrell, Savitz, Echeverria, & Rundle, 2014; Shaw, Pickett, & Wilkinson, 2010). Other research suggests that residence in ethnic enclaves contributes to higher odds of PTB for U.S. born residents (Osypuk et al., 2010) and individuals of Puerto Rican descent (Roy, Hughes, & Yoshikawa, 2013). These findings highlight important differences by nativity and Latino origin.

To date, however, health-related studies on ethnic enclaves have been limited by their sole use of population concentration measures (e.g., percent Latino or foreign-born) to denote enclaves. While such measures are easy to understand, they only capture the demographic dimension of residential contexts and ascribe the same social processes to all similarly populated areas. Due to the emphasis on the population, points of intervention have remained unclear. While social capital is often evoked as an explanation for the benefits of living in ethnic enclaves, it varies across communities (Altschuler, Somkin, & Adler, 2004) and depends—in large part—on the community's economic resources (Menjívar, 2000). Accounting for the economic context, for example, may help determine the appropriate intervention approach.

Extant research (Froment, Gomez, Roux, DeRouen, & Kidd, 2014; Grineski, Collins, & Kim, 2016; Mason et al., 2011; Roy et al., 2013; Von Behren et al., 2018) has generally found that it is in the context of poor economic standing that enclaves may be harmful for health. The local economic environment may impact residents' ability to support community members—a central feature of the enclave-health effect (Menjívar, 2000). However, health-related studies

that have considered economic influences, have rarely considered how the setting (e.g., urban vs. suburban) may also influence immigrants experiences and health.

Geography, whether urban or suburban, is intrinsically linked to the social, economic, and political environment and is a critical part of how residents experience where they live (Bambra, 2018; Cummins et al., 2007; Curtis & Rees Jones, 1998; Krieger, 2012; Parker et al., 2018). Today, there are more immigrants living in suburban areas than at any point in U.S. history (Suro, Wilson, & Singer, 2011). A measure that incorporates the social, geographic, and economic context of enclaves will allow researchers to better evaluate the enclave-health effect.

Building on extant scholarship and measures of ethnic enclaves, this study advances a nuanced approach to delimiting Latino ethnic enclaves in the U.S. with social, economic, and geographic indicators. First, because Latinos have lived in the U.S. for centuries and make up the largest U.S. immigrant group (Arreola, 2004; Krogstad, 2020), their residential patterns cannot be framed with the proportion of Latinos or the foreign-born population alone. Applying both concentration measures (e.g., percent Latino, percent foreign-born) may reveal differences across places generally thought to influence health similarly. Second, the prevalent view of ethnic enclaves as densely populated, high poverty, urban areas in the health-related literature does not reflect the growing diversity in immigrants' residential patterns. While some enclaves emerged as a result of race-based residential segregation, immigrants have increasingly settled outside of traditional immigrant destinations (Singer, 2013; Suro et al., 2011; Wen, Lauderdale, & Kandula, 2009), creating new forms of enclaves. In some areas, the growing immigrant population is being met with restrictive immigration enforcement policies. Therefore, living in an ethnic enclave may result in different experiences that depend on the social, economic, and geographic context of the enclave. These experiences may also differ by nativity and Latino origin and contribute disparately to PTB risk among Latina mothers.

This study uses a county-level ethnic enclave classification that includes social (i.e., Latino ethnic concentration, immigrant density), economic (i.e., percent indicators of: residents

on public assistance, children living in poverty, unemployment, residents with a bachelor's degree or higher, and median household income), and geographic (i.e., suburban and urban areas) dimensions. The classification includes nine enclave types: (1) connected disadvantage (i.e., Large Latino concentration, large foreign-born population, suburban, high disadvantage); (2) connected advantage (i.e., Large Latino concentration, large foreign-born population, suburban, low disadvantage); (3) concentrated disadvantage (i.e., Large Latino concentration, large foreign-born population, urban, high disadvantage); (4) concentrated advantage (i.e., Large Latino concentration, large foreign-born population, urban, low disadvantage), (5) disconnected disadvantage (Large Latino concentration, small foreign-born population, suburban, high disadvantage); (6) disconnected advantage (i.e., Large Latino concentration, small foreign-born population, suburban, low disadvantage); (7) anchored disadvantage (i.e., medium Latino concentration, large foreign-born population, suburban, high disadvantage); (8) anchored advantage (i.e., medium Latino concentration, large foreign-born population, suburban, low disadvantage); (9) detached disadvantage (i.e., Large Latino concentration, small foreign-born population, urban, high disadvantage)) across suburban and urban counties (N=232) where the Latino proportion is above the county-level standard deviation (13.75%). Table 1.1 presents the broad groupings (without the economic dimension).

Table 1.1. Ethnic enclave classification terms

Term	Description (social dimensions)	Geography
Concentrated	Large (high) Latino and large (high) immigrant population	Urban
Detached	Large (high) Latino but small (low) immigrant population	
Anchored	Medium Latino but large (high) immigrant population	Suburban
Connected	Large (high) Latino and large (high) immigrant population	
Disconnected	Large (high) Latino but small (low) immigrant population	

Note. Each enclave is later classified using economic indicators.

1.2 Significance of the study

The classification achieves three things. First, understanding the local context is important for program planning and policymaking. The classification may allow local public health program planners to identify areas that are in need of support, and may be useful for

deciding how to tailor health and social services programs and resources for particular areas (Francis, Berger, Giardini, & Steinman, 2009; Gelfond & Looney, 2018; Lester, Evans, & Tian, 2018; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017). Second, the classification invites public health researchers to consider the demographic (e.g., the growth of immigrants in suburbs), and structural (e.g., residential segregation, residential mobility blocks) processes that have created the different residential contexts in which Latinos live. Third, it incorporates area-level attributes to better explain health differences, adding a focus on the material and non-material determinants of health that vary across residential contexts. Fourth, to my knowledge, no study has jointly assessed the association between living in an ethnic enclave, immigration enforcement policies, and PTB. The ethnic enclave classification will also be useful for future studies that aim to examine the enclave-health relationship in diverse populations.

1.3 Specific aims

This study uses two years (2017-2018) of national birth records (N= 1,084,867), U.S. census data, and measures of immigration enforcement policies in multivariate logistic regression models to test the enclave classification among Latina mothers. **Aim 1** investigates the association between living in an ethnic enclave and PTB. I expect that Latina mothers who live in anchored advantage (i.e., medium Latino concentration, large foreign-born population, suburban, low disadvantage) enclaves will experience the lowest odds of PTB and serve as the reference group. **Aim 2** examines if the association between living in an ethnic enclave and PTB depends on (a) nativity or (b) Latino origin. I expect nativity to modify this association such that foreign-born Latinas would experience lower odds of preterm births compared to their U.S.-born counterparts in all enclaves. I also predict that U.S. and foreign-born Latina mothers would be more likely to experience higher odds of PTB in all other enclaves relative to anchored advantage enclaves. Latino origin will modify this association such that there will be differences in the odds of PTB, when comparing Latinas of Mexican, Cuban, and Puerto Rican descent living in anchored advantaged enclaves and other areas. **Aim 3** assesses if county-level

immigration enforcement policies modify this association. I expect that these policies will modify the association between living in an ethnic enclave and PTB, such that an increase in immigration enforcement policies will result in higher odds of PTB, with greater effects for Latina mothers in detached disadvantage (i.e., Large Latino concentration, small foreign-born population, urban, high disadvantage) enclaves vs. anchored advantage enclaves. The results from this study will refine our understanding of the association between living in an ethnic enclave and PTB among Latina mothers and illuminate how immigration enforcement policies intersect with residential contexts to shape PTB risk. These findings will inform health research, interventions, and programs for specific geographic areas.

1.4 Dissertation overview

This dissertation includes seven chapters. Chapter one provides an introduction. Chapter two grounds the study with a background section that defines ethnic enclaves, describes the Latino population and their distribution across the U.S., and summarizes the factors that have sustained Latino immigrants' residential patterns in the U.S. Chapter three includes a review of the literature in four sections: (1) PTB, associated risk factors and pathways, and the Latino health paradox; (2) ethnic enclaves and health, including pregnancy-related outcomes, proposed mechanisms, and measurement considerations; (3) the ethnic enclave classification and description of dynamics in classified areas; and (4) immigration enforcement and health, hypothesized mechanisms, and immigration enforcement in classified enclaves. Chapter four presents the foundations and theoretical perspectives that guide this study and presents the integrated conceptual framework. The study aims, research questions, hypotheses, and analytic model are also included in Chapter four. Chapter five details the methodology, including data sources, study variables, and the analytical approach for each aim. Chapter six presents study results by research aim, and Chapter seven discusses study findings. This chapter also includes the limitations and strengths of the study, the research, practice, and policy implications, and concludes the dissertation.

CHAPTER 2. BACKGROUND

This chapter introduces the ethnic enclave and details its function for immigrants and their families. I describe early immigrant enclaves and contemporary and emerging forms before describing the U.S. Latino population and the factors (e.g., racism, residential segregation, and migration) that have sustained residential patterns and the function of ethnic enclaves.

2.1 Historical context for ethnic enclaves

Ethnic enclaves have simultaneously functioned as landing pads and springboards (National Research Council, 2001; Pullés & Lee, 2019). Although enclaves emerged because of discriminatory labor and housing policies, co-ethnic residence was associated with several benefits. Upon arrival, immigrants had limited resources, and the enclave provided a community that allowed them to settle with ease. New arrivals learned English, found jobs, located housing, and gathered useful information and resources (Rothstein, 2017). They spoke their native tongue, ate familiar foods, and fellowshipped with other immigrants (Rothstein, 2017). Residence in enclaves buffered the experiences of racism and hostility that immigrants faced outside these settings (National Research Council, 2001; Pullés & Lee, 2019). Jewish, Irish, Italian, and Polish immigrants all followed this settlement pattern. Since immigrants' descendants typically moved out of enclaves after subsequent generations, this trend was believed to reflect the transitory nature of U.S integration for all immigrants.

2.2 Contemporary ethnic enclaves

Ethnic enclaves were initially conceptualized as the middle-place between West African villages and the modern urban sector (Hanna & Hanna, 1967). These ethnic communities were poor, ethnically clustered, and included commercial districts (Hanna & Hanna, 1967). Ethnic enclaves still generally represent socially and economically distinct geographic areas with high co-ethnic density (Portes, 1981). These communities may include niche businesses that serve residents and other locals (Waldinger, 1993). Ethnic enclaves are largely believed to function as early immigrant enclaves that cushioned and supported immigrants integration into U.S. society

(National Research Council, 2001; Pullés & Lee, 2019). However, social scientists have debated the definitional and analytical boundaries of the construct and have focused on the social and economic benefits of living or working in these areas (Pullés & Lee, 2019; Waldinger, 1993; Zhou & Logan, 1989).

In health research, scholars have focused on the ethnic density concept and its relation to diverse physical and mental health outcomes (Bécares et al., 2012; Fang & Tseng, 2018). Although ethnic and immigrant density are central features of ethnic enclaves, using only these measures to evaluate place-health relationships has stifled research in this area. For example, ethnic enclaves have commonly been described as low-income residential areas with deficient physical and economic environments. However, in some cases, residing in an ethnic enclave essentially means living in areas characterized by higher socio-economic status (W. Li, 1998, 2019; Logan et al., 2002). In addition, there are social (e.g., inter/intra group relations) and economic (e.g., poverty) differences across residential contexts that measures of concentration alone fail to capture (Tam, 2019; Wen et al., 2009). Ethnic enclaves, even those with similar ethnic and immigrant compositions, are not the same, and demographic, economic, and sociopolitical factors have shaped their forms, locations, and existence (W. Li, 1998, 2019; Wen et al., 2009). The emergence of ethnoburbs is just one example of these changes.

2.2.1 Suburban enclaves

Ethnoburbs are multi-ethnic suburban communities where an ethnic group maintains a pronounced presence but is not the majority (W. Li, 1998, 2019). Unlike traditional ethnic enclaves, in ethnoburbs, the ethnic group may only represent a small proportion of the total population in the area (W. Li, 1998). However, much like traditional ethnic enclaves, this representation is significant enough to shape the economy, culture, and identity of the area (Hoalst-Pullen, Slinger-Friedman, Trendell, & Patterson, 2013). Examples of these settings include the Chinese ethnoburbs in San Gabriel Valley, CA; the Filipino ethnoburb of Daly City, CA; and Latino ethnoburbs in Cobb County, GA (Hoalst-Pullen et al., 2013; W. Li, 1998; Liu &

Geron, 2008). Others have argued that some suburban areas where Latinos are concentrated have been conceptualized as ethnic enclaves and may actually be ethnoburbs (Hoalst-Pullen et al., 2013; Price, 2012). This seemingly subtle difference has profound implications for how we study, understand, and interpret the influence of residential contexts on health. Ethnoburbs are growing in the U.S. and represent how global processes reshape local communities (W. Li, 2019; Wen et al., 2009). Immigrants who settle into ethnoburbs are said to possess the economic capital to bypass traditional enclaves and second and third generation residents are described as having the economic resources to reside in such areas (W. Li, 1998, 2019).

However, ethnoburbs represent just one way type of enclave in suburban areas. U.S. suburbs are becoming more racially, ethnically, economically, and politically diverse (Murphy & Allard, 2015; Walker, 2018), which suggests distinct experiences and health implications for residents. Although one recent report proposes the existence of various types of suburban spaces (Nijman, 2020), research that captures and names these variations, including the complexities and heterogeneity, is still needed (Amam, 2010). Research on suburban health and alternate forms of the traditional ethnic enclave have received minimal attention in health research, which has limited our understanding of how these contexts influence health.

Extant studies report that some U.S. suburbs are ill equipped to address the social and health needs of their rapidly changing population (Francis et al., 2009; Pavlakis, 2018). Others suggest that the view of suburbs as affluent locales hides the growing poverty and health and social service deprivation in some areas (Francis et al., 2009; Murphy & Allard, 2015; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017; Suro et al., 2011). However, U.S. suburbs are not monoliths and there is profound heterogeneity across residential contexts. As more immigrants, including minoritized groups and the working poor, settle into suburbs (Amam, 2010; Murphy & Allard, 2015; Nijman, 2020; Walker, 2018), there is a need to revisit long-held assumptions about ethnic enclaves to better account for traditional and contemporary immigrant settlement dynamics in health-related studies.

2.2.2 A note on rural areas

This study excludes rural areas. First, trends including, the historical, economic, social, and political factors that have shaped Latino immigrants' residential patterns are expected to play out differently across rural vs. urban/suburban areas. Second, both depopulation and Latino immigration are evolving differently across rural America. Despite occupying 72% of the total U.S. land area, rural counties represent just 14% of the U.S. population—the lowest this figure has ever been in U.S. history. This is largely because immigration to some rural areas has slowed in recent years, with population declines between 2010 and 2020 (Lichter & Johnson, 2020; Parker et al., 2018). Although Latinos are increasingly dispersed in the U.S., they represent a small share (7.6%) of the rural population (Lichter & Johnson, 2020). Indeed, owing to demographic changes over time and changing economic, social and political climates, future studies on ethnic enclaves may focus on rural areas.

This study highlights what's been called "a new geography of nativity," which documents the growing immigrant population in suburban areas (Suro et al., 2011). Attention to this demographic shift will ensure that program planners and policymakers, are prepared to meet the needs of the growing immigrant populations in their jurisdictions. In the next section, I describe the U.S. Latino population before highlighting the diverse factors that have shaped Latino immigrants' residential patterns in urban and suburban spaces.

2.3 The Latino population in the U.S.

2.3.1 Demographics

Latinos (i.e., Mexicans, Puerto Ricans, Cubans, Salvadorans, Dominicans, Guatemalans, Colombians, Hondurans, and Peruvians), or U.S residents from Latin America, make up approximately 19% of the U.S. population (Krogstad, Passel, & Noe-Bustamante, 2022). Mexicans (59.5%) comprise the largest share of the Latino population and Puerto Ricans make up 9.3% and represent the second-largest Latino group in the U.S (Noe-Bustamante, 2019). In comparison, Cuban (3.8%) and Salvadoran (4.0%) people comprise less than 5%, and

are the third and largest Latino groups respectively; other Latino groups represent a smaller segment of the Latino population.

Latinos also represent the largest immigrant population in the U.S., as about 32% are foreign-born (Krogstad et al., 2022). Most foreign-born Latinos (78%) have lived in the U.S. for over ten years, with close to half (46%) having lived in the U.S. for more than twenty years. A large share (79%) of the U.S. Latino population are citizens (Noe-Bustamante, 2019). However, it is estimated that Latinos make up a large proportion of the undocumented U.S. population. Over half (51%) of all undocumented individuals in the U.S. are said to be of Mexican origin and about 16% are estimated to be from Central American countries, including El Salvador (7%), Guatemala (5%), and Honduras (4%) (Migration Policy Institute, 2021a).

2.3.2 Socioeconomic profile

There are also socioeconomic differences across Latino origin groups and by nativity (Noe-Bustamante, 2019). Among Latinos, the median income is about $49,010. Mexicans maintain incomes within the average ($49,000) while Hondurans report the lowest median incomes ($41,000) and Peruvians report the highest ($61,200). Foreign-born Latinos ($45,200) tend to earn less than their U.S.-born ($53,000) counterparts but generally have lower unemployment rates (5%) than the U.S.-born (7%). In 2018, about 19% of Latinos were living in poverty, far above the national average (13.5%); fewer foreign-born Latinos (18%)—than the U.S.-born (20%)—lived in poverty. Although about 16% of Latinos have completed a Bachelor's degree or higher, there are different rates of educational attainment across Latino origin groups (Noe-Bustamante, 2019). For instance, more than half (55%) of the U.S. Venezuelan population have completed at least a Bachelor's degree, compared to 10% of the U.S Guatemalan population. Twenty percent of U.S.-born Latinos, compared to 12% of foreign-born Latinos, have completed at least a Bachelor's degree or higher.

2.3.3 Geographic distribution by region

National, regional, and global factors (see section 2.4), have influenced the international and domestic migration patterns of Puerto Rican, Cuban, and Mexican people. From 1860 to 2021, migration from Latin America has occurred in several waves and resulted in ebbs and flows of Puerto Rican, Cuban, and Mexican people in the Northeastern, Midwestern, Southern, and Western parts of the U.S (see Figure 2.1). In section 2.4, I explore the factors that influence ethnic enclave formation in different areas.

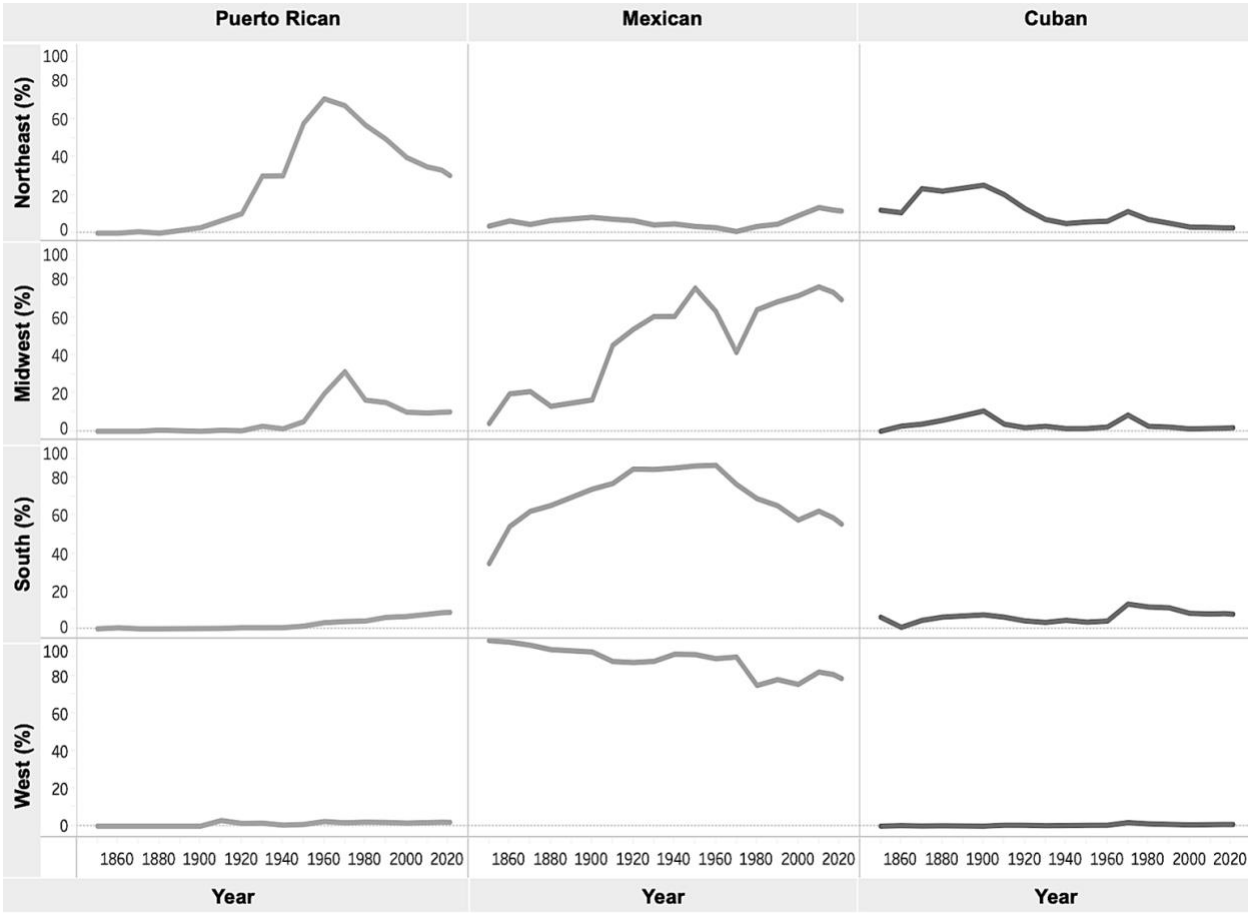


Figure 2.1. Latino population (Puerto Rican, Mexican, Cuban) in U.S. regions over time
Note. Author's visualization of the following census samples: 1850 1%, 1860 1%, 1870 1%, 1880 1% 1900 1%, 1910 1%, 1920 1%, 1930 1%, 1940 1%, 1950 1%, 1960 5%, 1970 1% state form 1, 1980 5% state, 1990 5% state, 2000 1%, 2010 American Community Survey (ACS), 2017 ACS, 2021 ACS from the Integrated Public Use Microdata Series (IPUMS) (Ruggles, Flood, Goeken, Schouweiler, & Sobek, 2022). Although Figure 2.1 uses the IPUMS "hispan" variable, census race and ethnicity designations have changed over time and Latino origin was only asked starting in 1980.

Puerto Rican people became U.S. citizens in 1917 and have largely settled in the Northeast. While a smaller share also settled in the Midwest in the 1950s and 1960s, recent reports (Hinojosa, 2018; Meléndez, 2018) suggest a growing Puerto Rican population in the South—which Figure 2.1 also shows. Puerto Rican people have generally never had a strong presence in the West.

Owing to the cessation of lands to the U.S., Mexican people have had a long history of residence in the U.S. and have predominately lived in Western U.S. states (e.g., California, Arizona). Mexican people have also generally had a strong presence in the Midwest (e.g., Illinois, Michigan) and South (e.g., Texas). Their presence in Midwestern and Southern states has been attributed to the demand for labor in agriculture, railroad construction, mining, and manufacturing in the U.S. starting in the 1900s (for the Midwest) and earlier for the South (Gutiérrez, 2020).

Although Cuban people settled In the Northeast long before the Cuban Revolution in the 1950s, their presence in the Northeast began to decrease around the time Puerto Rican people started to migrate to the region. In the 1960s, Cuban people settled in the Northeast, Midwest, and South and have maintained stronger presence in the South.

2.3.4 Geographic distribution by state

Close to half (45%) of all Latinos in the U.S. live in just two states: California (26%) and Texas (19%) (Noe-Bustamante, 2019). However, the concentration of Latino immigrants in specific areas varies by national origin. Latinos born in Mexico represent the largest share of immigrants in the U.S. (62%) and are concentrated in CA (35%), TX (26%) and Arizona (5%). Cuban immigrants are mainly represented in FL (66%), CA (5%) and New Jersey (NJ) (4%) and those from Puerto Rico are predominantly in FL (20%), NY (20%) and NJ (8%). Individuals from Central America, including Venezuela, Guatemala, Honduras, and El Salvador also make up large shares of the population in FL (11%), CA (25%), and TX (13%) (Babich & Batalova, 2021). Despite a group's demographic concentration in different areas, however, the formation of

ethnic enclaves is not automatic and depends, in large part, on the U.S. social structure, the group's human capital, and their reception and integration into U.S. society (Healey & Stepnick, 2019; Portes & Manning, 1986).

2.4 Factors influencing residential patterns and ethnic enclave formation

Given the primacy of racialization in the U.S., racism, residential segregation, and migration influences may jointly explain the residential patterns of different Latino groups and the salience and function of ethnic enclaves for each group.

2.4.1 Racism, historical contexts, and racialization of Latino subgroups

Racism—as a system of policies, practices, and ideologies—structures all aspects of U.S. society (Gee & Ford, 2011; Jones, 2000; Lawrence & Keleher, 2004; Powell, 2007; Viruell-Fuentes, Miranda, & Abdulrahim, 2012; D. R. Williams & Mohammed, 2013). Racism influences access to power, privilege, and resources and operates through many different pathways (Gee & Ford, 2011; Powell, 2007; Viruell-Fuentes et al., 2012; D. R. Williams & Mohammed, 2013), shaping the everyday experiences of Latinos in the U.S. Racism, operating through nativist ideologies for example, has historically "othered" some immigrant groups, rendering them "inassimilable" (Gee & Ford, 2011). This othering process has socially excluded and defined which groups qualify for U.S. admission, citizenship, and associated social and economic resources (Viruell-Fuentes et al., 2012). This process of racialized incorporation organizes people, including recent immigrants, into the racial hierarchy of U.S. society, where white people occupy a superior position (Chaudhary, 2015). Groups that are lower on this hierarchy experience limited access to resources, including constrained residential options, and have fewer social and economic opportunities.

Cuban, Mexican, and Puerto Rican people have generally faced similar and unique forms of marginalization based on race, Latino origin, and nativity. Each group has a distinct history of colonization, migration, and U.S. social, economic, and political incorporation, which has shaped their presence in different areas across the U.S., the formation of ethnic enclaves,

and the salience of these residential contexts (Healey & Stepnick, 2019). Compared to Cuban immigrants' social and economic integration, for instance, Mexican and Puerto Rican individuals have largely faced exclusion.

The incorporation of Cuban immigrants in the U.S. is unlike that of any other Latino group (Healey & Stepnick, 2019). Relative to other Latino groups in the U.S., Cuban people are far more likely to be racialized, perceived as, and self-identify as white (Pew Research Center, 2008), which may explain their high-levels of U.S. reception. Many Cuban people were welcomed as political refugees fleeing communism in the 1950s, settled in south Florida, and received the resettlement resources (e.g., health and social services) that the U.S. affords refugees. This initial wave of immigrants, who were predominately upper and middle class, also brought with them educational and economic capital, which enabled their establishing of ethnic enclaves (Healey & Stepnick, 2019; Portes & Manning, 1986). These enclaves were instrumental in the integration of Cuban people who arrived later and also settled in south Florida (Healey & Stepnick, 2019; Portes & Manning, 1986). Since 1966, Cuban people meeting specific criteria have also had a path to citizenship, which has shaped their experiences in the U.S (Healey & Stepnick, 2019; Portes & Manning, 1986).

The Treaty of Guadalupe Hidalgo (signed in 1848) ceded Mexican land to the U.S. and included Mexican populations already established in places like Arizona, California, New Mexico, Texas, Colorado, Nevada, and Utah (Arreola, 2004; Gómez, 2015). Although this treaty guaranteed U.S. citizenship to Mexican individuals who were already in what is now considered U.S. land, some Mexican individuals, especially those who were deemed not white enough did not receive U.S. citizenship (Gómez, 2015). As a result of this colonization, Mexican immigrants have entered the U.S. with a generally lower pre-established social position (Healey & Stepnick, 2019). Migration from Mexico has also tended to coincide with U.S. labor demands, which has generally relegated a large share of Mexican immigrants to low-wage segments of the U.S.

economy (Healey & Stepnick, 2019). Immigration from Mexico also influences U.S. immigration policies, and shapes the racialization of Latino groups (Kandel, Seelke, & Wasem, 2012).

Although the colonization of Puerto Rico by the U.S. grants individuals from the island U.S. citizenship—including the privileges and rights it accords—Puerto Rican people have historically faced racism, anti-immigrant sentiments, and blocked incorporation into U.S. society (Meléndez, 2018). Despite their U.S. citizenship and history of migration to the U.S., they have not established enclaves at the same rate as other immigrant groups (Healey & Stepnick, 2019; Massey, 2001; Wen et al., 2009). Puerto Rican people generally have higher levels of African ancestry and, as a result, may experience similar levels of occupational, residential, and educational discrimination and disadvantage as U.S-born Black individuals (Healey & Stepnick, 2019; Massey, 2001). Compared to Cuban immigrants' social and economic integration, for instance, Mexican and Puerto Rican individuals have largely faced exclusion, even in the housing market, which I discuss in the next section.

2.4.2 Residential segregation

Racial residential segregation is one manifestation of structural racism (Powell, 2007). This form of residential separation results from diverse factors (e.g., discriminatory lending practices, racial steering, redlining) that serve to reinforce the historical and contemporary oppression of minoritized groups and their exclusion from particular residential areas (Iceland, 2014; D. R. Williams & Collins, 2001). Although some scholars have argued that the segregation of Black people in the U.S. is a unique case (D. R. Williams & Collins, 2001), this form of separation may also explain the residential patterns of Latino origin groups and the inequitable distribution of resources, opportunities, and risks across different types of enclaves.

Several studies note that U.S.-born Black people experience the highest levels of residential segregation in the U.S. (Iceland, 2014; Massey, 2001; Rothstein, 2017; D. R. Williams & Collins, 2001). Compared to the level of residential segregation between U.S.-born Black and white individuals, the degree of segregation differs between Latinos, including Latino

subgroups, and white people (Iceland, 2014; Massey, 2001; Rothstein, 2017; D. R. Williams & Collins, 2001). In addition, the concentration of Latinos in particular areas may reflect both residential segregation dynamics and migration influences.

Several factors may impact access to different residential locations across racial and ethnic lines. Given the salience of racism in the U.S., the policies, practices, and ideologies, that disparately impact Black people may also affect Latinos, especially individuals of Puerto Rican descent or those of darker skin tones who may be perceived as Black (Gómez, 2015; Healey & Stepnick, 2019). Race and income play an important role in residential segregation as Latino individuals with darker skin tones and lower incomes have been cited as having more discriminatory experiences in the housing market (Iceland, 2014; Massey, 2001; Rothstein, 2017; Yinger, 1995). Despite Mexican immigrants representing the largest portions of most types of U.S. immigration statuses, their Latino identity is often conflated with undocumented status (Asad & Clair, 2018), which may impact their access to more advantageous residential areas. The preferential treatment of Cuban people in the U.S. may afford their access to well-resourced residential locations.

Residential segregation may also be far more nuanced than the existing measures used to study the phenomenon (Lukinbeal, Price, & Buell, 2012), making it crucial to account for coinciding economic, social, and political trends. Since Latino density in particular areas may result from social exclusion and may also be due to migrant networks and global and domestic factors (Iceland, 2014), it is important to account for intersecting migration-related processes. The next section focuses on historic and contemporary immigration dynamics, which have been shaped largely by federal, state, and local immigration policies. These policies have had lasting influences on the residential destinations of Latinos in the U.S.

2.4.3 Immigration policy

From the policies that excluded Chinese immigrants in the 1880s, to the quota-based immigration system in 1924, and the high-skilled labor preference of the Immigration and

Nationality Act of 1952, racism has structured the immigration system (Bernstein, McTarnaghan, & Islam, 2021). The 1965 Hart-Celler Act ended the national origin quotas and diversified U.S. immigration. Independently of this act, immigration from Latin America—primarily Mexico, Cuba, and Central America flowed into five U.S. states: California (CA), New York (NY), Texas (TX), Florida (FL), and Illinois (IL) (Massey, 2008). Whereas, a large segment of Mexican immigrants entered the U.S. through the Bracero program (1942-1964), a U.S.-Mexico agricultural labor agreement aimed at easing agricultural labor shortages in the U.S, increased migration from Cuba followed disorder during Fidel Castro's revolution (1959) (Massey, 2008). Since the 1980s, immigrants from Central America have primarily arrived as refugees (Massey, 2008).

In the late 1980s, the hardening of the U.S.-Mexico border that aimed to deter undocumented immigrants drove them from one border crossing site to others. California's proposition 187 which also passed in an attempt to keep undocumented immigrants from using public services and institutions, diverted immigration to other states and drove away some immigrants who were already in the state (Massey, 2008). Through the 1996 Immigration Reform and Immigrant Responsibility Act, the U.S. turned to focus on immigration enforcement within its borders, a move that likely shapes where immigrants live (Asad & Rosen, 2019; Sue, Riosmena, & LePree, 2019).

2.4.3.1 Immigration enforcement

Immigration enforcement policies have fundamentally impacted the lives of immigrants and their families. Current immigration enforcement strategies were cemented with the 287(g) agreements[4] and the Secure Communities Program (SCP). These policies are implemented within U.S. borders with the help of many different actors (e.g., police officers, employers) (Jain, 2018). Whereas the 287(g) agreements broadens the criteria for deportability, the SCP relies on

[4] The 287(g) program was discontinued in 2012. The program restarted in 2017 under the Trump Administration.

information sharing through integrated immigration enforcement databases (Coleman & Kocher, 2011). These initiatives increase the significance of low-level arrests[5] and have consequential health and life impacts (Perreira & Pedroza, 2019; Rhodes et al., 2015; Toomey et al., 2014; Wang & Kaushal, 2018). While purporting to be race-neutral, in practice, immigration enforcement policies target people of particular race and social classes (Golash-Boza & Hondagneu-Sotelo, 2013; K. R. Johnson, 2012). Nativity and Latino origin shape experiences with immigration enforcement, as Latino individuals, despite their citizenship status, are often perceived as undocumented (Asad & Clair, 2018; Andrea Gómez Cervantes, 2019). Latinos with darker skin and those that look indigenous may face increased immigration enforcement risks (Andrea Gómez Cervantes, 2019).

Immigration enforcement policies can alter how Latino individuals perceive different areas and decide where to live (Asad & Rosen, 2019; Sue et al., 2019). In their study among undocumented Mexican immigrants living in Colorado, for example, Sue et al. (2019) challenged the idea of the ethnic enclave as an ideal place for new immigrants. These researchers found that some undocumented Latino immigrants perceived areas with a large Mexican population as immigration enforcement targets. Asad and Rosen (2019) also documented how some Latino families in Texas strategize about where to live to minimize their risk of contact with immigration enforcement authorities. While some undocumented Latino immigrants opted to "blend in," in majority Latino areas, others wanted to "hide in plain sight," choosing to live with other minoritized groups (e.g., living in majority Black areas) (Asad & Rosen, 2019). The unequal distribution and implementation of immigration enforcement policies (Coleman & Kocher, 2011) affects both immigrant and U.S.-born Latinos. In addition, since Blackness is criminalized in the U.S., Latino individuals with darker skin tones may face more interactions with immigration enforcement officials.

[5] Any arrest may trigger deportation (Jain, 2018).

2.4.3.2 Inclusive immigrant policies

There is little research on the role of inclusive immigrant policies and residential choice. However, one study has found that states "multicultural disposition," that is, a state's overall tendency to adopt inclusive immigrant policies, especially those that favor undocumented immigrants, has no impact on undocumented immigrants' length of stay in that state (Rocha, Hawes, Fryar, & Wrinkle, 2014). States provision of welfare benefits (i.e., extending Temporary Assistance for Needy Families (TANF) benefits to immigrants during the five-year federal ban that limits some immigrants from receiving benefits after immigrating) is also not significantly associated with undocumented immigrants' longer residence in respective states (Rocha et al., 2014). Research by Kaushal (2005) also supports this finding. In their paper, Kaushal (2005) reported that immigrants' access to public benefit programs (i.e., TANF, Medicaid, and food stamps) was either statistically insignificant or had only a weak effect on their residential choice. Overall, there are more reports of social, economic, and immigration enforcement policy drivers than inclusive policies shaping immigrants' residential choices.

2.4.4 Migration-related dynamics

This section focuses on migrant networks and the global and domestic factors that influence the residential patterns of Latinos. While migrant networks push and pull immigrants to different areas, influencing their residential choices (Massey et al., 1993), global and domestic trends shape economic opportunities across the U.S. and prospects in different areas.

2.4.4.1 Migrant networks

Migrant social networks have also shaped immigrants' residential patterns. These networks have propelled and sustained international and domestic migration—pulling immigrants to specific destinations[6] and discouraging them from moving into others (Massey, 2008; Massey et al., 1993). While multiple factors, including employment prospects, may cause

[6]This process is defined as cumulative causation (Massey, 2008). As immigrants' networks increase in one area, the chance that other immigrants will follow also increases (Massey et al., 1993).

immigrants to move, immigrant networks provide information about destinations and make such moves more likely (Massey et al., 1993). Immigrant networks ease integration into U.S. society and provide varying forms of capital (e.g., housing and employment information) that aid in settling in the new environment (Hagan, 1998). However, there are likely differences in the function and role of these networks across Latino origin groups.

2.4.4.2 Global and domestic factors

Global and domestic factors shape immigration patterns and trends (W. Li, 2019; Wen et al., 2009). Worldwide economic restructuring influences where immigrants and their families live (Massey, 2008). Over the past few decades, low-wage industries have increased in non-metropolitan areas and jobs in the construction, service, and manufacturing sectors have proliferated in U.S. suburbs (Massey, 2008; Singer, 2004). Given increasing economic opportunities, many U.S. suburbs with little or no immigrant experience have become immigrant destinations. This trend has impacted the dynamics of racial and ethnic diversity, poverty, and local policies (Murphy & Allard, 2015; Singer, 2013; Suro et al., 2011; Walker, 2018; Walker & Leitner, 2011). The Great Recession of 2007-2009 also affected many areas, that were dependent on manufacturing, construction, and real estate (Suro et al., 2011).

Gentrification—which has both positive (e.g., property value increases) and negative (e.g., residential displacement) implications, plays a role in driving out lower income residents from urban cities into more affordable suburban areas (Smith, Breakstone, Dean, & Thorpe, 2020). At the same time, urban residence has become desirable for those who once lived in suburbs (Murphy & Allard, 2015). Among groups that establish enclaves, however, social processes (e.g., gentrification, commodification) may eventually erode the benefits of living in these settings (Terzano, 2014). In addition, immigrants are more geographically dispersed than at other points in history (Massey, 2008; Singer, 2004; Suro et al., 2011). Social, economic, and political factors have led some Latino immigrants to settle in traditional immigrant destinations

with well-developed ethnic institutions (e.g., New York City) and more recently, in areas without a history of immigration (e.g., Salt Lake City) (Singer, 2004).

2.5 Summary

Ethnic enclaves remain relevant today and are changing in forms and emerging in new places (W. Li, 1998; Logan et al., 2002; Wen et al., 2009). Historical and contemporary factors have influenced this trend and continue to shape where immigrants live. To date, the majority of health-related studies have maintained the classic view of ethnic enclaves as poor, urban areas, primarily populated by one ethnic group. These studies have also often used crude population measures (e.g., the share of the ethnic or immigrant group in a geographic area). In assessing just one feature of residential settings, most studies generalize the description of early enclaves to all ethnically concentrated areas. This approach, however, is limited by its failure to jointly account for the structural, social, economic, and geographic factors that structure residential contexts and their differential impacts on health. Characterizing these distinctions will improve our understanding of the association between living in an ethnic enclave and health outcomes.

CHAPTER 3. LITERATURE REVIEW

The literature review is divided into four parts. The first section centers on PTB among Latina mothers in the U.S. and outlines the genetic, biological, behavioral, medical, social, and structural factors that are linked to this outcome. It also defines the Latina health paradox and highlights explanations for this finding. The second section focuses on ethnic enclaves and health and spotlights studies on pregnancy-related outcomes. The pathways through which ethnic enclaves may influence PTB and the operationalization and measurement of the construct, including current ethnic enclave typologies, are summarized. The third section, presents the ethnic enclave classification and defines and describes each area. Contributions to the literature and the field are also presented. The fourth section focuses on immigration enforcement and health, including birth outcomes and details the pathways that link immigration enforcement (i.e., the policies, climate, and implementation) to PTB, before presenting the immigration enforcement dynamics within classified areas.

3.1 Preterm births

Preterm births among Latina mothers (9.62% in 2017 to 9.73% in 2018) is increasing. In 2018, this figure varied across Latino subgroups and was about 9.19% among mothers of Cuban origin, and 10.87% among mothers of Puerto Rican origin; Mothers of Mexican (9.55%), and Central and South American (9.25%) origin had similar PTB rates (Martin, Hamilton, Osterman, & Driscoll, 2019). Preterm births also varies by nativity, with reports finding lower incidences among foreign-born Latinas (Montoya-Williams et al., 2020). There are also differences by state and U.S. region (Fishman, Morgan, & Hummer, 2018; March of Dimes, 2014) with Latinas experiencing the highest rate of PTB in Utah (11.12%) and the lowest rate in Maine (5.80%) (Martin et al., 2019).

I elected to focus on this outcome for several reasons. First, reducing PTB is a primary focus of the 2030 U.S. national health objectives (Health.gov, 2020). Second, as a population-level health indicator, PTB rates provide information about the health of our society. Third,

pregnancy is a sensitive window for in utero human development and injuries sustained during this time are not easily reversed (Buck Louis & Platt, 2011). Fourth, PTB is highly susceptible to maternal stress emanating from life events (e.g., job loss) (Buck Louis & Platt, 2011; Institute of Medicine, 2007), chronic stressors (e.g., neighborhood exposures), racism (Krieger et al., 2020), and the political climate (e.g., elections, exclusionary immigration policies) (Gemmill et al., 2019; Krieger, Huynh, Li, Waterman, & Van Wye, 2018; Nichols, LeBrón, & Pedraza, 2018; Torche & Sirois, 2018). Fifth, there are profound health implications associated with PTB.

After birth defects, PTB are the second leading cause of infant death in the U.S. and children born premature are at greater risk for morbidity and mortality (Blencowe et al., 2019; Centers for Disease Control and Prevention, 2019). Premature births are associated with breathing, vision and hearing issues, feeding difficulties, cerebral palsy, and other developmental delays. These outcomes place social, economic,[7] and emotional burdens on families, communities and society, costs that are unevenly distributed by race and ethnicity (Beam et al., 2020; Blencowe et al., 2019; Centers for Disease Control and Prevention, 2019; Environmental Protection Agency, 2019; March of Dimes, 2015; Waitzman & Jalali).

3.1.1 Measurement

Preterm births are clinically defined and include all deliveries that occur at less than 37 weeks of gestation (Buck Louis & Platt, 2011). This definition remains constant even when the method (e.g., using women's reports of their last menstrual period or ultrasound) used to attain gestational age varies (Buck Louis & Platt, 2011). The 37-week cutoff reflects the period when biological processes and clinical, social, behavioral, and other risk factors are believed to converge (Buck Louis & Platt, 2011). Preterm births are either medically indicated or spontaneous deliveries (Buck Louis & Platt, 2011). Medically indicated PTB (approximately 30–

[7]A recent report estimated an economic burden of over $25.2 billion ($64,815 per PTB). This 2016 estimate included medical care for premature infants, maternal delivery costs, early intervention services, special education services, devices, and lost labor productivity. When we consider caregiving and lifelong disabilities this figure could be even higher (Waitzman & Jalali).

35%) occur when a clinician deems that delivery should be induced (Shapiro-Mendoza et al., 2016; Valero de Bernabé et al., 2004). In most cases, such deliveries may be less risky to mothers and their fetus (Buck Louis & Platt, 2011; Institute of Medicine, 2007). Spontaneous deliveries occur when membranes (the amniotic sac) rupture (25–30%) or with intact membranes (40–45%) (Shapiro-Mendoza et al., 2016; Valero de Bernabé et al., 2004). The next section details likely causes and PTB risk factors.

3.1.2 Causes, mechanisms, and risk factors

This section focuses on PTB risk factors and highlights potential mechanisms that yield this outcome. PTB results from factors that lead to the systemic stimulation of the infection or inflammation pathways (Goldenberg, Culhane, Iams, & Romero, 2008; Institute of Medicine, 2007). The genetic, biologic, behavioral, social, structural, and physiological factors and influences of PTB are presented individually, but they likely interact to influence PTB risk.

3.1.2.1 Genetic markers

Although race is often characterized as a fixed trait in clinical research and more commonly used in the biological sciences to explain health differences (Eichelberger, Alson, & Doll, 2018), race is neither a cause or a risk factor for the disparities in PTB (Institute of Medicine, 2007). Genes interact with the social and physical environment to produce distinct outcomes (Buck Louis & Platt, 2011; Kuh, Ben-Shlomo, Lynch, Hallqvist, & Power, 2003; Valero de Bernabé et al., 2004). Research in this area has documented familial and intergenerational influences on PTB (Institute of Medicine, 2007). These studies find that among family members, when one sister gives birth preterm, the other sister has an 80% chance of also delivering too early (Goldenberg et al., 2008; Institute of Medicine, 2007; Valero de Bernabé et al., 2004).

3.1.2.2 Biological pathways

Several biologic factors are associated with PTB (Buck Louis & Platt, 2011). The most commonly cited is intrauterine infection, because of its association with inflammation. Intrauterine infection results in PTB in about 25-40% (likely an underestimate) of pregnancies

(Goldenberg et al., 2008); women who give birth preterm usually have some form of intrauterine infection (Goldenberg et al., 2008; Institute of Medicine, 2007). This process includes bacterial infections in the amniotic sac and inflammatory responses (Goldenberg et al., 2008). Genital infections, like bacterial vaginosis are also important risk factors, as they change the microbial ecosystem of the genitals, leading to the inflammatory responses that are associated with PTB (Buck Louis & Platt, 2011; Goldenberg et al., 2008; Institute of Medicine, 2007).

3.1.2.3 Behavioral and medical factors

Some of the recognized behavioral risk factors include diet, micronutrient consumption (e.g., folate, iron), physical activity, tobacco use, heavy alcohol use, and illicit drug use. These factors are modifiable and may emerge as coping strategies during stressful periods (Buck Louis & Platt, 2011; Goldenberg et al., 2008; Institute of Medicine, 2007; Valero de Bernabé et al., 2004). Socioeconomic status (SES) is also associated with these risk factors, as women living in poverty may be less likely to have the resources to adopt alternate behaviors.

Pregnancy-related medical risk factors, including depression, thyroid disease, diabetes, and hypertension are associated with elevated PTB risk because they produce inflammatory cytokines or proteins (Buck Louis & Platt, 2011; Goldenberg et al., 2008; Valero de Bernabé et al., 2004). Use of prenatal care during pregnancy is vital for the health of the fetus (Institute of Medicine, 2007). Although such services promote healthy births, SES is a barrier to access and use. Latina mothers are also more likely than non-Hispanic white mothers to experience these behavioral and medical risk factors, placing them at higher risk for PTB (March of Dimes, 2014).

3.1.2.4 Social and structural influences

Lower economic positions, educational attainment, younger and older maternal ages, and single marital status have also been linked to PTB (Goldenberg et al., 2008; Valero de Bernabé et al., 2004). These influences are exacerbated by structural risk factors, which emanate from differential access to power, opportunities, and resources (Lawrence & Keleher, 2004; Viruell-Fuentes et al., 2012). Structural racism, for example, may influence PTB risk

through residential segregation which creates marked differences across residential contexts (Alhusen, Bower, Epstein, & Sharps, 2016). Neighborhood conditions, including the social (e.g., crime, poverty), service (e.g., access to quality medical care), and physical environments (e.g., exposure to toxins), are hypothesized to have direct and indirect influences on PTB (Environmental Protection Agency, 2019; Institute of Medicine, 2007; Krieger et al., 2020; Ncube, Enquobahrie, Albert, Herrick, & Burke, 2016).

Social and structural risk-factors related to immigration may co-occur to heighten PTB risk. Immigration-related stress, including the context of arrival and the sociopolitical climate can elevate PTB risk among foreign and U.S.-born Latina mothers (Krieger et al., 2018; Novak, Geronimus, & Martinez-Cardoso, 2017). Stress emanating from residential contexts, including the social and physical environment, is one way structural factors influence PTB risk (Institute of Medicine, 2007). Exposure to chronic and acute stress is hypothesized to operate through maternal neuroendocrine and immune pathways and the placental corticotropin releasing hormone (Buck Louis & Platt, 2011; Goldenberg et al., 2008; Institute of Medicine, 2007; Shapiro-Mendoza et al., 2016). When expressed, this leads to infections and inflammation, known biological precursors to PTB (Buck Louis & Platt, 2011; Goldenberg et al., 2008; Institute of Medicine, 2007; Shapiro-Mendoza et al., 2016; Valero de Bernabé et al., 2004).

Pregnant women who experience elevated levels of stress are at increased risk for PTB (Buck Louis & Platt, 2011; Goldenberg et al., 2008; Institute of Medicine, 2007; Shapiro-Mendoza et al., 2016; Valero de Bernabé et al., 2004). This risk is higher if mothers also have poor coping behaviors (Institute of Medicine, 2007). Although the normal stress response is to trigger the hypothalamic pituitary axis, increased stress exposures can disrupt the normal functioning of this system. Therefore, residential contexts can influence PTB risk through direct physiological dysregulation and through behavioral coping mechanisms. Though some researchers have documented “spill-over” effects, whereby immigration enforcement initiatives

also impact U.S. born Latinas, these experiences may be more acute for the foreign-born, even if they are not undocumented (Novak et al., 2017; Torche & Sirois, 2018).

3.1.3 Latina health paradox

Foreign-born Latinas generally have favorable birth outcomes than their U.S. born counterparts (e.g., non-Hispanic white and U.S.-born Latinas) despite their lower incomes, lower educational attainment, and lower access to medical and prenatal care (Acevedo-Garcia & Bates, 2008; Acevedo-Garcia, Soobader, & Berkman, 2007; Flores et al., 2012). Several explanations for this "epidemiologic paradox," have been offered, including the healthy immigrant effect, which posits that immigrants are generally healthier than those who remain in the sending country; and the salmon bias, which suggests that healthy immigrants are represented in U.S. vital statistics when the elderly and those who are retired return to their home country (Hummer, Melvin, & He, 2015). The cultural buffering explanation centers on cultural values, and social and lifestyle factors (e.g., diets), and suggests that some immigrant's cultural orientation may protect against their adoption of unhealthy behaviors (e.g., smoking, alcohol use) (Scribner & Dwyer, 1989). However, some researchers have found reason, based on race, documentation status, and country of origin, to dispute this paradox (DeSisto & McDonald, 2018; Mydam et al., 2019; Richardson et al., 2020). Since this health advantage is hypothesized to decline over time and across generations (Hummer et al., 2015), accounting for immigrants residential contexts is crucial. Understanding how these contexts shape PTB risk by nativity will advance research in this area.

3.1.4 Summary

Genetic, biological, behavioral, medical, social, and structural factors are associated with PTB and may interact to shape Latina mothers' risk for this outcome. Though Latina mothers may have lower risk of PTB, despite their generally lower SES and educational attainment, this outcome is not enjoyed by all members of the population and may depend on residential contexts. Latina mothers' residential contexts—especially their residence in ethnic enclaves—

may be associated with varied stressors or buffers that influence PTB risk. In the next section, I turn to research on ethnic enclave residence and PTB.

3.2 Ethnic enclaves

In this section, I introduce research on ethnic enclaves and health and highlight studies on pregnancy-related outcomes. I discuss the mechanisms proposed to explain these relationships and focus on the operationalization and measurement of ethnic enclaves.

3.2.1 Ethnic enclaves and health

Research on ethnic enclaves and health has yielded mixed results. While some studies report that ethnic enclaves, or areas with high co-ethnic density, are protective for health, others have not reached this conclusion. This literature review reveals that the influence of ethnic enclaves on health depends on the operationalization of the construct, the health outcome, the ethnic group that is the focus of the study, and the reference group.

Living in ethnic or immigrant dense areas is associated with countervailing effects. On the one hand, studies find that ethnic enclaves may promote health through culturally-specific traditions (e.g., diets, norms) but may erode health by limiting opportunities to be healthy (e.g., less areas for physical activity) (Osypuk et al., 2009). Some studies characterize ethnic enclaves as areas with poor social environments, little social cohesion, and low neighborhood-based civic participation, as a result of their poorer socioeconomic environments (Osypuk et al., 2009), and others suggest higher levels of these same attributes (K. Li, Wen, & Henry, 2017). The lack of clarity complicates our understanding of observed health effects and marks a need to better understand Latino immigrants' residential contexts.

There are also incongruous findings across diverse health outcomes, nativity, and national origin. In their study, K. Li et al. (2017) used census-tracts to investigate the association between ethnic density, immigrant concentration, and cardiovascular disease (CVD) risks factors (i.e., high blood pressure (HBP), high cholesterol level (HCL)). The authors found higher odds of HBP and HCL among residents in areas where the proportion of Latino residents was

above 25% and lower odds of these same outcomes in areas where immigrant density was high (4.9% - 57.2%), relative to low (0%-4.8%). Using a county-level measure of Hispanic density, Rodriguez et al. (2018) reported similar results. Specifically, Rodriguez et al. (2018) observed a graded relationship between Hispanic density and CVD mortality. As ethnic density increased, so did CVD mortality. By also assessing county-level covariates, the authors (Rodriguez et al., 2018) concluded that ethnic enclaves likely had more uninsured individuals and less primary care physicians, which lessened hospital visits and contributed to CVD mortality.

However, health outcomes associated with living in an ethnic enclave may depend on the socioeconomic conditions of the enclave. Roy et al. (2013) assessed the health of Puerto Ricans in the U.S. and found that Island-born Puerto Ricans living in ethnically concentrated, low socioeconomic areas were more likely to report worse health outcomes (i.e., self-reported health, functional limitations, and health symptoms) than their counterparts who lived outside of these settings. The authors concluded that ethnic enclaves may be harmful for island-born Puerto Ricans' health if they reside in low SES areas. The enclave and neighborhood income interaction was not significant for U.S. born Puerto Ricans. In another study, neighborhood ethnic density was only significantly associated with Latino children's respiratory health (i.e., asthma, wheezing, bronchitis) when other environmental factors (e.g., having trouble with pests in the home) were considered (Grineski et al., 2016). In multilevel models, however, ethnic density was associated with lower odds of wheezing in sleep among poorer children, leading the authors to conclude that social support within enclaves may be salient for poorer families (Grineski et al., 2016).

The association between living in an ethnic enclave and health may also depend on age and the health outcome under study. Other research suggests a health advantage among older Mexican Americans with increasing ethnic concentration (Eschbach, Ostir, Patel, Markides, & Goodwin, 2004), and for Hispanic immigrants who live in low poverty racially segregated areas (Do & Frank, 2020). These benefits are less common with diseases like cancer, where Hispanic

women living in lower SES communities experience higher odds of all-cause mortality (Von Behren et al., 2018) and late-stage diagnoses (Fang & Tseng, 2018).

Summary

These papers reveal two key findings. First, ethnic density and immigrant concentration may operate through disparate pathways when CVD-related outcomes are considered (K. Li et al., 2017; Rodriguez et al., 2018). However, research that conceptualizes how ethnic density may uniquely operate or interact with immigrant concentration is needed. Second, the socioeconomic conditions of the enclave may play an important role in residents health. On the one hand, those who live in ethnically concentrated, low SES areas may be at higher risk of deleterious health outcomes than their counterparts who live outside of these settings (Roy et al., 2013). Yet, social support within enclaves may buffer the harmful effects of residing in low SES areas (Grineski et al., 2016). More research is needed to disentangle this finding. That is, understanding the contexts where the enclaves' social features—operate above and beyond its harmful impacts—to influence health. One limitation of the literature, that impacts our understanding of enclave and health effects, is that ethnic density is expected to operate similarly across all contexts. In reality, the socioeconomic conditions of the enclave and the proportion of immigrants within the enclave may shape how enclaves' impact health. The next section highlights research on ethnic enclaves and pregnancy-related outcomes, where findings are also generally mixed and have similar limitations.

3.2.2 Ethnic enclaves and pregnancy-related outcomes

This section provides an overview of research on ethnic enclaves and pregnancy-related outcomes, which has also yielded mixed results. In general, these studies raise more questions than answers. For instance, it is still unclear whether the social features of enclaves matter more than the socioeconomic context. While some research (Mason et al., 2011) finds that residents experience positive birth outcomes despite the socioeconomic constraints of the enclave, in other studies, these constraints result in poorer birth outcomes (Osypuk et al., 2010).

These differences also vary by nativity, with profound implications (e.g., higher odds of PTB) for U.S. born individuals who live in ethnic enclaves (Osypuk et al., 2010). Authors have also used several different ethnic enclave measures and geographical units (e.g., discussed in section 3.2.4.) which has resulted in dissimilar results across studies. In addition, despite creating high, medium, and low categories, no study explained what moderately ethnically concentrated places represent. As the ethnic enclave classification will show in section 3.2.7, such delineations matter conceptually as much as they do analytically. It also remains unclear how these findings change when stratified by geography—an important dimension of place.

In a national study on the association between ethnic density, birth outcomes, and maternal smoking, Shaw et al. (2010) categorized counties as having 0%–0.99% (reference), 1%–4.99%, 5%–14.99%, 15%–49.99%, and ≥ 50% Hispanic ethnic density. Compared to counties with the lowest level of ethnic concentration, every other area had lower odds of smoking during pregnancy. This finding was especially true for foreign-born Hispanic mothers, relative to U.S.-born Hispanic mothers, who experienced lower odds of smoking during pregnancy in all settings. The likelihood of infant mortality varied by the proportion of Hispanics in the county, with more concentrated counties (5%–14.99%, 15%–49.99%, and ≥ 50%) experiencing significantly lower odds of infant death. Although the authors did not report significant results for PTB, they found lower odds of low birthweight (LBW) only among those who lived in areas with Hispanic ethnic density between 5%–14.99%. Despite this result, Shaw et al. (2010) did not detail the importance of this finding. Although a graded effect was not observed, the mechanisms theorized to operate in counties with 1%–4.99% Hispanic ethnic density were also hypothesized for areas with ≥ 50% Hispanic density. The authors concluded that shared culture, social networks, and social capital were protective in less concentrated settings without articulating how these contexts differ.

In another study, readers are left to interpret what the different enclaves the researchers measure represent and how each may operate to influence health. Noah, Landale, and Sparks

(2015) used two measures of residential segregation (an isolation index and an interaction index) to create four different areas: a Mexican immigrant enclave (i.e., Mexican foreign-born interaction), a Mexican ethnic enclave (i.e., Mexican isolation), a Hispanic pan-ethnic enclave (i.e., Hispanic interaction), and predominantly white neighborhoods (i.e., non-Hispanic white interaction). The authors found that among Mexican-origin mothers, living in a Mexican ethnic enclave, a Mexican immigrant enclave, or a Hispanic enclave was associated with lower odds of smoking during pregnancy compared to white neighborhoods. Despite delineating different residential contexts and finding support for lower odds of smoking in all enclave environments, the authors did not address if the social processes—resulting from ethnic or immigrant networks (e.g., social support)—that drive this finding are similar across contexts.

As studies assessing health outcomes show (Grineski et al., 2016; Roy et al., 2013), enclave effects on birth outcomes may also depend on area-level socioeconomic factors and Latino origin. Research by Mason et al. (2011) examined neighborhood ethnic density (Hispanic ethnic density > 25%) and PTB across seven ethnic groups, including mothers from Spanish Caribbean, Central American, and South American countries, in New York City. The authors found that the excess risk of PTB among mothers of Spanish Caribbean and Central America origin who lived in ethnic enclaves was less than that of their same ethnicity counterparts living in less ethnically dense settings (≤25% Hispanic ethnic density). However, South American mothers who lived in ethnically dense areas were at higher risk of PTB than their counterparts who lived outside of these settings. When models were stratified by neighborhood deprivation, poorer enclaves were associated with lower PTB risk only among Spanish Caribbean, Central American, and South American origin mothers. Central and South American mothers who lived in ethically dense settings were at higher risk of PTB in more affluent areas. The authors concluded that poorer areas might rely much more on the social benefits of the enclave (e.g., shared ethnic or cultural identity) and thus, reap its benefits despite the socioeconomic conditions. Based on these studies (Grineski et al., 2016; Mason et al., 2011; Roy et al., 2013),

it is possible that enclaves' social features (e.g., social support and networks) may outweigh its economic constraints. However, research that considers this possibility is needed.

In addition to socioeconomic dimensions, ethnic enclave measures should also account for ethnic and immigrant density, the social dimension of ethnic enclaves. M. A. Johnson and Marchi (2009) used areas where >55% of the census tract were Hispanic and foreign-born (i.e., percentage foreign-born Latino) to define the ethnic enclave and used speaking English as a marker of acculturation. Latino English speakers who lived in Latino immigrant enclaves had higher odds of low birthweight (LBW) than Spanish speakers in these settings and English speakers living elsewhere. The authors pointed to the dissonance that might arise from living in immigrant enclaves and not speaking the primary language and suggested that non-Spanish speakers may have lower social capital within these settings, which could negatively impact maternal and infant health. This paper highlights that access to social capital within enclaves may be limited for some residents. It is possible that for immigrants to access the benefits of living in an enclave, immigrant concentration must also be high.

There are also important nativity differences associated with enclave effects and pregnancy-related outcomes. In their study, Osypuk et al. (2010) used census data to construct a residential segregation exposure index for their Mexican-origin sample. Osypuk et al. (2010) applied the exposure index, which assesses the probability of contact between two groups (often minority and majority groups), to investigate Mexican immigrants and U.S-born Mexican individuals' potential contact with neighbors who are either Mexican immigrants or U.S-born Mexican individuals. The researchers conceived very high, high, moderate and low (reference) exposure ethnic and immigrant enclaves. Latina mothers who had high exposure to immigrant enclaves lived in areas where the average Mexican immigrant or U.S-born Mexican individual in the MSA lived in an area with a high proportion of Mexican immigrants.

Osypuk et al. (2010) justified their use of MSAs—which are generally larger groupings than counties—by explaining that Mexican mothers who live in MSAs with large Latino

populations are more likely to be exposed to enclave environments, irrespective of whether they live in a neighborhood that would be defined as an enclave. Relative to U.S. born Mexican-origin mothers with low exposure to ethnic enclaves, those with high exposure to ethnic enclaves experienced greater LBW risk. However, Mexican-origin mothers with high exposure to immigrant enclaves experienced lower LBW risk. These findings were insignificant for infants born to foreign-born Mexican-origin mothers, regardless of where they lived. The authors concluded that ethnic enclaves may be detrimental for U.S. born Mexican-origin mothers who are exposed to socioeconomically deprived enclaves and pointed to their downward assimilation into these residential contexts as a risk factor for LBW.

These findings highlight the importance of stratifying by nativity to uncover potential differences in enclave and health effects between foreign and U.S.-born individuals. First, Osypuk et al. (2010) isolates exposure to ethnic enclaves from exposure to immigrant enclaves, theorizing that these environments may function differently to influence the birth outcomes of U.S. born Mexican origin mothers, but not Mexican origin immigrant mothers. That the immigrant enclave was associated with lower odds of LBW, but not the ethnic enclave, points to the need to further disentangle what it is about these environments that contribute to disparate birth outcomes for the U.S.-born, but not immigrant mothers. This finding is in line with other research (M. A. Johnson & Marchi, 2009) that signals a need to account for both density measures (e.g., percent Latino, percent foreign-born) to understand enclave and health effects.

In their study, DeCamp et al. (2015) defined Latino immigrant neighborhoods with the Latino immigrant concentration score, which included the proportion of foreign-born residents, non-citizens, immigrants, Spanish- speaking adults, and Latinos in the census tract. The odds of infant mortality among foreign-born Mexican women residing in Latino immigrant neighborhoods in Los Angeles (LA), County were significantly higher than that of their counterparts living outside of these areas (DeCamp et al., 2015). The pattern held among U.S. born Mexican women after adjusting for neighborhood characteristics and individual-level SES (i.e., maternal

education) but became insignificant with other controls (e.g., prenatal care utilization). The authors (DeCamp et al., 2015) explained that living in an immigrant enclave may denote living in settings with conditions that adversely impact survival and suggested that such areas likely have lower social cohesion which influences the level of social support that is available to mothers during pregnancy. However, results from Jenny, Schoendorf, and Parker (2001) deviate from this finding. In their study, Jenny et al. (2001) found no association between residing in an ethnic enclave, defined with the proportion of births to Mexican-American women in each county, and infant mortality for foreign-born Mexican women. The authors (Jenny et al., 2001) also found ethnic enclaves to be protective for U.S. born Mexican women which deviates from Osypuk et al.'s (2010) report, which highlights the dissimilarities across studies in this area.

Summary

These studies underscore a need to update the conceptualization and measurement of ethnic enclaves for health research. It is not just that extant studies have used different enclave measures (which I discuss in detail in section 3.2.4), comparison groups or geographical units, but that the majority of papers have conceptualized ethnic enclaves in different ways. While one frame suggests that ethnic enclaves are poor areas which are densely populated by one ethnic group, other conceptualizations suggest the opposite. Even those that construct population density measures that include low, medium, and high (Shaw et al., 2010), for example, or other configurations with residential segregation indexes (Noah et al., 2015), have failed to articulate how these areas differ. The incongruent conceptualization and measurement limit our understanding of enclave and health effects. In addition, there are differences by Latino origin nativity, with varied PTB outcomes among U.S. and foreign-born Latinas. According to Osypuk et al. (2010), the ethnic enclave may be detrimental for U.S. born Latinas, but for Jenny et al. (2001) these settings are protective for the U.S. born. These and other studies highlighted in the review justify the need for a new ethnic enclave measure. In the next part, I detail the

mechanisms proposed to link ethnic enclaves and birth outcomes before describing the diverse ways enclaves have been operationalized in health research.

3.2.3 Mechanisms linking ethnic enclaves and birth outcomes

Researchers have proposed several mechanisms to explain the influence of ethnic enclaves on birth outcomes. These explanations mirror those hypothesized to impact health. The pathways through which enclaves may influence birth outcomes include structural, social, and behavioral processes that buffer or accentuate the effects of living in ethnic enclaves. While most studies have hypothesized ethnic enclaves to be protective, there are also pathways through which ethnic enclaves may prove detrimental to health. Although few studies have tested these mechanisms, scholars have proposed similar processes across studies.

First, living in ethnic enclaves is hypothesized to buffer the impacts of frequent exposure to interpersonal racism. It is important to note however, that some researchers (Grineski et al., 2016) have argued that discrimination within enclaves, based on citizenship, nativity, and English proficiency may complicate notions about the protective nature of these areas. Second, social capital and social networks are believed to influence the health of enclave residents (Becares & Nazroo, 2015; Kane, Teitler, & Reichman, 2018; Osypuk et al., 2010). These networks are believed to provide resources that aid immigrant integration and access to services in their language. Osypuk et al. (2010) argues that in ethnic enclaves, instrumental, interpersonal, and community support may be available to women during pregnancy but notes that levels of this resource may depend on the socioeconomic context. Third, social control in the form of cultural norms and community expectations reinforce notions about the behaviors (e.g., smoking, physical activity) that shape PTB risk (Kane et al., 2018; Osypuk et al., 2010).

Living in ethnic enclaves may also have negative effects. Notably, these same mechanisms are hypothesized to function in the opposite direction when studies fail to find a positive relationship between ethnic enclaves and health. For example, Osypuk et al. (2009) characterized ethnic enclaves as having lower levels of social cohesion while K. Li et al. (2017)

categorized enclaves as having higher levels of social organization. As this literature review has shown, economic conditions and nativity are important to consider. Enclaves in high poverty settings or areas where members have insufficient resources, are less likely to be beneficial to community members (Menjívar, 2000). Characterizing these distinctions will enhance our understanding of living in an ethnic enclave and PTB risk. In the next section, I discuss how ethnic enclaves are typically operationalized and measured in health research.

3.2.4 Operationalization and measurement of ethnic enclaves

There is no agreed-upon analytical definition or validated measure of an ethnic enclave, which likely contributes to mixed findings on how ethnic enclaves influence health. Scholars have used several measures, analytical approaches, and geographical levels to assess the association between living in an ethnic enclave and health (Fang & Tseng, 2018; Ncube et al., 2016). As a proxy for residing in an ethnic enclave, several studies use the proportion of the ethnic group under study, relative to the total population in a specific area. The majority of studies rely on U.S. census data aggregated at different geographical scales (e.g., census tract, zip code, county, hospital referral regions (similar to MSAs)) to construct their ethnic or immigrant concentration measures. Studies generally categorize continuous ethnic concentration measures (percent Latino, percent foreign-born) with tertials (Jenny et al., 2001; K. Li et al., 2017; A. D. Williams et al., 2020), quartiles (Kane et al., 2018; Osypuk et al., 2010; Osypuk et al., 2009) or quintiles (Froment et al., 2014; Rodriguez et al., 2018; Shaw et al., 2010; Von Behren et al., 2018). Other studies have used an enclave index with varying measures (e.g., percent foreign-born, percent Spanish-speaking, percent recent immigrants) and then constructed quantiles (Von Behren et al., 2018). However, a limitation of these approaches is that by relying solely on ethnic or immigrant concentration measures, these approaches lead to attributing health differences to the population living in particular areas rather than the determinants of health that vary across residential contexts.

A subset of studies has jointly assessed immigrant or ethnic concentration and income and have highlighted the importance of assessing area-level SES characteristics. With data from the CA Cancer Registry, Von Behren (2018) and Froment (2014) used the interaction between an ethnic enclave index and a composite neighborhood SES measure to assess women's risk for cancer outcomes and found that Hispanic women who lived in low SES and high ethnic enclave areas had higher rates of invasive cervical cancer (Froment et al., 2014) and all-cause mortality (Von Behren et al., 2018) than their counterparts in high SES, low ethnic enclave areas.

Despite improvement over approaches that only use percent foreign-born or percent Latino, a limitation of this approach is that it is unclear what each place the interaction term generates represents. First, because of their large foreign-born population and generally higher SES, the index may group areas, such as ethnoburbs, which are less ethnically concentrated than ethnic enclaves, into high enclave, high SES settings. Doing so may misrepresent how the social dynamics within these contexts operate differently than in ethnic enclaves to influence health. Second, the index does not account for geography (i.e., urban vs. suburban), which may lead to generalizing the experiences of immigrants, regardless of where they live. The tendency to describe all ethnically concentrated places as operating similarly has limited our understanding of the influence of residential contexts on health. In the next section, I focus on the role of geography, as few studies in this area have included this measure in their study.

3.2.5 Geography and place

Geography generally refers the interrelation between people (e.g., migration), places (e.g., counties, cities, towns), spaces (e.g., urbanization, land use), and the environment (e.g., physical and natural resources) (Bambra, 2018; Cummins et al., 2007; Curtis & Rees Jones, 1998). In this study, these concepts are related. For example, geography may structure the economic environment and opportunities (e.g., access to transportation, housing quality, quality jobs, and high-quality schools (Bambra, 2018)). Geography is associated with the physical

environment and influences exposure to green spaces, toxic sites, and air and noise pollution (Bambra, 2018). Geography may also delineate the social environment (Bambra, 2018; Cummins et al., 2007; Curtis & Rees Jones, 1998), as areas with higher levels of social capital may have lower mortality rates and better overall health (Bambra, 2018; Kawachi & Berkman, 2000). These influences are not distributed evenly and reflect the political interests that are associated with diverse health outcomes (Bambra, 2018; Krieger, 2012).

The urban-suburban-rural classification is one demarcation tool that is used to delineate different geographical areas (U.S. Census Bureau, 2010). It is often used to study population changes (Parker et al., 2018; U.S. Census Bureau, 2010) and to monitor the health of residents in communities across the U.S (Ingram & Franco, 2014). Some reports suggest that rural and urban areas have higher rates of adverse health outcomes than suburban areas (Eberhardt & Pamuk, 2004; Ingram & Franco, 2014). With respect to pregnancy outcomes, rural areas have the highest rate of infant mortality (Mohamoud, Kirby, & Ehrenthal, 2019) and suburban areas have lower PTB rates than urban and rural areas (Branum, n.d.).

Despite evidence of immigrants growing residence in suburbs and the increasing rate of poverty in these areas (Suro et al., 2011), geography has often only been evoked to cite the scale (e.g., census tract, neighborhood, county, state) used to generate population measures. Although geography intersects with the social and economic features of ethnic enclaves, the ways this might differ along the urban-suburban-rural classification has rarely been examined. In addition, evaluating just the social dimension (i.e., ethnic density measures) of ethnic enclaves, will not capture the different residential contexts that are emerging.

Ethnic suburbs or ethnoburbs are just one example of affluent suburban areas (W. Li, 1998). Living in these settings may include material advantages (e.g., access to quality health-enhancing resources and physical environments), which likely also impact PTB. These areas may also be largely different from suburban spaces that have fewer immigrants. Currently, gaps remain in our understanding of the residential contexts that produce deleterious health and birth

outcomes among Latina mothers by geographic classification. Ethnic enclaves are far more nuanced than is often presented in the health literature. Several scholars (Maas, 2016; Tam, 2019; Walton, 2015) have called for a renewed focus on immigrants' residential contexts, arguing that immigrants of the same race or ethnic group may live in substantively different contexts with exposures that result in health disparities. In the next part, I discuss these studies and assess their proposed enclave typologies and classifications.

3.2.6 Ethnic enclave typologies

The literature review focuses on three papers that articulate differences between ethnic enclaves to investigate health outcomes. Of the three papers, two are among Asians (Tam, 2019; Walton, 2015); the other focuses on Latino residents (Maas, 2016). All studies were conducted using neighborhoods and counties in CA, with two centering on neighborhoods in LA County (Maas, 2016; Tam, 2019). Only one study (Tam, 2019) supplemented their approach with interviews to triangulate their classification. Other reports focusing solely on U.S. suburbs, have generated up to 10 different types of these residential contexts (Mikelbank, 2004). The American Communities Project has also identified 15 different county types across the U.S. (The American Communities Project, 2021).

Using spatial analyses, Maas (2016) delineated four Latino ethnic communities in LA: the gateway, barrio, the enclave, and the ethnoburb and defined them using neighborhood immigrant concentration (the proportion of neighborhood residents who (1) were Hispanic/Latino, (2) were born outside the U.S., (3) had immigrated to the U.S. since 1990, (4) who spoke Spanish, and (5) who were not U.S. citizens) and concentrated disadvantage (the proportion of households that (1) lived in poverty, (2) were headed by a female living alone with her children, (3) lived on public assistance, (4) did not own their home, (5) had incomes less than $24,000, and (6) were composed largely of children (<18 years) measures. Gateways were defined as the penultimate immigrant neighborhoods, where new immigrants settled upon arrival and ethnoburbs reflected migration into suburban areas and spaces where upwardly

mobile immigrants eventually relocate. Barrios and enclaves were the middle residential areas before immigrants finally achieved residence in ethnoburbs. Relative to those who lived in the gateway, however, residents in ethnoburbs had the highest illness scores (Maas, 2016). Maas (2016) suggested that acculturation and social capital were different in each setting and social capital likely decreased as immigrants moved out of gateways. This finding of worsening health among Latinos in ethnoburbs was not in line with Waltons' (2015) study among Asians in CA.

Walton (2015) used spatial methods and a two-stage decision process with the proportion of foreign-born individuals and SES to classify communities of constraint, resurgent communities, and immigrant enclaves. Communities of constraint resulted from discrimination and structural constraints and represented areas that had high proportions of U.S.-born individuals with low SES. Resurgent communities where analogous to ethnoburbs and foreign and U.S. born individuals with high SES choose to live in these areas. Immigrant enclaves aligned with prevalent descriptions and were characterized as having high proportions of foreign-born individuals with low SES. The author found that those in resurgent communities had the highest odds of reporting subjectively good health. In their view, education and income are resources that can be used to protect health.

In their conceptual paper, Tam (2019) used U.S. census data to develop a classification with: (1) a social measure, (i.e., ethnic and immigrant density), the standard deviation from the regional mean, (2) a geography proxy (i.e., population density), and (3) an economic indicator (i.e., poverty), median household income to delimit ethnic enclaves, and ethnoburbs from other places (areas that could not be classified). Since the decision tree permits using theory, data, a priori knowledge, and a review of the literature, this study builds upon Tam's (2019) approach (see Figure 1). Ethnic enclaves were conceptualized as low-income, urban areas and the first-place immigrants settle upon arrival to the U.S. Ethnoburbs denoted areas where immigrants eventually reside as they integrate into U.S. society. The health benefits of living in ethnic enclaves were hypothesized to operate through social cohesion whereas the heterogeneity in

ethnoburbs was predicted to leave ethnic residents in these areas more exposed to interpersonal racism, leading to poor health. Since the goal of their paper was to establish a way to differentiate ethnic enclaves from ethnoburbs in LA, the classification and their hypotheses were not empirically tested.

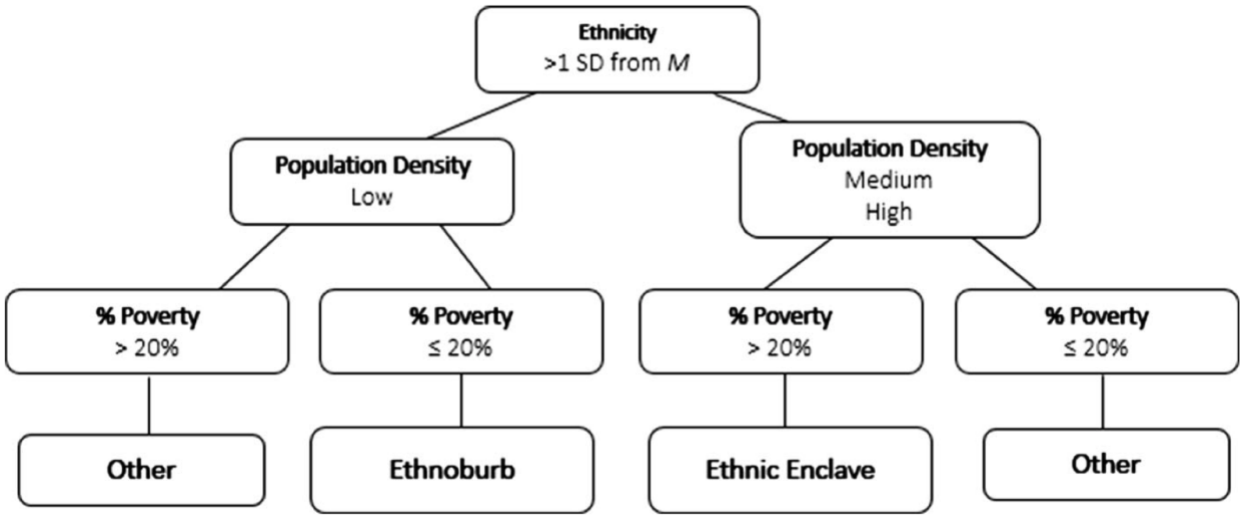


Figure 3.1. Tam's (2019) classification of ethnoburbs and ethnic enclaves in LA

3.3 The ethnic enclave classification

The revised ethnic enclave classification (see Figure 2) makes four modifications to Tam's (2019) conceptualization and measurement of ethnic enclaves.

Conceptualization

First, Tam (2019) asserts a straight-line assimilation process, whereby immigrants reside in ethnic enclaves before settling in ethnoburbs. However, this framing does not account for the structural blocks that some immigrants face should they desire to move out of ethnic enclaves nor does it consider that immigrants assimilate into all strata of U.S. society (Pais, South, & Crowder, 2012; Wright, Ellis, & Parks, 2005; Zhou & Portes, 1993). Moreover, immigrants do not only consider two types of ethnic environments. This binary view, for instance, does not account for immigrants who live among U.S.-born co-ethnics in areas marked by deliberate residential segregation. Immigrants live in different types of settings, and the modified classification allows this possibility. In addition, because Latinos were in parts of what is now the

U.S. before Mexico's cession of lands and the Texas annexation in the 1840s, our understanding of Latino residential patterns in the U.S. cannot be framed solely with immigration theories (Arreola, 2004). The modified classification weaves theoretical perspectives that foreground structural blocks and ethnic preference in highlighting the distribution of Latinos across varying contexts. In conceptualizing and delimiting more than two types of enclaves, the classification creates different residential possibilities.

Measurement: The social environment

Second, Tam's (2019) classification only uses a measure of ethnic density and does not account for the share of foreign-born residents. This inclusion is essential to understanding how varying residential contexts result in dissimilar experiences for residents. Living in an immigrant dense ethnic enclave may result in different experiences with immigration enforcement than living in areas less concentrated with immigrants. In addition, immigrants who live in ethnic enclaves, with fewer immigrants may be more isolated than those who live in settings with a large immigrant population (Hurtado-de-Mendoza, Gonzales, Serrano, & Kaltman, 2014; Viruell-Fuentes, Morenoff, Williams, & House, 2013). Limited access to transportation, time constraints, processes of othering, and the anti-immigrant climate may limit opportunities to build community (Hurtado-de-Mendoza et al., 2014; Viruell-Fuentes et al., 2012; Viruell-Fuentes et al., 2013). Adding immigrant density to the classification provides an improved measure of different ethnically concentrated settings.

Measurement: Economics

Third, although Tam (2019) uses median household income as the economic delimiter, the classification does not account for the socioeconomic variation between places with the same general classification. For example, in Tam's (2019) view, ethnic enclaves are only found in high poverty areas in densely populated settings. However, these enclaves are just one type of place (Hoalst-Pullen et al., 2013; W. Li, 1998, 2019; Logan et al., 2002; Wen et al., 2009). In the adapted classification, ethnic enclaves are conceptualized as socially and economically

distinct geographic areas with high co-ethnic concentration (Massey, 2008) and can exist outside of poor urban areas. Across the U.S., suburban areas increasingly face similar issues as urban environments (e.g., poverty, unemployment) and living in a suburban area does not equivocally denote affluence (Murphy & Allard, 2015; Suro et al., 2011). By using a composite SES measure, I can apply a robust assessment of the local socioeconomic context. Delineating enclaves with place-based socioeconomic characteristics is important because the economic context also intersects with the social and political environment to shape PTB risk.

Measurement: Geography

Fourth, Tam (2019) does not further classify areas where ethnic concentration is above a standard deviation of the average proportion of Asians in LA county. This approach obscures the conceptualization of ethnoburbs, areas theorized to be less ethnically concentrated than ethnic enclaves (W. Li, 1998, 2019). In the proposed adaptation, ethnoburbs are only found in areas with medium Latino concentration. I make distinctions between suburban areas that reflect traditional suburban settings and those that denote ethnoburbs to capture the growing heterogeneity between suburbs (Mikelbank, 2004). To group all suburbs into one category would fail to reflect the demographic and economic changes that have marked these areas (Francis et al., 2009; Mikelbank, 2004; Murphy & Allard, 2015; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017; Suro et al., 2011). Geography may encompass the social, economic, physical, and political processes that shape health, opportunities, and risks (Francis et al., 2009; Murphy & Wallace, 2010; Pavlakis, 2018; Pih, Hirose, & Mao, 2012; Schnake-Mahl & Sommers, 2017), and requires further examination. This delineation will help to disentangle how different ethnically concentrated suburbs contribute to PTB.

3.3.1 The classified enclaves

The modified classification builds on scholarship on ethnic enclaves and Tam's (2019) enclave classification tree. The current classification includes the social (i.e., Latino ethnic concentration, immigrant density), economic (i.e., percent indicators of: residents on public

assistance, children living in poverty, unemployment, residents with a bachelor's degree or higher, and median household income), and geographic (i.e., suburban and urban areas) dimensions of residential contexts to understand how different enclave environments shape PTB risk and yields nine enclave types: (1) connected disadvantage (i.e., Large Latino concentration, large foreign-born population, suburban, high disadvantage); (2) connected advantage (i.e., Large Latino concentration, large foreign-born population, suburban, low disadvantage); (3) concentrated disadvantage (i.e., Large Latino concentration, large foreign-born population, urban, high disadvantage); (4) concentrated advantage (i.e., Large Latino concentration, large foreign-born population, urban, low disadvantage), (5) disconnected disadvantage (Large Latino concentration, small foreign-born population, suburban, high disadvantage); (6) disconnected advantage (i.e., Large Latino concentration, small foreign-born population, suburban, low disadvantage); (7) anchored disadvantage (i.e., medium Latino concentration, large foreign-born population, suburban, high disadvantage); (8) anchored advantage (i.e., medium Latino concentration, large foreign-born population, suburban, low disadvantage); (9) detached disadvantage (small foreign-born population, Large Latino concentration, urban, high disadvantage) across 232 U.S. counties, where Latino ethnic concentration is above the county-level standard deviation (13.75%). I only focus on areas where Latino ethnic density is above the county-level standard deviation (13.75%) to offer meaningful hypotheses and interpretations about how each setting may contribute to Latina mothers' PTB risk. This approach is useful because the proportion of Latinos across the U.S. is variable (mean= 9.25%, median=4.10%, range= 0-99%), and there is no optimal measure or cut-off point for identifying enclaves.

Figure 3.2 highlights the classification of ethnic enclaves; Table 3.1 presents the distribution of classified enclaves and Figure 3.3 maps the distribution of enclaves in the U.S.

Table 3.1. Distribution of classified counties (N=232)

Classification		Classification	
Advantage Enclaves	**n (%)**	Disadvantage Enclaves	**n (%)**
1. Anchored advantage	43 (19.0)	2. Anchored disadvantage	5 (2.0)
3. Disconnected advantage	56 (24.0)	4. Disconnected disadvantage	41 (18.0)
5. Detached advantage	0 (0.0)	6. Detached disadvantage	2 (1.0)
7. Connected advantage	20 (9.0)	8. Connected disadvantage	29 (13.0)
9. Concentrated advantage	25 (11.0)	10. Concentrated disadvantage	11 (5.0)

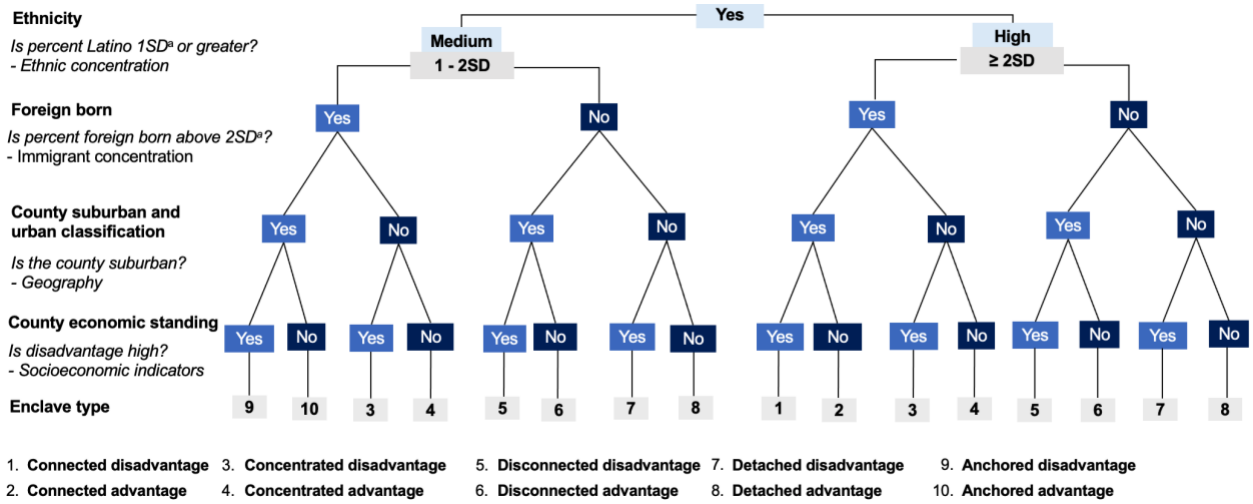


Figure 3.2. Classifying ethnic enclaves across U.S. counties
Note. The national standard deviation is 13.75% •The national standard deviation is 5.71%

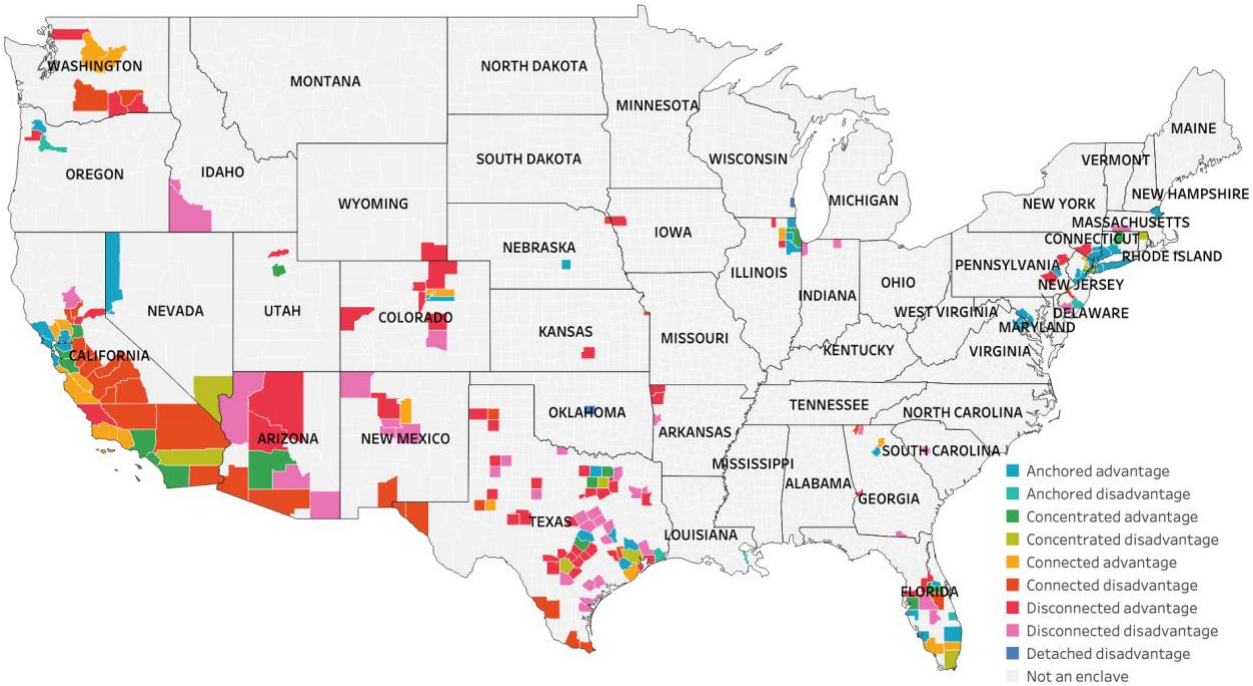


Figure 3.3. Mapping the ethnic enclave classification across the U.S., N=232
Note. The classification process did not identify enclaves in Alaska or Hawaii

3.3.2 Definitions and dynamics

In this section, I define the classified enclaves and describe the dynamics that distinguish them from other areas. The current classification does not include rural settings which allows me to focus on the nuances between urban and suburban enclaves. I excluded rural counties because of the distinct issues that residents in these settings face and because of what has been described as a "rural culture" determinant of health (Hartley, 2004). To characterize each area, I conducted a review of the literature and examined U.S. census indicators. The reported findings are averages across counties with the same grouping.

The terms concentrated, detached, connected, disconnected, and anchored refer only to the social dimension (i.e., Latino density, foreign-born concentration) of enclaves. Urban and suburban delimiters represent geography and advantage and disadvantage refer to the socioeconomic context. Table 3.2 presents each classifier and proposed mechanisms.

Concentrated enclaves have large Latino and foreign-born populations and are urban. Since urban areas are often described as populous settings, I use concentrated to define these areas. **Connected** enclaves are suburban and differ from concentrated enclaves only in terms of geography. These settings are connected because despite their suburban orientation, a large proportion of residents are Latino and foreign-born, which can facilitate within-group interaction and social support. **Disconnected** enclaves have large Latino but low foreign-born populations and are suburban and are the only classified suburban enclaves with a low concentration of immigrants. Unlike immigrants residing in other suburban areas, those in disconnected enclaves may be more likely to experience social isolation.

Detached enclaves have large Latino but low foreign-born populations and are urban. These enclaves differ from disconnected enclaves, their suburban corollary, only in geography. These urban enclaves are defined as detached because of their low concentration of immigrants and because they have been previously described as either "low immigration metro

areas" or "former gateways"[8] (Singer, 2013). Despite their urban classification, they do not draw many immigrants—rendering these areas detached from contemporary immigration flows. **Anchored** enclaves are suburban. Although Latinos are only moderately concentrated here, these settings have a large foreign-born population. These enclaves are anchored because despite not being as concentrated by Latinos as other areas, they are believed to maintain the salubrious social features of concentrated and connected environments.

I further classified each area with their socioeconomic standing and used census data to describe each enclave (see Table 3.2). The classification did not identify detached advantage enclaves, which are Latino dense but low immigrant and low disadvantage urban counties. While it is possible that such areas, in effect, do not exist,[9] it is also possible that my classification of counties where at least 13.5% of the population is Latino excludes areas that are just short of this delimiter. Since places change over time (Parker et al., 2018), however, future studies applying this classification may identify enclaves in these settings.

Concentrated advantage enclaves are large Latino concentration, large foreign-born population, low disadvantage, urban areas. These enclaves represent 11% of classified counties have one of the largest immigrant populations (25.6%) and the second largest proportion (9%) of residents who immigrated before 1990.[10] These settings represent classic urban enclaves where residents access a culturally-specific health and social resources.

Concentrated disadvantage enclaves are large Latino concentration, large foreign-born population, high disadvantage urban areas. These places represent 5% of classified

[8] Former gateways experienced high immigration between the 1900 – 1930s (Singer, 2013). Immigration to these areas has continuously dropped since then.

[9] These enclaves may not exist because of the discriminatory lending and housing practices in urban areas that have blocked minoritized groups, even those with the economic resources to do so, from owning homes.

[10] The 1990 revision of the 1965 Immigration and Nationality Act increased yearly immigration quotas and introduced the diversity visa lottery (Chishti & Yale-Loehr, 2016).

counties and have the largest immigrant population (26.5%) and one of the largest concentrations of non-citizens (13.4%). These enclaves are thought to function like traditional urban ethnic enclaves, hypothesized to protect health. However, residents may not benefit from living in these settings because of the deprived economic context, which may disrupt the flow of support (e.g., labor in-kind) and information (e.g., immigration-related) (Menjívar, 2000; Osypuk et al., 2010). Despite the bonding social capital that should connect Latino networks in these areas, economic constraints may limit the benefits associated with living in these enclaves.

Connected advantage enclaves are large Latino concentration, large foreign-born population, low disadvantage, suburban areas. These settings represent 9% of classified counties and are conceptualized as suburban ethnic enclaves that mirror urban enclaves (i.e., concentrated enclaves). The economic characteristics of these enclaves separate them from connected disadvantage suburban settings, as the average median household income ($70,998.95) is more than $20,000 dollars higher. On average, these enclaves have fewer households living on public assistance (5.6%) and children living in poverty (3.7%).

Connected disadvantage enclaves are large Latino concentration, large foreign-born population, high disadvantage areas in suburban settings and mirror urban enclaves. These places represent 13% of classified counties and have the lowest median household incomes ($49,604.31), the lowest proportion of people completing a bachelor's degree or higher (7.1%), the highest income to poverty level ratio among families with children (7.6%), the highest proportion of households living on public assistance (Supplemental Security Income, cash public assistance income, or food stamps) (10.6%), and the highest unemployment rate (3.6%). The population is 55.6% Hispanic and close to a fifth of residents speak English less than "very well" (17.0%)

Disconnected advantage enclaves are large Latino concentration, small foreign-born population, low disadvantage, suburban areas. These settings represent 24% of classified counties. On average, these enclave have one of the lowest non-citizen populations (4.3%) and

are least likely to be unemployed (2.5%). Disconnected advantage enclaves may, on average, have higher quality physical environments (e.g., parks), health services, and institutions that contribute to good health, but immigrants in these areas may face social isolation—owing to the small foreign-born population, and inter-group conflict that render these benefits mute—Latinos in suburban areas have been viewed as economic or cultural threats (Lichter, Parisi, Taquino, & Grice, 2010), which may be more pronounced in disconnected disadvantage areas.

Disconnected disadvantage enclaves are large Latino, low foreign-born suburban areas with high disadvantage. These settings represent 18% of classified counties. On average, these areas have the highest proportion of the U.S. born population (90.8%). Disconnected disadvantage enclaves also have the highest proportion of vacant homes (7.9%), which may reflect communities still reeling from the Great Recession. These enclaves also experienced the largest population growth (29.4%) since 2000 and may function like disconnected advantage enclaves, where Latinos are seen as competing for jobs and resources (Lichter et al., 2010). Inter-group conflict may be exacerbated in the context of economic constraints.

Detached disadvantage enclaves are large Latino concentration, small foreign-born population, high disadvantage, urban areas. These settings represent 1% of classified counties and on average have the lowest proportion of Latino residents (15.9%). On average, a large share of residents in these areas are U.S. born (88.6%) and few (4.7%) speak English less than "very well." These enclaves experienced the lowest population change (10.6) since 2000 and may represent settings where immigrants' descendants reside (Zhou & Portes, 1993). For some immigrants, research posits downward assimilation, whereas others emphasize structurally blocked (e.g., housing discrimination, lending practices) mobility paths (Pais et al., 2012). These areas likely reflect distinct residential dynamics and may represent "communities of constraint" (Walton, 2015), which signify deliberate residential segregation. Since residential segregation is a fundamental cause of health inequities (Phelan & Link, 2015; D. R. Williams & Collins, 2001), these settings will likely have the highest odds of PTB. Although it is difficult to draw conclusions

using only the two identified counties, further research revealed that the most populous cities in both counties are highly segregated, with one city ranking in the top five most segregated places in the U.S (Menendian, Gailes, & Gambhir, 2021).

Anchored advantage enclaves are analogous to ethnoburbs. These suburban settings represent 19% of classified counties and are not as ethnically concentrated by Latinos as other areas, have a large foreign-born population, and low disadvantage. Ethnoburbs are commonly defined as multi-ethnic suburbs, where at least one ethnic group is prominent, without being in the majority. Like traditional ethnic enclaves, ethnoburbs have ethnic businesses, services, and institutions that are used by the ethnic community and other community members. These settings have an unmistakably ethnic character and maintain features of urban ethnic enclaves (W. Li, 1998, 2019), hypothesized to protect health and support healthier births. Among all classified areas, anchored advantage enclaves have the highest median household incomes ($82,028.67), and the lowest proportion of households living on public assistance (3.8%).

Residence in ethnoburbs is often attributed to ethnic preference, rather than constrained choice which others (W. Li, 1998, 2019; Wen et al., 2009) have used to explain residence in highly concentrated, economically constrained, urban enclaves. These settings also tend to be more integrated with out-group members, facilitating bridging social capital and good health (D. Kim, Subramanian, & Kawachi, 2006; Villalonga-Olives, Adams, & Kawachi, 2016). Since residents in these settings are generally more educated, more skilled, and more affluent, which should protect health (Link & Phelan, 1995), the anchored advantage enclave will serve as the reference group in this study. However, because ethnoburbs are described as economically stratified areas (W. Li, 1998, 2019), I also delimit anchored disadvantage enclaves.

Anchored disadvantage enclaves are less concentrated suburban settings, with a high foreign-born population and high disadvantage. These settings represent 2% of classified counties. Although anchored disadvantage enclaves maintain the same description as anchored advantage enclaves, they are less affluent areas, overall. These enclaves are not as ethnically

concentrated as connected disadvantage enclaves, nor are they as economically constrained (e.g., the median household income is $ 53,296.00). The multi-ethnic nature of these enclaves likely facilitates bridging social capital, which may be less likely in suburban areas where more than half of the population is Latino. This form of capital may enable residents to access resources (e.g., health information, opportunities) outside of their constrained environment (Pih et al., 2012; Villalonga-Olives et al., 2016).

3.3.3 Hypothesized mechanisms operating in enclaves

The social, economic, and geography dimensions of the ethnic enclave classification are hypothesized to contribute individually and jointly to PTB risk (see Table 3.2).

The social environment

Ethnic density is theorized to decrease residents' exposure to interpersonal racism and increase social support and cohesion (Bécares et al., 2012), even at moderate levels of ethnic concentration. Latino enclaves classified as moderately ethnically dense may be more integrated with out-group members (W. Li, 1998), which can facilitate bridging social capital (ensuring residents access to information and opportunities outside of their networks) and its health benefits (Murayama, Fujiwara, & Kawachi, 2012).

Residents in enclaves with large immigrant populations may have access to culturally-specific resources, including, institutionalized (e.g., health and social services, religious places of worship, civic organizations) and non-institutionalized (e.g., social groups) supports (McClure et al., 2015). These features contribute to positive health outcomes and may lower PTB risk (Osypuk et al., 2010). Residents in low immigrant settings may face social isolation because of the small immigrant population (McClure et al., 2015). This is true for immigrants whose social ties are weakened as a result of migration and their residence among U.S. natives (McClure et al., 2015; Viruell-Fuentes et al., 2013). Loneliness activates a stress response, which can lead to an elevated risk of illness and mortality (Hawkley & Cacioppo, 2010).

Economics

Socio-economic advantage strengthens the benefits of enclave residence, contributing to positive health outcomes among immigrant and U.S.-born residents. More affluent settings may also have access to quality health-enhancing resources and physical environments (e.g., parks), which also influence health and PTB risk. Socio-economic disadvantage is harmful to health and may reduce the benefits that residing in an ethnic enclave provides. In addition, co-ethnic residents may not have the time or resources to be supportive (e.g., labor in-kind; immigration-related information) (Menjívar, 2000; Osypuk et al., 2009). Material disadvantages in these settings may include higher rates of childhood poverty, unemployment, lower rates of educational attainment and inadequate housing, which influences health and PTB risk.

Geography

Overall, suburban residents may have better health outcomes (Eberhardt & Pamuk, 2004). However, some suburban areas are still adjusting to changing demographics (Murphy & Allard, 2015; Suro et al., 2011), which impacts service availability and provision (Francis et al., 2009; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017). Living in areas with fewer immigrant-specific resources may also contribute to stress (Ayón, 2015). These experiences may be worse for residents in suburban areas characterized by disadvantage. As a result, higher PTB risk may reflect general access (e.g., transportation barriers) and health care coverage gaps (Francis et al., 2009; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017). Urban areas have a long history of settling immigrants and are more likely to have culturally appropriate services and resources (e.g., English language classes) (Suro et al., 2011). Although health and social service programs are more likely to cluster in urban areas (Francis et al., 2009; Pavlakis, 2018; Suro et al., 2011), the socio-economic standing of the county may affect the quality of these services.

Table 3.2. Enclave classifying dimensions and hypothesized mechanisms

Classifier	Mechanism
The social environment - Ethnic density	
High/large[a]	- Decreases residents' exposure to interpersonal racism and increase social support and cohesion (Bécares et al., 2012), which protects health and lowers PTB risk (Osypuk et al., 2010)
Medium[a]	- There is no threshold for when the benefits of ethnic density ends. Even at moderate levels, residents are hypothesized to benefit from co-ethnic residence. - These multi-ethnic settings tend to be more integrated with out-group members (W. Li, 1998), which facilitates bridging social capital (ensuring residents access to information and opportunities outside of their networks) and its health benefits (Murayama et al., 2012).
The social environment - Foreign-born	
High/large[a]	- Residents in enclaves with large immigrant populations may have access to culturally-specific resources (e.g., health and social services and programs, religious places of worship, civic organizations, social groups) supports (McClure et al., 2015). These enclave features contribute to positive health outcomes and may lower PTB risk (Osypuk et al., 2010).
Low/small[a]	- Residents in low immigrant settings may face social isolation because of the small immigrant population (McClure et al., 2015). This is true for those whose social ties are weakened as a result of migration and their residence among U.S. natives (McClure et al., 2015; Viruell-Fuentes et al., 2013). Loneliness activates a stress response, which can lead to an elevated risk of illness, mortality (Hawkley & Cacioppo, 2010), and PTB (Institute of Medicine, 2007).
Socioeconomics	
Advantage	- Socio-economic advantage strengthens the benefits of enclave residence. More affluent settings may also have access to quality health-enhancing resources and physical environments (e.g., parks), which also shape health and PTB risk.
Dis-advantage	- Socio-economic disadvantage may reduce the benefits that residing in an ethnic enclave provides. Co-ethnic residents may not have the time or resources to be supportive (e.g., labor in-kind; immigration-related information) (Menjívar, 2000; Osypuk et al., 2009). Material disadvantages in these settings may include higher rates of childhood poverty, unemployment, lower rates of educational attainment and inadequate housing, which influence health and PTB risk.
Geography	
Suburban	- Overall, suburban residents may have better health outcomes (Eberhardt & Pamuk, 2004). However, some areas are still adjusting to changing demographics (Murphy & Allard, 2015; Suro et al., 2011), which impacts service availability and provision (Francis et al., 2009; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017). Living in areas with fewer immigrant-specific resources may contribute to stress (Ayón, 2015), which may be worse for those in suburban areas characterized by disadvantage. As a result, higher PTB risk may reflect general access (e.g., transportation barriers) and health care coverage gaps (Francis et al., 2009; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017).
Urban	- Health and social programs are more likely to cluster in urban areas (Francis et al., 2009; Pavlakis, 2018). These areas also tend to have more culturally appropriate services and resources for immigrants (e.g., English language classes) (Francis et al., 2009; Pavlakis, 2018; Suro et al., 2011). However, counties' socio-economic standing may affect the quality of these services.

Note. [a]High, indicates a large Latino population; medium indicates a moderate Latino population; low, indicates a small Latino population.

3.3.4 Contributions of the revised classification

The classification improves our measurement of ethnic enclaves, ensuring that we associate health differences with the social, economic, and structural determinants of health that are unequally distributed across contexts rather than the individuals that live in particular areas. In addition, ethnic enclaves have remained largely theoretical and have rarely, if ever, been used in public health decision-making. Few, if any, conceivable interventions can arise from just knowing that enclaves are ethnic or immigrant-dense places. By differentiating between enclave types, we can better evaluate the influence of residential contexts on health. The general view of enclaves as rich in social and cultural resources that support health may only be true for some areas. As a result of residential segregation, for example, some enclaves may not have the infrastructure (e.g., hospitals, parks, bus lines) to support residents' health. Other enclaves may represent suburban areas with growing immigrant populations. These suburbs may have limited culturally or linguistically appropriate services to meet the needs of their growing immigrant population. Recognizing the nuances between places and how these differences impact health may help to shape health programs, interventions, and policies for different areas.

Second, incorporating area-level attributes to explain health differences may allow public health program planners to better identify areas that are most in need of support. Policymakers looking to make determinations about social safety-net programs may also draw upon such delineations of places. Residents in low SES enclaves may need distinct health initiatives than those in high SES enclaves. With crude measures of ethnic or immigrant concentration alone, differences across enclaves are difficult to capture. These measures may yield incomplete assessments of PTB risk and suggest healthful environments based on ethnic or immigrant concentration alone, when focused support may actually be necessary. Different residential contexts may also lead to different levels of exposures to the stressors that influence PTB. Enclaves in suburban areas may differ from enclaves in urban locales and may have disparate

sociopolitical climates that increase stress and contribute to PTB. Such differences are unlikely to be discovered with crude concentration measures alone.

Third, this classification underscores the importance of accounting for the demographic (e.g., the growth of immigrants in suburbs (Suro et al., 2011)), and structural (e.g., residential mobility blocks (Pais et al., 2012)) processes that have produced different residential contexts. This framing is necessary because research on ethnic enclaves and health has been shaped by the dominant view of immigrants clustering into highly concentrated poor urban areas. However, the combination of demographic (e.g., the changing race/ethnic profile of U.S. suburbs), economic (e.g., global and local economic restructuring), and sociopolitical (e.g., increased local immigration enforcement) shifts within the last few decades requires a revisiting of these assumptions to understand how residential contexts influence PTB risk.

3.3.5 Considerations of rural geography

This study excludes rural counties and focuses on urban and suburban areas (see section 2.2.2 of the dissertation). There are different kinds of rural communities and demographic, economic, cultural, and environmental differences are observed when comparing rural areas (Hart, Larson, & Lishner, 2005; The American Communities Project, 2021). Social processes, including residential segregation, may intersect with economic issues, historic and contemporary demographic trends, and operate in different ways to influence health in rural versus urban and suburban communities. Any step-wise classification of enclaves should, therefore, focus centrally on rural areas to avoid undue comparisons between dissimilar places.

3.3.6 Summary

While some studies find that living in ethnic or immigrant enclaves are protective for health and birth outcomes, other research fail to support these conclusions. These studies find evidence that the association depends on nativity and the SES characteristics of the enclave. However, shifting conceptual, analytical, and geographical definitions of the ethnic enclave make comparisons across studies challenging and have likely influenced study results, the

mechanisms hypothesized to influence health, and conclusions about different areas. In addition, several studies used only ethnic or immigrant concentration measures to evaluate residential contexts which limits our understanding of the enclave and health relationship. Building upon extant studies, I advance an ethnic enclave classification that accounts for the social, economic, and geographic differences between enclaves. The classification will allow researchers to better understand how distinct residential contexts impact PTB risk.

3.4 Immigration enforcement

This section centers on immigration enforcement policies and health, especially birth outcomes. I summarize health-related studies in this area and discuss potential pathways through which immigration enforcement impacts birth outcomes. Considering the distinct influence of immigration enforcement policies across residential contexts will enhance our understanding of PTB risk among Latina mothers.

3.4.1 Immigration enforcement, health, and birth outcomes

Researchers are increasingly assessing the impact of immigration enforcement on health outcomes. Quantitative studies in this area have focused on raids (Novak et al., 2017), the 287(g) and SCP initiatives (Wang & Kaushal, 2018), apprehensions (Ro, Bruckner, & Duquette-Rury, 2020), and the sociopolitical climate (Stanhope, Hogue, Suglia, Leon, & Kramer, 2019) more broadly. Two studies reported poorer subjective mental and physical health (Lopez et al., 2017), and delayed reproductive decision making (Fleming et al., 2019), following a raid in Washtenaw, County, Michigan. Increased mental distress and poorer overall health among Latino immigrants living in counties with 287(g) agreements compared to those living in areas without this policy have also been documented (Wang & Kaushal, 2018).

Some studies have focused on the impact of immigration enforcement policies and practices on birth outcomes. In one study, Torche and Sirois (2018) found that Latina immigrant mothers had babies with LBW if they were pregnant (i.e., exposed) when Arizona's Senate Bill 1070 was being signed into law. Novak et al. (2017) assessed the impact of one of the largest

immigration raids in U.S. history and reported that on Latina mothers had an increased risk of having a LBW baby after the raid. Tome, Rangel, Gibson-Davis, and Bellows (2021) assessed the impact of 287(g) on birth outcomes in Mecklenburg County, NC and concluded that the program likely led to more LBW births between 2004 and 2006.

However, these findings generally depend on the operationalization of immigration enforcement, the setting, and the birth outcome being investigated. For example, in a national study, Stanhope (2019) found that Hispanic mothers who lived in a county with a 287(g) agreement were not at significantly higher risk of very PTB between 2005–2016. Using seven years (2008–2015) of immigrant apprehensions in CA, Ro et al. (2020) reported no significant associations between apprehensions and LBW, but noted that Latina mothers living in areas with the highest rates of apprehensions experienced the greatest risk for PTB. Other studies have attributed increased risk for poor birth outcomes to the sociopolitical climate, noting that sociopolitical stressors (e.g., elections) can lead to poor birth outcomes (Gemmill et al., 2019; Krieger et al., 2018). These effects may spillover to U.S. born Latina mothers who are unintended targets and elevate their PTB risk. In the next section, I detail the mechanisms that link immigration enforcement to PTB.

3.4.2 Mechanisms linking immigration enforcement to PTB

There are several ways through which immigration enforcement policies shape PTB risk. Immigration enforcement policies may operate through structural racism by restricting rights and protections and by neglecting the needs of marginalized groups (Gee & Ford, 2011; Philbin, Flake, Hatzenbuehler, & Hirsch, 2018). Specifically, these policies increase deportation fears and discriminatory experiences, which can result in poor birth outcomes. Immigration enforcement laws can also lead to material hardship (Philbin et al., 2018), dire circumstances that contribute to maternal stress—a risk factor for PTB.

Immigration enforcement policies may operate through a stress pathway by triggering the physiological responses that contribute to inflammation, disrupt intrauterine fetal growth, and

lead to PTB (Tome et al., 2021; Torche & Sirois, 2018). To cope with the psychological impacts of living in areas with heightened immigration enforcement, some immigrants may adopt risky health behaviors which exacerbates PTB risk (Tome et al., 2021; Torche & Sirois, 2018; Wang & Kaushal, 2018). Some Latino immigrants, fearing apprehension, may reduce time spent driving or outside the home which may result in isolation (Benavides et al., 2021; A. Gómez Cervantes & Menjivar, 2020; Simmons, Menjívar, & Valdez, 2020; Wang & Kaushal, 2018). Isolation resulting from immigration enforcement fear may be harmful for Latina women who often connect their families to social and health institutions (Benavides et al., 2021; A. Gómez Cervantes & Menjivar, 2020; Simmons et al., 2020). Immigration enforcement policies can also lead to mistrust of health and social service providers and limit access to health resources (Rhodes et al., 2015; Tome et al., 2021; Torche & Sirois, 2018). Families who loose primary bread winners because of deportation experience material hardship (e.g., financial, housing, food insecurity) (Philbin et al., 2018; Potochnick, May, & Flores, 2019; Wang & Kaushal, 2018), social risk factors for PTB.

U.S. born Latina mothers, may also experience the spillover effects of immigration enforcement policies (Toomey et al., 2014). Though U.S. born Latina mothers are not the intended targets of these efforts, being Latino has become synonymous with being undocumented and has associated health implications (Asad & Clair, 2018). Since Latino families are increasingly of mixed immigration statuses (Passel & D'Vera Cohn, 2009), the consequences of these policies are far reaching. Immigration enforcement policies are not equally distributed and vary in number and impact across contexts—yielding different experiences for U.S. and foreign-born residents.

3.4.3 Immigration enforcement within classified counties

The number of immigration enforcement policies varies in each context. On average, suburban areas are significantly (3.8) more likely than urban areas (2.4) to have more local immigration enforcement policies in place. Compared to disconnected enclaves (large Latino,

small immigrant population, suburban) that have the most local immigration enforcement policies (4.5), concentrated enclaves (large Latino and large immigrant populations, urban) have the fewest (2.1) of these policies.

The distribution of these policies is in line with my conceptualization. Early immigrants were more likely to settle in urban areas (Wen et al., 2009). Concentrated enclaves have the largest proportion of foreign-born residents (25.9%) and the largest proportion of immigrants who migrated before 1990 (9.3%) and after 2010 (5.4%). Unlike suburban areas that are experiencing population changes and still catching up to these shifts (Francis et al., 2009; Murphy & Allard, 2015; Pavlakis, 2018; Suro et al., 2011), concentrated enclaves may already have established services for immigrants and be better equipped to support by ensuring access to culturally relevant programs and institutions. Concentrated enclaves also have less immigration enforcement policies (2.4) than other areas, which might point to established immigrant organizations that are able to counter such efforts or the prevalence of these enclaves in states that support inclusive immigrant policies (e.g., healthcare access, state identification cards).

Suburbs experiencing a growth in their foreign-born population are more likely to have three or more local immigration enforcement policies in place. Disconnected enclaves, in particular, experienced the greatest population change (26.6%) since 2000. Growth in the immigrant population, has been connected to adopting restrictive immigration enforcement policies (Reich, 2019; Walker, 2018; Walker & Leitner, 2011), which may explain the number (4.5) of immigration enforcement policies in these enclaves.

Immigration enforcement policies may create contexts that increase PTB risk among all Latina mothers. However, these effects may depend on the enclave. On the one hand, in settings (i.e., detached and disconnected enclaves) where there are fewer foreign-born individuals, immigrants might be highly visible (Garcia-Hallett, Like, Torres, & Irazabal, 2020) and the impact of these policies may operate at the intersection of racialized policing (Nichols et

al., 2018). Immigration enforcement increases distrust, which can limit the use of public services in settings where they are available. For example, limited use of prenatal care, as a result of increased immigration enforcement, might contribute to PTB (Torche & Sirois, 2018). On the other hand, while some enclaves may be targets for immigration enforcement (i.e., concentrated and connected enclaves), given their large Latino and immigrant population, enforcement-related stress may be lessened if residents are not distinguishable from others in the community (e.g., hiding among other minoritized groups) (Asad & Rosen, 2019; Sue et al., 2019).

Immigrant networks may also possess information and strategies (e.g., advocacy) to contend with heighted immigration enforcement contexts (Ayón, 2015; Ayón & Naddy, 2013; Kline, 2019). While social support from community members may buffer these experiences, those living in enclaves marked by disadvantage may be less able to provide support to friends and family because of their limited resources (e.g., time) (Ayón & Naddy, 2013; Benavides et al., 2021). In addition, given the conflation of immigration status with race (Asad & Clair, 2018), these effects may be observed among all Latinas.

Residential contexts with heighted immigration enforcement may contribute to chronic activation of stress-response systems which is associated with PTB. It is also possible that some restrictive counties are in states that extend rights and benefits to immigrants. Such contexts may buffer the impact of living in restrictive immigration enforcement contexts. Despite living in states that provide health care access, for example, experiences with the local immigration enforcement context may lead to fear and delayed use of health care services, which can contribute to poor health-related outcomes (Rhodes et al., 2015; Tome et al., 2021; Torche & Sirois, 2018). Table 3.3 summarizes the social, geographic, economic, and immigration enforcement dynamics that contributes to health differences across enclaves.

3.4.4 Summary

The papers in this review focus on a mix of local and state-level policies and practices. In this study, however, I use a county-level measure of immigration enforcement policies to

assess policies and practices that may be more proximal to individuals, shaping their daily lives. Immigration enforcement policies and practices may affect PTB through physiological, behavioral, institutional, and economic influences. In fueling stressful conditions, immigration enforcement policies may trigger the biological and physiological mechanisms that lead to stress and PTB. These policies are unevenly distributed across the U.S. and have unique impacts. Though inclusive state-level immigrant policies are associated with lower odds of PTB among immigrants (Sudhinaraset et al., 2021), there is little research on the impact of living in counties with restrictive immigration enforcement policies in inclusive states. Moreover, local or county-level inclusivity measures are rare, which limits research in this area. In this study, I apply state-level inclusive policy controls to account for variations across states.

Table 3.3. The dynamics within classified areas

Anchored advantage (Suburban)
1. Medium Latino, but large immigrant population. Anchored enclaves maintain typical enclave social features. Residents may have access to culturally-specific resources and social support, which may lower PTB risk. These enclaves tend to be more integrated with out-group members, facilitating bridging social capital (ensuring residents access to information outside of their networks) and health benefits
2. Socio-economic advantage strengthens the benefits of enclave residence. These multi-ethnic areas are the most affluent of all enclaves
3. Suburban residents may have better health outcomes, which may be especially true in these contexts
4. Suburban areas have more immigration enforcement policies, which can increase distrust in health and public services—resulting in lower use of prenatal care and increasing PTB risk. However, immigrant networks (owing to the large immigrant population in these areas) may possess information and strategies (e.g., advocacy) to contend with heighted immigration enforcement contexts.
Connected advantage (Suburban)
1. Large Latino and immigrant population. Residents may have access to culturally-specific resources and social support, which may lower PTB risk
2. Socio-economic advantage strengthens the benefits of enclave residence
3. Suburban residents may have better health outcomes, which may be especially true in these contexts
4. Suburban areas have more immigration enforcement policies, which can increase distrust in health and public services—resulting in lower use of prenatal care and increasing PTB risk. However, immigrant networks (owing to the large immigrant population in these areas) may possess information and strategies (e.g., advocacy) to contend with heighted immigration enforcement contexts.
Concentrated advantage (Urban)
1. Large Latino and immigrant population. Residents may have access to culturally-specific resources and social support, which may lower PTB risk. Concentrated areas are likely more established, with the second largest proportion of immigrant residents (25.9%), and

the largest proportion of immigrants who migrated before 1990 (9.3%) and after 2010 (5.4%).
2. Socio-economic advantage strengthens the benefits of enclave residence
3. Health and social services, including culturally relevant programs, are more likely to cluster in urban areas, facilitating use
4. Concentrated enclaves have the fewest (2.4) local immigration enforcement policies.

Disconnected advantage (Suburban)

1. Large Latino and small immigrant population. Latino origin may confer some health benefits. However, residents may face social isolation due to the small immigrant population.
2. Socio-economic advantage strengthens the benefits of enclave residence
3. Suburban residents may have better health outcomes. Latino residents may be viewed as economic or cultural threats in these settings
4. Disconnected enclaves experienced the greatest population change (26.6%) since 2000 and have the most local immigration policies (4.5). Changing population dynamics have been connected to adopting restrictive policies, which would increase PTB risk among all Latina mothers. The small immigrant population also suggest fewer immigrant networks to provide support in these contexts

Anchored disadvantage (Suburban)

1. Medium Latino, but large immigrant population. Anchored enclaves maintain typical enclave social features. Access to culturally-specific resources and social support may lower PTB risk. These areas are more integrated with out-group members, which facilitates bridging social capital and its health benefits
2. Socio-economic disadvantage may reduce the benefits of enclave residence, as co-ethnic residents may not have the time or resources to be supportive (e.g., labor in-kind; immigration-related information). However, the multi-ethnic setting may facilitate bridging social capital, which may enable residents' access to resources (e.g., health information, opportunities) outside of their networks.
3. Though suburban residents may have better health outcomes, social and health resources may be fewer for residents in suburban areas characterized by disadvantage. Some suburban areas are still adjusting to their changing demographics, which impacts service provision. Higher PTB risk may reflect general access (e.g., transportation barriers) and health care coverage gaps.
4. Suburban areas have more immigration enforcement policies, which can increase distrust in health and public services—resulting in lower use of prenatal care and increasing PTB risk. However, immigrant networks (owing to their large immigrant population) may possess information and strategies (e.g., advocacy) to contend with heighted immigration enforcement contexts. While social support from community members may buffer these experiences, those living in communities experiencing economic constraints may be less able to provide support because of their limited resources (e.g., time).

Connected disadvantage (Suburban)

1. Large Latino and immigrant population. Residents may have access to culturally-specific resources and social support, which may lower PTB risk
2. Socio-economic disadvantage may reduce the benefits of enclave residence.
3. Suburban residents may have better health outcomes. Social and health resources may be fewer for residents in suburban areas characterized by disadvantage. Some suburban areas are still adjusting to their changing demographics, which impacts service provision. Higher PTB risk may reflect general access (e.g., transportation barriers) and health care coverage gaps
4. Suburban areas have more immigration enforcement policies, which can increase distrust in health and public services—resulting in lower use of prenatal care and increasing PTB

risk. However, immigrant networks (owing to their large immigrant population) may possess information and strategies (e.g., advocacy) to contend with heighted immigration enforcement contexts. While social support from community members may buffer these experiences, those living in communities experiencing economic constraints may be less able to provide support because of their limited resources (e.g., time).

Concentrated disadvantage (Urban)

1. Large Latino and immigrant population. Residents may have access to culturally-specific resources and social support, which may lower PTB risk
2. Socio-economic disadvantage may reduce the benefits of enclave residence
3. Health and social service programs are more likely to cluster in urban areas, which may facilitate use. However, socio-economic disadvantage may influence quality
4. Immigrant networks may possess information and strategies (e.g., advocacy) to contend with heighted immigration enforcement contexts. While social support from community members may buffer these experiences, those living in communities experiencing economic constraints may be less able to provide support to friends and family because of their limited resources (e.g., time).

Disconnected disadvantage (Suburban)

1. Large Latino and small immigrant population. Latino origin may confer some health benefits. However, residents may face social isolation due to the small immigrant population.
2. Socio-economic disadvantage may reduce the benefits of enclave residence. The large proportion of vacant homes (7.9%) in this setting may reflect areas still reeling from the Great Recession.
3. Latinos in suburban areas have been viewed as economic or cultural threats, which may be more pronounced in these areas. Suburban residents may have better health outcomes. Social and health resources may be fewer for residents in suburban areas characterized by disadvantage. Some suburban areas are still adjusting to their changing demographics, which impacts service provision. Higher PTB risk may reflect general access (e.g., transportation barriers) and health care coverage gaps.
4. Disconnected enclaves experienced the greatest population change (26.6%) since 2000 and have the most local immigration policies (4.5). Changing population dynamics have been connected to adopting restrictive policies, which would increase PTB risk among all Latina mothers. The small immigrant population also suggest fewer immigrant networks and that the impact of these policies may operate at the intersection of racialized policing.

Detached disadvantage (Urban)

1. Large Latino and small immigrant population. Latino origin may confer some health benefits. However, residents may face social isolation because of the small immigrant population.
2. Socio-economic disadvantage may reduce the benefits of enclave residence
3. Considered a “low immigration metro area” or “former [immigrant] gateway.” Likely structurally deliberate residential segregation dynamics. Residential segregation is associated with higher PTB risk.
4. Although health and social service programs are more likely to cluster in urban areas, the socio-economic standing of the county may affect the quality of these services. In settings where there are fewer Latinos or immigrants, the impact of these policies may operate at the intersection of racialized policing.

Note. (1) Social; (2) Socio-economics; (3) Geography; (4) Immigration enforcement

CHAPTER 4. THEORETICAL FRAMEWORK

This section details the theoretical perspectives that guide this study. The framework builds upon research on ethnic enclaves and health and the associated explanatory models that underscore the role of structural racism (Alhusen et al., 2016; Diez Roux & Mair, 2010; D. R. Williams & Mohammed, 2013). The framework weaves two theories of socio-spatial mobility: the place stratification and ethnic preference models to underlie the different processes that generate different types of enclaves. The framework then underscores how distinct enclave environments differentially contribute to PTB risk. Elevating these perspectives allows us to center keenly on the inequitable distribution of resources, opportunities, and risks across areas and the disparate influence of ethnic enclaves. The analytic model, research aims, and study hypotheses are also detailed in this section.

4.1 Theoretical perspectives

4.1.1 Structural racism

Structural racism is a system of policies, practices, and ideologies that work to configure access to power, privilege, resources, and life chances along racial and ethnic lines (Gee & Ford, 2011; Jones, 2000; Lawrence & Keleher, 2004; Powell, 2007; Viruell-Fuentes et al., 2012; D. R. Williams & Mohammed, 2013). As a deeply-rooted system, it operates at multiple levels (e.g., individual, interpersonal, institutional) (Jones, 2000; D. R. Williams & Mohammed, 2013), which ensures that even if one branch is broken, it is upheld by many other connections (Lawrence & Keleher, 2004; Powell, 2007). As a result, structural racism is associated with persistent social, economic, and health inequities that operate through multiple pathways to shape the everyday experiences of racially and ethnically minoritized groups (Gee & Ford, 2011; Viruell-Fuentes et al., 2012; D. R. Williams & Mohammed, 2013).

Structural racism is maintained and reinforced through the logic of racial categories (Bonilla-Silva, 1997). The primacy of race in the U.S. ensures that people, including newly arriving immigrants, are organized into the racial hierarchy of the U.S. society where white

people occupy a superior position to all other groups (Bonilla-Silva, 1997; Chaudhary, 2015; Ford & Harawa, 2010). Within this hierarchy, race functions to produce and maintain inequalities in health, economic opportunities, and access to specific residential areas (Bonilla-Silva, 1997; Chaudhary, 2015; Viruell-Fuentes, 2007). Whereas groups that are higher on this racial hierarchy experience privileges, groups that occupy lower positions have limited access to resources, fewer social and economic opportunities, and greater disadvantages, overall (Bonilla-Silva, 1997; Chaudhary, 2015; Ford & Harawa, 2010). As a result, those who are racialized as white are more likely to gain access to advantageous residential options, whereas those who are marked as non-white are less likely to have similar choices.

4.1.2 Residential segregation

Racial residential segregation is one manifestation of racism. Extant research has linked this form of separation to diverse health outcomes (Alhusen et al., 2016; Bailey et al., 2017; Gee & Ford, 2011; Krieger et al., 2020; D. R. Williams & Mohammed, 2013). Racism shapes the lives of immigrants and their families and may operate to structure residential options (Gee & Ford, 2011; D. R. Williams & Mohammed, 2013; Wright et al., 2005). At the same time, immigrants may prefer to self-segregate, choosing to live in familiar social and cultural contexts (Wright et al., 2005). Jointly highlighting these processes through the place stratification and ethnic preference models allows for a nuanced assessment of how distinct residential contexts shape Latina mothers' PTB risk by nativity and Latino origin.

4.1.3 Place stratification

The place stratification model posits that structural and institutional constraints (e.g., discrimination in the housing market, zoning laws, discriminatory lending practices) create mobility blocks that prevent the spatial assimilation (i.e., moving into a predominately white U.S. suburb) of racial and ethnic minoritized groups. The model suggests that people in power manipulate space to distance themselves from those that are less powerful (Argeros, 2019; Pais et al., 2012). This maneuvering is maintained across time, with those in power actively

organizing (e.g., through local politics) to maintain their advantageous positions (Argeros, 2019; Pais et al., 2012). The place stratification model illuminates the barriers to mobility that members of minoritized populations face (Pais et al., 2012) and is useful for describing how structural constraints can lead to poorer health outcomes.

However, this model makes three propositions about immigrants' locational attainment that warrant reconsideration. The first claim is that ethnic enclaves are temporary residential locations and that immigrants desire to relocate into areas (i.e., suburbs) that are less concentrated with poverty and other immigrants (Alba et al., 2014). However, life in ethnic enclaves may no longer be transient for some Latino immigrants (Alba et al., 2014). Given that a large share of the Latino immigrant population are in a precarious legal status, some immigrants consider the local immigration enforcement landscape in deciding where to live (Asad & Rosen, 2019; Sue et al., 2019). For some Latino immigrants, this renders ethnic enclaves as unsafe residential choices since local immigration enforcement activity may be heightened in these areas (Asad & Rosen, 2019; Garcia-Hallett et al., 2020; A. Gómez Cervantes & Menjivar, 2020; Sue et al., 2019).

The second notion is that there is a place and resource-based hierarchy, with white majority areas representing the only desirable places to live. In this view, the resources that immigrants attain—the longer they remain in the U.S.—should allow them to move out of areas concentrated with immigrants and/or racial and ethnic minoritized groups (Wright et al., 2005). Despite the model's focus on the structural blocks that constrain residential mobility, the elevation of an archetypal majority white neighborhood that immigrants and their family aspire to relocate into is limiting. The ethnic preference model reassesses these assumptions.

4.1.4 Ethnic preference

The ethnic preference model contends that immigrants choose to self-segregate based on a preference for where to live. These immigrants may not consider residence in a mostly ethnically white suburb as their benchmark of success and may see the advantage of living

among people like them (Wright et al., 2005). Even among those who can afford to live in other areas, moving out of the enclave is not often the goal (Argeros, 2019; Wright et al., 2005).

The ethnic preference model matters for several reasons. First, as a result of demographic, immigration, and economic trends, U.S. suburbs have become more racially and economically diverse and may no longer fit classic images of predominately ethnically white, middle-income families (Alba, Logan, Stults, Marzan, & Zhang, 1999; Suro et al., 2011; Walker, 2018; Wen et al., 2009). Second, living in an ethnic enclave, does not automatically signify advantage or disadvantage (W. Li, 1998, 2019; Wen et al., 2009). Still, ethnic preference may operate within already constrained residential options to structure residential choices for immigrants and their families.

4.2 The conceptual model

Figure 1 illustrates the relationship between living in an ethnic enclave and PTB. The framework contends that structural racism, as an entrenched system, creates unequal distributions of risks (e.g., heightened immigration enforcement climates, environmental exposures, poor-quality housing), resources (e.g., access to health-related services, inclusive local immigrant policies), and opportunities (e.g., generational wealth, employment) (Gee & Ford, 2011; D. R. Williams & Mohammed, 2013). The shaded bidirectional arrows suggests that structural racism may operate in contemporary forms that are not easily recognizable (Ford & Airhihenbuwa, 2010). Ethnic enclaves may result from deliberate residential segregation, but can also be the outcome of preferences about where to live (Argeros, 2019). The bidirectional arrow from ethnic preference to place stratification suggests that as people populate an area, others may favor or oppose living in these settings (Diez Roux & Mair, 2010).

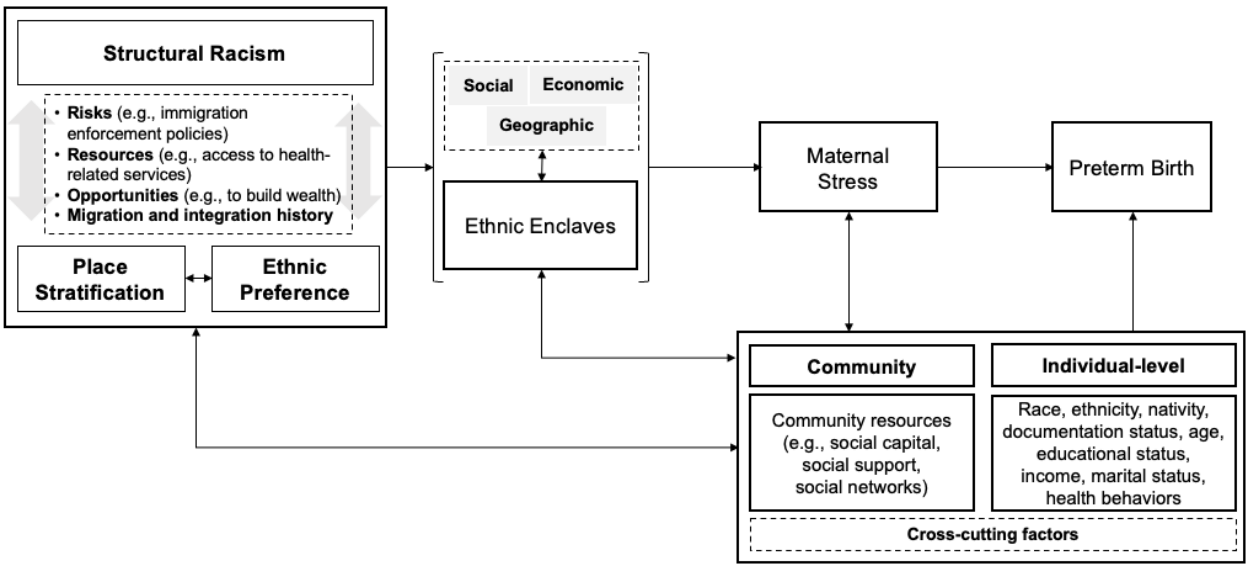


Figure 4.1. Conceptual framework linking living in ethnic enclaves to preterm births

4.2.1 Risks, resources, and opportunities

Where one lives may contribute to their exposure to specific risks. For example, there are communities where fear about ICE raids relegate families to living constrained lives (Artiga & Ubri, 2017; Simmons et al., 2020). This experience is not shared across all residential contexts. Heightened immigration enforcement creates conditions that limit opportunities for social interactions and relationship building (A. Gómez Cervantes & Menjivar, 2020; Simmons et al., 2020), health-promoting features that enclaves are assumed to have. In addition, racism plays a significant role in immigration enforcement policy-making and practices, with disparate impacts by race, ethnicity, and nativity (K. R. Johnson, 2012).

Compared to other Latino groups, Mexican and Central American men and women may be more vulnerable to apprehension, detention, and deportation, regardless of where they live (Golash-Boza & Hondagneu-Sotelo, 2013; Andrea Gómez Cervantes, 2019). Although people from Puerto Rico and Cuba are not the deliberate targets of immigration enforcement policies, enforcement actions intersect with policing in communities populated by Black and Latino individuals (Armenta & Alvarez, 2017; Nichols et al., 2018) and may contribute to stress and PTB. Given their mode of U.S. incorporation, however, people from Cuba may not perceive or

endure the same impacts of immigration enforcement as other Latino groups (Blizzard & Batalova, 2020). The persistent attention to the U.S.-Mexico Border evokes Mexican immigrants as the scapegoats of undocumented immigration, which may lead to their experiencing immigration enforcement actions and consequences more acutely. Phenotype might also be an important social marker, as immigrants with darker skin are more likely to be apprehended and interrogated by ICE agents (Andrea Gómez Cervantes, 2019). Individuals of lower socioeconomic status within each Latino subgroup are also more likely to experience the greatest impacts of immigration enforcement (Golash-Boza & Hondagneu-Sotelo, 2013).

These effects may vary by residential location and depend largely on whether the jurisdiction maintains inclusive immigrant policies. Among some Latino groups, inclusive immigrant policies may facilitate access to resources, rights, and protections. Inclusive immigrant policies that ensure healthcare access for all community members, provide state identification cards, or access to higher education for undocumented individuals avail beneficial resources to those most in need. Undocumented Latina women in California who have access to health insurance may have disparate experiences than those in states that do not extend health benefits to immigrants who are pregnant. Owing to their mode of U.S. incorporation, Cuban and Puerto Rican individuals in the U.S. are more likely to have higher-levels of access to health insurance and health care.

Racism impacts opportunities for racial and ethnic minoritized groups to build, retain, and transfer generational wealth; disparities in access to opportunities also exist by nativity status and have implications for health across the life-course (Gee & Ford, 2011; Killewald, Pfeffer, & Schachner, 2017; D. R. Williams & Mohammed, 2013). Socioeconomic advantages can influence access to quality residential areas (Flippen, 2020) and impact where people live (Wei, 1998). Although risks, resources, and opportunities operate singularly, they also intersect—operating through the broader residential context—to influence PTB.

Racism also determines access to health and social services, employment, and educational opportunities (D. R. Williams & Mohammed, 2013). While some communities may have more toxins, fewer employment opportunities, and limited access to quality, safe, and functional recreational facilities, other areas may not (D. R. Williams & Mohammed, 2013). The unequal distribution of advantages and disadvantages by race, Latino origin, and nativity, generates different experiences, depending on where one lives.

4.2.2 Cross-cutting contexts

4.2.2.1 Race, nativity, and Latino origin

At the structural level, race, Latino origin, nativity, and migration and integration histories shape ethnic enclave formation and the resources and opportunities available within enclaves. Some enclaves—even those with the same levels of racial concentration—are more likely to reflect social and economic exclusion than are other areas (Iceland, 2014; Massey, 2001). Residential segregation may also operate through distinct mechanisms for different groups.

Puerto Rican, Cuban, and Mexican people have had different modes of U.S. incorporation, which shapes their residential patterns and access to particular areas. Compared to other Latino immigrant groups, Puerto Rican people enter the U.S. as citizens and may not rely on existing ethnic communities for support with integrating into U.S. society. Through different waves of immigration from the Island and domestic migration, Puerto Rican people have tended to settle in different areas across the U.S. (Hinojosa, 2018; Meléndez, 2018), which may make it difficult to establish and maintain enclaves. Puerto Rican people also generally have higher levels of African ancestry and, as a result, experience similar levels of discrimination and disadvantage as U.S-born-Black individuals, which limits access to capital and economic opportunities (Healey & Stepnick, 2019; Massey, 2001).

Cuban immigrants were incorporated into the U.S. with the privileges accorded to refugees and have generally been able to establish ethnic enclaves at higher rates than other Latino groups (Healey & Stepnick, 2019). Among Latinos in the U.S., Cuban people generally

have higher levels of economic attainment, which structures access to particular areas (Healey & Stepnick, 2019). The success of early Cuban enclaves and its persistence over time eases the adaptation for later arrivals (Healey & Stepnick, 2019). Mexican immigrants have become the face of undocumented immigration which has profound implications for their access to housing (Walker, 2018). Despite their generally lower socioeconomic status, however, Mexican people have established enclaves because of high-volume immigration (Iceland, 2014).

Skin color, as a visible social marker has also been associated with discriminatory experiences in the housing market (Yinger, 1995). Thus, some Latinos may be relegated to poorer and more stress inducing neighborhoods based on their phenotype alone. Foreign-born and U.S. born Black Latino individuals are also more residentially segregated from non-Hispanic white people than their white Hispanic counterparts (Iceland & Nelson, 2008), further highlighting the role of race in residential attainment. Different patterns of residential segregation (A. H. Kim & White, 2010; Sandoval & Ruiz, 2011) impact the formation and economic conditions of ethnic enclaves.

At the community level, social support is associated with living in an ethnic enclave. As a resource, it can buffer the impacts of negative life circumstances by reducing stress and PTB risk (Hetherington et al., 2015). However, levels of social support may depend on communities' socioeconomic standing and Puerto Rican, Cuban, and Mexican individuals' migration and integration histories. Individual influences like smoking and poor diet, for example, are both linked with inflammation (Furman et al., 2019), which can result in PTB (Buck Louis & Platt, 2011; Institute of Medicine, 2007). In addition, hardships (e.g., poverty) faced during pregnancy can lead to harmful health and coping behaviors (Buck Louis & Platt, 2011). Age, educational level, and marital status are also associated with PTB. The bidirectional arrow between ethnic enclaves and the cross-cutting factors suggests that people shape where they live and these contexts also shape them (Cummins et al., 2007).

4.2.2.2 Social factors

Ethnic enclaves, or distinct geographic areas with high co-ethnic concentration, are shaped by social, economic, and geographic factors. These influences operate jointly to create disparate residential contexts that influence maternal stress and PTB risk. The social environment, conceptualized as social capital, is associated with positive and negative health outcomes (Kawachi & Berkman, 2000; Uphoff, Pickett, Cabieses, Small, & Wright, 2013) and is a central part of the enclave-health effect.

Social capital is related to social cohesion and social networks. Social cohesion refers to the level of connectedness and resources (e.g., shared norms, solidarity, trust, social support, reciprocity) within networks that hold them together and facilitate collective action (Kawachi & Berkman, 2000; Uphoff et al., 2013). Social capital is often divided into two dimensions. The first dimension, bonding social capital, denotes the close relationships between family and friends (e.g., the strong social ties between members of a friend group) and is bolstered through the shared social identity or ethnic bonds commonly found in ethnic enclaves. The second dimension, bridging social capital, refers to the relationships between people who are loosely connected or who have different social identities (e.g., the weak ties connecting people of different SES) (Kawachi & Berkman, 2000; McLafferty, Widener, Chakrabarti, & Grady, 2012; Murayama et al., 2012; Uphoff et al., 2013).

Social capital impacts health in three key ways (Kawachi & Berkman, 2000). Social capital operates through social networks and the health beliefs and practices of the network (e.g., shared health-related norms) to influence health (Kawachi & Berkman, 2000; Uphoff et al., 2013). Social capital also shapes health by enabling access to local services and amenities. In general, residents in more affluent areas can use collective action to lobby for resources (e.g., community health clinics, recreational facilities) that are directly linked to health. Social capital is tied to social support, which can buffer stress and enhance one's ability to cope with stressful

circumstances (Kawachi & Berkman, 2000; Uphoff et al., 2013). However, these benefits may depend, in large part, on the enclave's economic resources (Altschuler et al., 2004).

Although bonding social capital can buffer the effects of living in more economically deprived settings, residents may be unable to capitalize on their relationships if people like them also have insufficient resources (Menjívar, 2000). Residents in less affluent settings may also have less access to bridging social capital than their more affluent counterparts (Uphoff et al., 2013). Living in areas that are highly concentrated by one ethnic group may limit bridging social capital, which would reduce residents access to information and opportunities outside of their networks, and can impact health (Murayama et al., 2012).

Social dynamics might also differ between enclaves despite quantitative similarities. For example, communities produced by residential segregation will generally have lower social capital and poorer health outcomes than those developed from residents' preference about where to live (Alhusen et al., 2016; Kawachi & Berkman, 2000). Another line of research documents the rise of ethnic enclaves in suburban areas and how such places are often met with more immigration enforcement policies (Reich, 2019; Walker, 2018; Walker & Leitner, 2011). Unlike urban areas, Latinos in suburbs, might be viewed as cultural threats which can impact their daily experiences and health (Lichter et al., 2010). Therefore, despite the social environment that's often attributed to ethnic enclaves, these residential contexts may differ in their ability to buffer stressful experiences and reduce PTB risk.

4.2.3 Maternal stress and PTB

Maternal stress is associated with structural, community, and individual-level risk (e.g., smoking) and protective factors (e.g., healthy diets). Maternal stress may also depend on residential contexts. Living in harmful environments may contribute to maternal stress and lead to PTB. Acute or chronic stress may disrupt internal regulatory systems, increasing susceptibility to infection and inflammation during pregnancy (Buck Louis & Platt, 2011; Institute of Medicine, 2007; Wadhwa, Entringer, Buss, & Lu, 2011). Stressful life events and social stressors

sustained during critical periods of in utero development may also increase PTB risk (Buck Louis & Platt, 2011; Wadhwa et al., 2011) and stress from taxing residential contexts can initiate early deliveries (Mendez, Hogan, & Culhane, 2014). Since Mexican, Puerto Rican, and Cuban immigrants and U.S.-born individuals have faced different levels of inclusion and exclusion, levels of maternal stress and its impact of PTB will likely differ by nativity and Latino origin .

4.3 Study aims and hypotheses

The goal of this study is to test the enclave classification among Latina mothers to understand: (1) the association between living in an ethnic enclave and PTB; (2) if the association varies by nativity (e.g., foreign vs. U.S.-born) or (3) local immigration enforcement policies, after adjusting for individual and state-level covariates. This section details the study aims, hypotheses, and analytical model (Figure 4.2).

4.3.1 Analytical model

The analytical model depicts an association between living in an ethnic enclave and PTB (Aim 1), and how it varies, with nativity (Aim 2) and immigration enforcement policies (Aim 3).

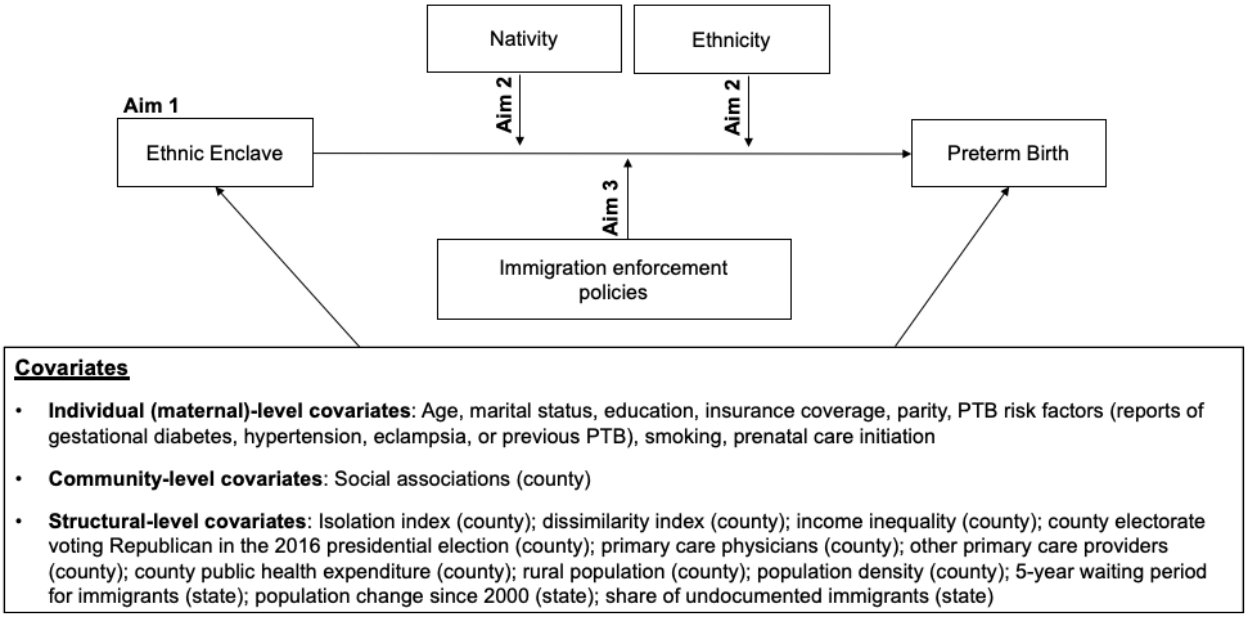


Figure 4.2. The analytical model

4.3.2 Aim 1

Assess the association between living in an ethnic enclave and PTB among Latina mothers after adjusting for individual, county-level, state covariates.

Sub aim 1.1: Assess differences in the distribution of PTB by enclave type.

H1.1. Latina mothers who live in anchored advantage (i.e., medium Latino concentration, large foreign-born population, suburban, low disadvantage) enclaves will experience the lowest odds of PTB compared to other enclave types, whereas those in detached disadvantage (Large Latino concentration, small foreign-born population, urban, high disadvantage) enclaves will experience the highest odds of PTB.

4.3.3 Aim 2

Examine if the association between living in an ethnic enclave and PTB among Latina mothers is modified by nativity after adjusting individual, community, and structural covariates.

Sub aim 2.1: Assess differences in the distribution of PTB by enclave type, by nativity.

H2.1. Nativity will moderate the association between living in an ethnic enclave and PTB, such that the effects are greater for foreign-born vs. U.S.-born Latina mothers (i.e., those in anchored advantaged enclaves will have lower odds of PTB, especially if they are foreign-born).

Sub aim 2.1: Assess differences in the distribution of PTB by enclave type and Latino origin.

H2.**2**. Latino origin will modify the association between living in an ethnic enclave and PTB, such that there will be differences in the odds of PTB, when comparing Latinas of Mexican, Cuban, and Puerto Rican descent living in anchored advantaged enclaves and other areas.

4.3.4 Aim 3

Investigate if the association between living in an ethnic enclave and PTB among Latina mothers is modified by the number of immigration enforcement policies in the enclave after adjusting individual, community, and structural covariates.

Sub aim 3.1: Assess differences in the distribution of PTB by enclave type and immigration enforcement policies.

H3.1. Immigration enforcement policies will modify the association between living in an ethnic enclave and PTB, such that a one unit increase in these policies will result in higher odds of PTB, with greater effects for Latina mothers in detached disadvantage vs. anchored enclaves.

H3.2. Immigration enforcement policies will modify the association between living in an ethnic enclave and PTB, such that a one unit increase in these policies will result in higher odds of PTB, with differences by Latino origin. These effects will be greater for Latinas of Mexican, Cuban, and Puerto Rican descent living in detached disadvantage vs. anchored advantage enclaves.

Summary

The theoretical framework uses structural racism, place stratification, and ethnic preference to illuminate how people are distributed across residential contexts. This framing is useful for assessing how where people live, the resources, services, and opportunities they can access, their differential exposure to risks and harms, affect the health of their newborns. Rather than emphasize immigration-related theories alone, or those that solely foreground structural blocks, the framework bridges disparate perspectives to explain PTB among Latina mothers. The analytical model flows from the theoretical conceptualization of ethnic enclaves and illustrates the hypothesized associations that this dissertation tests.

CHAPTER 5. METHODOLOGY

The goal of this study was to test an ethnic enclave classification among Latina mothers to understand: (1) the association between living in an enclave and PTB; (2) if the association depends on nativity or Latino origin; (3) or local immigration enforcement policies, after adjusting for covariates. This chapter outlines the data sources used to construct the analytical dataset, measurement (Table 5.2), and the research design and analytical plan for each aim.

5.1 Data sources

Data for this study come from multiple sources. In this section, I describe each data source and detail how datasets are merged.

5.1.1 U.S. birth certificate data

This study uses restricted-use birth certificate data for all recorded births in the U.S. between 2017-2018. These data were obtained from the Center for Disease Control and Preventions' (CDC) National Center for Health Statistics (NCHS). As the nation's primary health statistics agency, NCHS compiles health information through the National Vital Statistics System to document the health, including births and deaths, of the U.S. population (Centers for Disease Control and Prevention, 2020). The data obtained for this study contains the geographic identifiers at the county level, which is necessary for these analyses. In the U.S., states are required to complete birth certificates for all births and federal law mandates that birth records be collated and published; essentially all known U.S. births are registered, with over 3 million births occurring annually (Centers for Disease Control and Prevention, 2020). Although these records are available through state-specific vital records offices, this study focuses on national variations in PTB, and obtaining data from one centralized source was optimal.

5.1.2 U.S. census data

Information about the U.S. population will be drawn from the Census Bureau's 5-year (2014–2018) American Community Survey (ACS) and the decennial census. The ACS gathers information about social (e.g., citizenship), housing (e.g., rent), economic (e.g., employment,

federal benefit programs), and demographic changes (e.g., race, Latino origin, total population) on a yearly basis (U.S. Census Bureau, 2019).

Compared to manually appending multiple years, the 5-year population estimate includes a larger sample size for counties (especially for smaller geographical areas), which increases the reliability and precision of standard errors (U.S. Census Bureau, 2019). The Census Bureau suggests using the 5-year population estimates when the precision of estimates is more important than their recency (U.S. Census Bureau, 2019). The 5-year estimates are also more reliable because these data are available for all geographic areas, represent average characteristics over a 5-year period, and have more information about U.S. geographic areas than the 1-year estimates. The decennial census is conducted every ten years and provides the official count of the U.S. population (U.S. Census Bureau, 2020). Information from the 2010 decennial census will be used to assess population change.

5.1.3 Data on immigration enforcement policies

To obtain the number of local immigration enforcement policies in each county, I use the Immigrant Legal Resource Center's (ILRC) measure of local entanglement with Immigration Customs and Enforcement (ICE). The ILRC has tracked local immigration enforcement initiatives since 2013 (Immigrant Legal Resource Center, 2019). In November 2016, the organization obtained documents from ICE through the Freedom of Information Act (FOIA) and harnessed this information with their expertise in state and local immigration enforcement laws, policies, and ordinances (Immigrant Legal Resource Center, 2019). The database was updated with a second FOIA obtained in December 2017. In 2018, the IRLC followed changes to immigration enforcement policies at the local and state levels and updated their database again (Immigrant Legal Resource Center, 2019). This cross-sectional data source represents the landscape of immigration enforcement policies across the U.S.

In 2019, I obtained the dataset along with additional correspondence about how the following seven county-level immigration enforcement policies were coded:

Table 5.1. Local entanglement with federal immigration enforcement

1. Does the county have a 287(g) agreement with ICE?
2. Does the county have a contract with ICE to detain immigrants in county detention facilities?
3. Does the county limit or refuse to hold individuals after their release date on the basis of ICE detainers (ICE holds)?
4. Does the county have a policy against notifying ICE of release dates and times or other information about inmate status?
5. Does the county allow ICE in the jail or require consent from detainees before ICE agents are allowed to interrogate them while in custody?
6. Does the county prohibit asking people about their immigration status?
7. Does the county have a general prohibition on providing assistance and resources to ICE for the purposes of enforcing civil immigration laws or against participating in joint task forces?

5.1.4 Other data sources

Additional information were retrieved from the County Health Rankings (i.e., social associations, income inequality, primary care physicians, other primary care providers, % rural) (University of Wisconsin Population Health Institute, 2022); the CDC (i.e., border and non-border counties) (The U.S.-Mexico Border Health Commission, 2020); the Massachusetts Institute of Technology's Election Data and Science Lab (i.e., % of county electorate voting Republican in the 2016 presidential election) (MIT Election Data and Science Lab, 2022); the Census of Governments (i.e., county public health expenditure (not hospital care)) (U.S. Census Bureau, 2018); the National Conference of State Legislatures (i.e., state provision of driver's licenses to undocumented immigrants) (National Conference of State Legislatures, 2018); Kaiser Family Foundation (i.e., states' expansion of Medicaid, coverage of lawful immigrants without a 5-year wait, extension health insurance to undocumented children) (Brooks, Roygardner, Artiga, Pham, & Dolan, 2019), and the Migration Policy Institute (i.e., % of states' undocumented immigrant population) (Migration Policy Institute, 2021b).

Table 5.2. Study variables, measurement, aims, and data sources

Variable	Measurement	Rationale	Data source
1. Preterm birth	A binary (yes/no) variable (≤ 37 weeks of gestation or not)	Outcome variable	U.S. Natality data[a]
2. Ethnic enclave	The enclave classification is assessed as 9 enclave types	Independent variable	ACS (2014-2018)[b]
3. Mother's nativity	U.S. born or foreign-born	Moderating variable (Aim 2) Covariate (Aims 1 and 3)	U.S. Natality data[a]
4. Mother's Latino origin	Mexican, Puerto Rican, Cuban, and Central and South American		
5. Immigration enforcement policies	Assessed as a total policy score (0-7): (1) participating in 287(g) program; (2) holding an ICE detention contract; (3) allowing ICE holds; (4) notifying ICE; (5) allowing ICE interrogations in jail; (6) allowing law enforcement inquiry about legal status; (7) broadly allowing ICE assistance	Moderating variable (Aim 3) Covariate (Aims 1 and 2)	ILRC[c]
Individual (maternal)-level covariates for all aims			
6. Parity	First birth or higher (continuous)	Known risk factors for PTB	U.S. Natality data[a]
7. Smoking	Yes/No		
8. Risk factors	Gestational diabetes, hypertension, eclampsia, previous PTB (none vs. one or more)		
9. Age	Continuous		
10. Education	8th grade or less, some high school, high school grad/GED, some college/AA degree, bachelor's degree/higher, or missing		
11. Marital status	Married, unmarried, missing		
12. Prenatal care initiation	Entering prenatal care after the first trimester or in the second or later pregnancy trimesters		
13. Health insurance	Medicaid, private insurance, self-pay, other, or missing		
Community-level covariates for all aims			
14. Social associations (per county population)		Social capital, social support, social networks	County Health Rankings[d]
Structural covariates (county-level indicators) for all aims			
15. Isolation index (expressed as a weighted average at the county level). Where x_i is the number of Latinos in tract i; X is the total number of Latino residents in each county; t_i is the total number of people in each tract, N represents the number of tracts within each county. $$P_1 = \sum_{i=1}^{N} \frac{x_i}{X} \frac{x_i}{t_i}$$		Residential segregation Captures the exposure dimension (or degree of potential contact).	ACS (2014-2018)[b]

Variable	Measurement	Rationale	Data source
16. Dissimilarity index (expressed as a weighted average evaluated at the county level). Where x_i is the population of Latinos in the i^{th} census tract; X is the total population of Latinos in the county; w_i is the population of White people in the i^{th} census tract; W is the total population of White people in the county. Values range from 0 (total integration) to 1.0 (highest level of segregation). $$D = \frac{1}{2}\sum_{i=1}^{N}\left\lvert\frac{x_i}{X} - \frac{w_i}{W}\right\rvert$$		Residential segregation Captures the share of Latinos that would need to move across census tracts in order to be evenly distributed	ACS (2014-2018)[b]
17. Population density (county)		Adjusts for population-level differences across place	
18. % State population change since 2000			
19. % of county electorate voting Republican in the 2016 presidential election		Policy climate	MIT Election Lab[e]
20. Income inequality, a ratio of household income at the 80th vs. 20th percentile		Economic inequity	County Health Rankings[d]
21. The ratio of county population to primary care physicians		Access to health-related services; health care context; and environment	
22. The ratio of county population to other primary care providers			
23. % rural population (county)			
24. County public health expenditure (other than hospital care)			Census of Governments[b]
25. State covers lawful immigrants without 5 year wait		Immigrant integration	KFF[f]
26. % undocumented foreign-born population in state		Adjusts for population-level differences across place; Region and border are excluded from multivariable analyses	MPI[g]
27. U.S. region (i.e., Northeast, Midwest, South, or West)			ACS (2014-2018)[b]
28. U.S.-Mexico Border and non-Border counties			CDC[h]

Note. [a]U.S. natality data (2017-2018), CDC; [b]U.S. Census (American Community Survey (2014-2018); the 2000 Decennial survey; Census of Governments; [c]Immigrant Legal Resource Center; [d]The County Health Rankings; [e]MIT Election Lab, the County Presidential Election Returns for 2016; [f]Kaiser Family Foundation, Medicaid and CHIP Eligibility, Enrollment, and Cost Sharing Policies as of January 2019; [g]Migration Policy Institute, this estimate uses the 2014-2018 ACS; [h]The Border Health Status Report of the 44 U.S. Counties at the U.S.- Mexico Border; [i]National Conference of State Legislatures;

5.2 Analytic sample

The study sample includes 1,084,867 births, occurring between 2017 and 2018 to Latina mothers residing in 115 counties in the continental U.S. I applied several restrictions to obtain the analytic sample (see Appendix C and Appendix D). There were 7,666,288 births in 2017 (n=3,864,754) and 2018 (n=3,801,534). I removed births occurring to foreign nationals (n=19,076), before excluding births from non-Hispanic mothers (n=5,795,889), mothers of other or unknown Latino origin (n=294,713) and those (n=66,349) with missing Latino origin information. After these initial exclusions, there were 1,485,825 eligible births. I then excluded all plural births (n=36,578), births occurring to women not in reproductive age (15-49) (n=1,332) due to the greater propensity for premature deliveries (Institute of Medicine, 2007), births to mothers with an unknown gestation period (n=681), and records where gestation age did not reflect a viable birth (less than 20 weeks) (n=384).

Next, I merged the contextual dataset and excluded birth records (n=15,707) without complete matches on the county-level immigration policy measure or voting information. Since the focus of this study is to understand the influence of distinct ethnic enclave types on PTB (rather than comparing ethnic enclaves to non-enclave settings), I excluded records to mothers not residing in an ethnic enclave (n=344,673), as defined for this study. In the final step, I investigated all individual-level variables and only excluded (n=6,910) records with missing information on nativity (n=542), marital status (n=32) parity (n=1,633), and smoking (n=4,860).

Aim 1 will include the full sample (N=1,084,867). This will allow me to assess the overall association between among Latina mothers. Aim 2 will use a restricted sample (n=886,170), as these analyses will focus only on women of Mexican (n=762,291), Puerto Rican (n=87,419), or Cuban (N=36,460) descent. Restricting these analyses allows me to better evaluate and interpret study results. The Central/South American category is heterogenous (n=198,697), consisting of individuals from many different countries. The inclusion of this category would obscure study interpretations. The sample for aim 2 accounts for 82% of the full study sample.

Since the goal of aim 3 is to establish if the association between living in an ethnic enclave and PTB depends on immigration enforcement policies, I will first use the full study sample from aim 1 before examining differences by Latino origin with the restricted sample.

5.3 Measurement

The following section outlines study variables and measures. Table 5.2 details study variables, measures, and data sources, by analytical aim.

5.3.1 Outcome variable

The primary outcome variable is preterm birth. Preterm birth was coded as full-term (0) or preterm (1) and represents all deliveries occurring at less than 37 weeks of gestation.

5.3.2 Predictor variable

I created the ethnic enclave measure with data from the 2014-2018 ACS. This measure was adapted from previous studies (Tam, 2019; Walton, 2015) and uses the following census variables in a classification tree: 1) race (percent Latino); 2) foreign-born (percent foreign-born); 3) county disadvantage (a factor score based on county characteristics, including a) percent on public assistance, b) percent of children living in poverty, c) percent unemployed, d) percent with a bachelor's degree or higher, and e) median household income); and 4) the National Center for Health Statistics' urban–rural classification of U.S. counties (Ingram & Franco, 2014).

Ethnic concentration was divided into high (≥ 2SD (27.49%)) and medium (1-2 SD (13.75%-27.49%)) ethnic density areas. Within each branch, I used the proportion of the foreign-born population in the area to determine if the concentration of immigrants was above two SDs (11.42%) of the county average. Using the SD as a cutoff is a common approach in population studies (Lichter et al., 2010; Tam, 2019). Latino density ranged from 0% to 99%, with a mean of 9.25% (median= 4.10%) and foreign-born density ranged from 0% to 53.2% (mean= 4.73%, median= 2.74%). Next, I used the NCHS county classification (Ingram & Franco, 2014) to demarcate suburban and urban areas (see Appendix B). Urban counties are "large central metro" counties, suburban counties include "large fringe metro," "medium metro" and "small

metro” counties, and rural counties are nonmetropolitan areas, which are excluded from this study. This approach has been used elsewhere (Parker et al., 2018). For the final branch, I delineated high and low areas using the mean obtained from the normalized socioeconomic disadvantage factor score of county disadvantage. Normalizing the variable enables assessing socioeconomic indicators on the same scale. Figure 3.2. depicts the classification process.

The classification generated nine enclave types across 232 U.S. counties where Latino ethnic concentration is above the county-level standard deviation (13.75%): (1) connected disadvantage (i.e., Large Latino concentration, large foreign-born population, suburban, high disadvantage); (2) connected advantage (i.e., Large Latino concentration, large foreign-born population, suburban, low disadvantage); (3) concentrated disadvantage (i.e., Large Latino concentration, large foreign-born population, urban, high disadvantage); (4) concentrated advantage (i.e., Large Latino concentration, large foreign-born population, urban, low disadvantage), (5) disconnected disadvantage (small foreign-born population, Large Latino concentration, suburban, high disadvantage); (6) disconnected advantage (i.e., small foreign-born population, Large Latino concentration, suburban, low disadvantage); (7) detached advantage (small foreign-born population, Large Latino concentration, urban, low disadvantage); (8) anchored disadvantage (i.e., medium Latino concentration, large foreign-born population, suburban, high disadvantage); (9) anchored advantage (i.e., medium Latino concentration, large foreign-born population, suburban, low disadvantage)).

To identify the corresponding enclaves where mothers lived, census data were merged with information on birth records using a five-digit county Federal Information Processing Series (FIPS) code. FIPS codes are issued by the American National Standards Institute to ensure that U.S. federal agencies can correctly identify all geographic areas (U.S. Census Bureau, n.d). These codes were also used to merge all additional data sources with the birth certificate data.

5.3.3 Moderating variables

Nativity

I use mothers' self-reported nativity as U.S. born (0) or foreign-born (1). Those who are born outside of the U.S., including those who report their place of birth as Puerto Rico, are considered foreign-born.

Latino origin

In relevant models, Latino origin was included as Mexican (1), Puerto Rican (2), Cuban (3) or Central/South American (4) (to ensure the interpretability of study findings, Central/South American was excluded from analyses focusing on Latino origin). The categorization of Latino origin is based on NCHS procedures (e.g., collapsing the latter category because of small sample sizes).

Immigration enforcement policies

ILRC uses a yes (0) or no (1) metric, totaling a score of 7, to determine how involved counties are with ICE. I recoded this score, so that a 7 denotes the highest level of ICE involvement and 0 denotes no entanglement with ICE.

5.3.4 Covariates

Individual (maternal)-level covariates

Age, married status, number of live births, educational status, type of insurance coverage, total number of PTB risk factors, prenatal care use, and whether or not mothers' smoked were included as individual level covariates. (a) Age was a continuous variable. (b) Marital status was included as married (0), unmarried (1) or missing (2). The missing category was preserved to maintain births to Latina mothers in California. Due to state regulations, NCHS does not release individual-level data on the marital status of California residents or anyone who gives birth in the state. (c) Parity or the total number of live births was a continuous measure. (d) Educational status was included as 8^{th} grade or less (0), some high school (1), high school grad/GED (2), some college/Associates (3), college/higher (4) or missing (5). (e) Type of

insurance coverage was assessed as Medicaid (0), private insurance (1), self-pay (2), other (3), or missing (4). (f) Total number of PTB risk factors was based on a count of mothers' reports of gestational diabetes, hypertension, eclampsia, or previous PTB. This measure was assessed as no PTB risk factors (0) or yes (one or more PTB risk factors, (1)). (g) Prenatal care use was assessed as entering prenatal care after the first trimester (0) or in the second or later pregnancy trimesters (1). (h) A dichotomous indicator was included to denote whether or not mothers smoked at any point during pregnancy (coded as 1 if yes, and 0 if no).

Community-level covariates

Social associations were the number of membership associations per 10,000 population. As a proxy for community-level social capital, this measure reflects informal and formal networks and is in line with other social capital measures (United States Congress & Joint Economic Committee, 2018).

Structural covariates

Several measures were used to capture the structural context of each enclave. Two indicators were used to assess levels of residential segregation: the dissimilarity index and the isolation index. I evaluated dissimilarity between Latino and white residents, which can be interpreted as the share of residents that would need to move to a different neighborhood (i.e., census tract) to ensure a more uniform population distribution of both groups in the county. Values range from 0 (total integration) to 1 (segregated) and are interpreted as a percentage. The equation used for this measure is:

$$D = \frac{1}{2}\sum_{i=1}^{N} \left|\frac{x_i}{X} - \frac{w_i}{W}\right|$$

Where x_i is the population of Latinos in the i^{th} census tract; X is the total population of Latinos in the county; w_i is the population of White people in the i^{th} census tract; W is the total population of White people in the county.

I also used the isolation index, another common measure of residential segregation (Massey & Denton, 1988), to assess the extent to which Latinos are exposed only to other Latinos in a given county (i.e., isolated from other race/ethnic groups). Following other studies (Chan, Gaskin, Dinwiddie, & McCleary, 2012; Havewala, 2021), I expressed the index as a percentage to simplify interpretation. A higher isolation index indicates greater exposure to other Latinos or more isolation from out-group members. Other research has suggested that this measure may also reflect the degree of clustering into enclaves within counties (Mobley, Scott, Rutherford, & Kuo, 2017; Yang, Park, & Matthews, 2020). As is typical, the isolation index for census tracts—a lower geographical unit—will be averaged to generate an isolation index for each county. Unlike the dissimilarity index, the isolation index accounts for the size of the groups being compared. The equation used for this measure is:

$$P_1 = \sum_{i=1}^{N} \frac{x_i}{X} \frac{x_i}{t_i}$$

Where x_i is the number of Latinos in tract i; X is the total number of Latino residents in each county; t_i is the total number of people in each tract, N represents the number of tracts within each county. The index ranges from 0 to 1, with higher values indicating greater isolation. Since economic inequity also impacts the contexts in which people live, I included a measure of income inequality, assessed as the ratio of household income at the 80th percentile to income at the 20th percentile for U.S. counties. Because the local health system context—in terms of access to providers and public health spending—may influence health and consequently the risk of preterm births, I accounted for (1) the ratio of the county population to primary care physicians; (2) the ratio of the county population to primary care; and (3) county health expenditures for public health other than hospital care.

To capture the immigrant policy climate within each county, I included integratory and exclusionary policy indicators. I used an indicator capturing whether states cover lawful immigrant children and/or pregnant women without a five-year wait for Medicaid/CHIP coverage,

assessed as yes (1) or no (0), and the total number of immigration enforcement policies in each county. The proportion of the county-level electorate who voted for the Republican candidate in the 2016 presidential election was also included.

To adjust for differences between counties, I adjusted for various population level measures, including the proportion of: (a) the undocumented foreign-born population in each state, (b) the degree of population change since 2000, (c) the rural population within each county, (d) and population density (the number of people per square mile of land area) because people generally cluster in cities, as opposed to rural or suburban areas were people are generally more spread out across place (U.S. Census Bureau, 2015).

Given the high degree of collinearity between variables or their limited distribution across classified counties, I excluded the following variables from regression models and only describe them when discussing study characteristics. Each county was given an integration score based on whether their state: (1) issued driver's licenses to undocumented immigrants; (2) expanded Medicaid; (3) covers lawful immigrants without five-year wait; (4) extends health insurance to undocumented children; the integration score ranged from 0-4 (mean= 2.02, SD= 1.72). The proportion of Latinos, the share of the foreign-born population in each state, U.S. region (i.e., Northeast (1), Midwest (2), South (3), or West (4))) and an indicator assessing U.S.-Mexico Border (1) and non-Border (0) counties were also omitted.

For regression analyses, I log transformed continuous community and structural-level measures, as these variables were highly skewed. The dissimilarity and isolation index and the enforcement score were not transformed to retain their interpretability.

5.4 Analysis plan

This section details the analytic plan that guide this study. Analyses proceeded in four steps: (1) conducting descriptive analyses; (2) examining bivariate relationships and assessing bivariate associations; (3) fitting, testing, and selecting models, including conducting sensitivity

analyses; and (4) interpreting results. I describe each phase of my analysis plan before detailing my approach for each aim. All analyses were conducted using Stata/MP 17 (StataCorp, 2021).

5.4.1 Univariate analyses

I examined summary statistics and the frequency and distribution of study variables. I used histograms to graphically assess the data, and remedied skewed data, by log-transforming the continuous community and structural variables (see Figure 1 in Appendix E). I performed normality checks with distributional diagnostic plots. Using quantile-quantile plots, I plotted the quantiles of continuous variables against the quantiles of the normal distribution and assessed if the data followed a normal distribution (see Figure 2 in Appendix E).

5.4.2 Bivariate analyses

I investigated differences between study variables and preterm birth, by enclave type (aim 1), nativity and Latino origin (aim 2), and immigration enforcement policies (aim 3) using t-tests, ANOVA, and chi-square tests. I also examined correlations between study variables (see Figure 3 in Appendix E) and investigated the association between each variable and PTB (Table 6.4). All significance tests were set at p= 0.05.

5.4.3 Multivariate analyses

For each aim, I estimated logistic regression models to: (1) evaluate the association between living in an ethnic enclave and PTB; (2) assess whether the association depends on nativity and nativity; (3) or local immigration enforcement policies, after adjusting for covariates. Logistic regression models enable the estimation of an event occurring (i.e., preterm birth (1) or not (0)) (Afifi, May, Donatello, & Clark, 2019). I began model building by first fitting a model with the ethnic enclave and preterm birth variables. Following this step, I added the individual-level factors (model 2), the community-level predictor, and the structural indicators. The final analytic model is in line with the literature and theoretical orientation of this study.

$$\text{logit}(\text{p}) = \beta_0 + \beta_{\text{Enclave}}\text{x}_1 + \text{X}\beta_{\text{Individual}} + \text{X}\gamma_{\text{Community}} + \text{X}\delta_{\text{Structural}} + \epsilon \quad (1)$$

Where:

p is the probability of preterm birth

β_0 is the average log odds of preterm birth among Latina mothers in the study sample (when all variables are equal to zero)

$\beta_{\text{Enclave}} x_1$ is the ethnic enclave variable

$X\beta_{\text{Individual}}$ is a vector of the individual (maternal)-level indicators

$X\gamma_{\text{Community}}$ is a vector of the community-level indicators

$X\delta_{\text{Structural}}$ is a vector of the structural-level indicators

ϵ is the error term

5.4.4 Aim 1 methods

Assess the association between living in an ethnic enclave and PTB among Latina mothers, adjusting individual, community, and structural covariates.

Sub aim 1.1: Assess differences in the distribution of PTB by enclave type.

To investigate differences in the distribution of PTB by enclave type, I used a two-by-two contingency table and applied a chi-square test, with significance set at 0.05. I first investigated the association between living in an ethnic enclave and PTB, before assessing the influence of the individual, community, and structural covariates on the outcome. I then fit the final model (model 4).

$$\text{logit}(p) = \beta_0 + \beta_{\text{Enclave}} x_1 + X\beta_{\text{Individual}} + X\gamma_{\text{Community}} + X\delta_{\text{Structural}} + \epsilon \quad (2)$$

After this step, I conducted postestimation analyses to visually examine the predicted probability of PTB for each enclave. I also performed a post hoc hypotheses tests after the final model to investigate differences between the ethnic enclave delimiters. The next section details the sensitivity analyses that were conducted to select at the final analytic model.

5.4.4.1 Sensitivity analyses

Multilevel models

I performed a series of sensitivity analyses to select the final analytic model. I first fit multilevel regression models, as these analytic models are useful when data are assumed to be nested (Afifi et al., 2019). That is, contextual effects represent a higher level of influence—separate from, but related to individual level effects—on the outcome. I fit these models without state indicators, as these variables would not account for any additional variation between counties. Given the distribution of ethnic enclaves across the region and border indicators (i.e., several cells had zeros, suggesting that such enclaves were not classified in that region; or no such enclaves existed in border areas), I also fit multilevel regression models with and without these variables and observed that the direction, strength, and overall associations of the enclave predictors did not change (see Appendix F). Although when comparing both models using the likelihood ratio test, the region and border variables appeared to improve model fit (p=0.02), there were only slight differences in the -2 Log Likelihood (-302654 in the model with region and border vs. -302661 in the model without these indicators).

I also examined the variance in PTB that is explained by Latina mothers' county of residence and found little variation between counties. The intraclass correlation coefficient (ICC), ρ = .01, indicated similarity in PTB between enclaves, indicating that the random component might not be needed. Since in all multilevel models, the ICC only reached 0.01, suggesting that less than 1% of the variation between counties was explained using this modeling approach, I investigated the research question with logistic regression models.

Multicollinearity

To assess multicollinearity between study predictors, without fitting a regression model, I used the UCLA written user command, collin (see Appendix G). The collin command provides information about the variance inflation factor (VIF), a measure that assesses the strength of the correlation between independent variables (Afifi et al., 2019). There were issues with the region,

integration, proportion of county population change since 2000, and total foreign population in state variables which were above the established VIF cutoff of 10 (Afifi et al., 2019).

I also used the standard Stata procedure to obtain the VIFs after fitting a simple linear regression model. Exploring the VIFs after these models showed additional issues with the marital status and total population of Latinos in the state variables. I excluded the region variable in a subsequent model and noticed significant improvements with the VIFs. Because integration had the second highest VIF (14.56), I excluded this variable in the next model, which improved the VIFs. To capture integration, while still remedying multicollinearity issues, I used an indicator of whether states cover lawful immigrant children and pregnant women without a five-year wait for Medicaid/CHIP coverage as a measure of integration instead of the integration score. I selected this measure because there was a good distribution of enclave types in states with and without this policy.

In refitting the linear model, assessing VIFs, and using the collin command, respectively, I observed an improvement of VIFs. Because the state population of Latinos and the state foreign-born population were still close to 10 and significantly positively correlated ($r(1,084,865) = 0.62$, $p<.001$), I excluded these variables from the final model. I also excluded the border variable because of issues with empty cells when examined across enclaves (see Table 6.3). Based on my findings from the multilevel analytic models and my investigation of VIFs, I fit logistic regression models and examined the influence of the problematic variables.

Logistic models

I fit logistic regression models, this time including state-level variables, but excluding region, border, the total state population of Latinos and total foreign-born population in the state, and substituting the integration score with an indicator of whether states cover lawful immigrants without a five-year wait. Across all logistic models, the general finding of the association between living in an ethnic enclave and PTB did not change: relative to Latina mothers who live in anchored advantage enclaves, those who live in connected disadvantage enclaves are

expected to report the lowest likelihood of preterm birth, all else equal. I elected to use logistic regression models as the final analytic approach to enable the inclusion of state covariates and to account for at least one measure of immigrant integration.

Ethnic enclaves

Since there were few conceptual differences between anchored advantage enclaves and anchored disadvantage enclaves, I evaluated if my results from aim 1 were robust to: (1) collapsing the anchored enclaves, and (2) using the larger enclave grouping (see Appendix G).

Low birth weight

Since low weight births may result from the processes that contribute to PTB, I investigated the association between living in an ethnic enclave and low birthweight, defined as a live birth weight of less than 2500 grams. Overall, these analyses yielded similar results: relative to Latina mothers who live in anchored advantage enclaves, those who live in connected disadvantage enclaves are expected to experience the highest odds of low birthweight, all else equal.

Select states

Since U.S. regions theoretically influence migration patterns and the influence of enclaves may vary across states, I also assessed the association between living in an ethnic enclave and PTB in five select states (California, Texas, Florida, Illinois, and New York). These five states had the largest share of the Latina population in this study. However, each individual model suffered from severe multicollinearity issues, with the New York model not fitting at all.

5.4.4.2 Post-estimation analyses

To evaluate the results from aim 1, I performed postestimation and post hoc analyses.

Predicted probabilities

After fitting the final model, I conducted postestimation analyses to visually examine the predicted probability of PTB, net of all covariates. These margins graphs aid with the interpretation of results and were plotted after fitting the final analytic models for each aim.

Pairwise comparisons

Following the final logistic model, post-estimation analyses were conducted to examine the predicted probability of PTB for comparable ethnic enclaves, adjusting for all covariates. I performed these post-hoc analyses to investigate differences between enclaves using key enclave grouping characteristics (i.e., the social, economic, geographic delimiters). All results were considered statistically significant at p=.05.

To test for differences by ethnic density, I compared connected vs. anchored enclaves, where the primary difference was the proportion of Latinos (i.e., high vs. medium). To assess differences by immigrant concentration (i.e., high vs. low foreign-born), I compared connected vs. disconnected enclaves and concentrated vs. detached enclaves, where the difference was the proportion of immigrants. To investigate differences by economic factors, I compared connected, concentrated, anchored, and disconnected advantage enclaves to their disadvantage corollaries. In these comparisons, the main difference was the enclave's economic standing. To evaluate differences by geography (i.e., suburban vs. urban), I compared connected vs. concentrated enclaves and disconnected vs. detached enclaves. No comparisons were possible between detached advantage (large Latino concentration, small foreign-born population, low disadvantage, urban) areas since no counties were classified.

The sensitivity analyses that followed aim 1 substantiated: (1) using logistic regression models, (2) using the nine ethnic enclave categories, and (3) highlighted the influence of the social, economic, and geographic delimiters in the differences between enclave types. Next, I describe the methods for Aims 2 and 3, which build upon the results from aim 1.

5.4.5 Aim 2 methods

Examine if the association between living in an enclave and PTB among Latina mothers is modified by nativity, adjusting individual, community, and structural covariates.

Sub aim 2.1: Assess differences in the distribution of PTB by enclave type and nativity.

Sub aim 2.2: Assess differences in the distribution of PTB by enclave type and Latino origin.

I build upon the two-by-two contingency table in sub aim 1.1 and stratify by nativity to examine differences in the distribution of PTB by enclave type and (1) nativity and (2) Latino origin. To complete aim 2, I fit stratified models (adapting equation 1, model 4) to investigate nativity (i.e., foreign-born, U.S. born) and Latino origin (Mexican, Puerto Rican, Cuban origin) differences. These models account for the disparate effects different residential contexts may have on PTB by nativity and Latino origin. The full models for aim 2 are outlined below:

$$\text{logit}(\text{p}) = \beta_0 + \beta_{\text{Enclave}}\text{x}_1 + \text{X}\beta_{\text{Individual}} + \text{X}\gamma_{\text{Community}} + \text{X}\delta_{\text{Structural}} + (\beta_{\text{Enclave}}\text{x}_1 \times \beta_{\text{Nativity}}\text{x}_2) + \epsilon \quad (3)$$

$$\text{logit}(\text{p}) = \beta_0 + \beta_{\text{Enclave}}\text{x}_1 + \text{X}\beta_{\text{Individual}} + \text{X}\gamma_{\text{Community}} + \text{X}\delta_{\text{Structural}} + (\beta_{\text{Enclave}}\text{x}_1 \times \beta_{\text{Latino origin}}\text{x}_2) + \epsilon \quad (4)$$

The stratified models are interpreted only for the group that is the focus of the analyses. For example, a model with just foreign-born Latina mothers would be comparing foreign-born Latina mothers residing in anchored advantaged enclaves to foreign-born Latina mothers residing in other settings. A similar logic is used to assess Latino origin.

In a separate model, I used the enclave type and nativity interaction term, $(\beta_{\text{Enclave}}\text{x}_1 \times \beta_{\text{natvity}}\text{x}_2)$, to assess the odds of PTB that is associated with residing in anchored advantaged enclaves versus other areas, comparing U.S. and foreign-born mothers in each setting. The interaction term in this model may be interpreted as the difference between the log-odds ratio of PTB comparing U.S. and foreign-born Latina mothers in anchored advantaged enclaves and the log-odds ratio of PTB comparing U.S. and foreign-born Latina mothers residing in other enclave settings.

I also used margins plots to graphically evaluate: (1) the predicted probabilities of experiencing PTB comparing foreign-born Latina mothers to their U.S.-born counterparts in each enclave type after adjusting for all variables, and (1) the predicted probabilities of

experiencing PTB comparing Latina mothers of Mexican, Puerto Rican, and Cuban descent in each enclave type, holding all variables constant.

In sensitivity analyses, I examined if results would change when I collapsed anchored advantage and disadvantage enclaves or used the larger enclave groupings. Given their similar etiology, I also assessed the association between living in an ethnic enclave and low birth weight.

5.4.6 Aim 3 methods

Investigate if the association between living in an enclave and PTB among Latina mothers is modified by the number of local immigration enforcement policies in the enclave, adjusting individual, community, and structural covariates.

Sub aim 3.1: Assess differences in the distribution of PTB by enclave type and immigration enforcement policies.

Sub aim 3.2: Assess differences in the distribution of PTB by enclave type, Latino origin, and immigration enforcement policies.

I used an analysis of variance (ANOVA) test to investigate differences in the average number of immigration enforcement policies across enclaves. The ANOVA test allowed me to assess if the mean number of immigration enforcement policies differs significantly across enclaves. I also dichotomized (e.g., low/high policy areas) the total number of immigration enforcement policies to examine if differences in the distribution of PTB across enclaves are significant when assessed with a chi-square test. I began multivariate analyses with the final model (equation 1) and included an interaction term $(\beta_{\text{Enclave}}x_1 \times \beta_{\text{enforcement policies}}x_2)$. The full model for Aim 3 is presented below:

$$\begin{aligned}\text{logit}(p) = \beta_0 + \beta_{\text{Enclave}}x_1 + X\beta_{\text{Individual}} + X\gamma_{\text{Community}} + X\delta_{\text{Structural}} \\ + (\beta_{\text{Enclave}}x_1 \times \beta_{\text{enforcement policies}}x_2) + \epsilon\end{aligned} \quad (5)$$

$$\text{logit}(p) = \beta_0 + \beta_{\text{Enclave}}x_1 + X\beta_{\text{Individual}} + X\gamma_{\text{Community}} + X\delta_{\text{Structural}} + (\beta_{\text{Enclave}}x_1 \times \beta_{\text{enforcement policies}}x_2 \times \beta_{\text{Latino origin}}x_3) + \epsilon \quad (6)$$

The interaction term can be interpreted as the difference between the log-odds ratio of PTB corresponding to a unit increase in immigration enforcement score among Latina mothers in anchored advantaged enclaves and the log-odds ratio of PTB corresponding to a unit increase in immigration enforcement score among Latina mothers residing in other enclaves.

To complete aim 3, I fit stratified models adapting the final model (equation 1) to investigate differences in the association between living in an ethnic enclave and immigration enforcement scores by Latino origin (i.e., Mexican, Puerto Rican, Cuban origin). These models account for the disparate effects immigration enforcement policies may have in different residential contexts on PTB across Latino origin groups. The stratified models are interpreted only for the group that is the focus of the analyses. A model with Mexican mothers would be comparing Mexican mothers residing in anchored advantaged enclaves to Mexican mothers residing in other settings. I used margins plots to graphically evaluate the predicted probabilities of experiencing PTB as immigration enforcement policies increase in each enclave type, net of all variables.

In sensitivity analyses, I investigated the best way to use the immigration enforcement variable in the regression model. I conducted the same sensitivity analyses from aim 2 (e.g., collapsing anchored advantage enclaves and anchored disadvantage enclaves; using the larger enclave group) and investigated the association between ethnic enclaves, preterm births, and immigration enforcement policies using the immigration enforcement score, and dichotomizing the score using the mean, median, and a binary measure (0 or more than 1).

CHAPTER 6. RESULTS

This chapter presents results by study aim. In aim 1, I describe the study sample and present bivariate results, stratified by preterm birth and enclave type. Next, I detail results from the bivariate and multivariate logistic regression analyses, post-hoc analyses, and sensitivity tests. In aim 2, I present bivariate results stratified by nativity and Latino origin, respectively, outline results from the multivariate logistic regression analyses, and summarize sensitivity tests. In aim 3, I describe results from investigating correlations and the mean immigration enforcement policy score by study measures before presenting findings from the multivariate logistic regression analyses and sensitivity tests. Results in this section reference the nine different enclave types that make up the ethnic enclave classification. Table 3.1 summarizes the enclave classification, Figure 3.2 illustrates the classification process, and Figure 3.3 is a map of the distribution of these enclaves across the U.S. An overview of the classification is available online at https://bit.ly/nwankwo-diss-infographic.

6.1 Aim 1 results

The goal of aim 1 was to investigate the association between living in an ethnic enclave and PTB among Latina mothers after adjusting for individual-, county-, and state-level covariates.

Sub aim 1.1: Assess differences in the distribution of PTB by enclave type.

H1.1. Latina mothers who live in anchored advantage (i.e., medium Latino concentration, large foreign-born population, suburban, low disadvantage) enclaves will experience the lowest odds of PTB compared to their counterparts in other enclave types, whereas those in detached disadvantage (Large Latino concentration, small foreign-born population, urban, high disadvantage) enclaves will experience the highest odds of PTB.

6.1.1 Univariate analyses

6.1.1.1 The study sample

Table 6.1 presents the characteristics of the study sample (N=1,084,867). In 2017 and 2018, about 1 in 8 births were premature (8.3%). Over 50% of the sample lived in concentrated (i.e., large Latino concentration, large foreign-born population, urban areas) advantage (29.1%) and disadvantage enclaves (26.5%). The fewest number of people lived in detached disadvantage enclaves (1.0%) (i.e., large Latino concentration, small foreign-born population, high disadvantage, urban areas). There were slightly less foreign-born (49.2%) than U.S. born (50.8%) individuals in this sample, and about 70.3% were of Mexican origin. The average age was 28.2 (SD=6.1, range=15-49). About an even proportion of people were either married (32.5%) or unmarried (35.8%); the final third were considered missing (31.7%). The majority (32.5%) had completed a high school degree or GED and most births (60.1%) were covered with Medicaid. On average, the Latina mothers in this sample reported having two or more previous live births (M=2.3, SD=1.3) and 11.7% had at least one risk factor for PTB (i.e., having gestational diabetes, hypertension, eclampsia, or previous premature birth). Very few mothers disclosed ever smoking during pregnancy (1.1%), but over a quarter (28.0%) had delayed initiating prenatal care.

Although most people (44.4%) lived in Western U.S. states, very few resided in counties (9.7%) that bordered Mexico. About 45.1% of the sample lived in states that provided drivers licenses to undocumented immigrants and 62.9% lived in states that had expanded Medicaid based on income eligibility. Almost an equal proportion lived in states with (49.6%) and without (50.4%) a five-year waiting period for lawful immigrants to access health insurance. Less than half of the sample (44.4%) lived in states that provide health insurance to undocumented children. Overall, people lived in states with at least 2 (SD=1.7) immigrant integration policies (range= 0 - 7). Most individuals in this sample lived in counties with 6 (SD=2.0) or more social associations per 10,000 people (range= 0.0 - 21.1) and had about a 50% chance of being

exposed to another Latino person (M=51.3, SD=16.4). The average dissimilarity index, however, was less than 50%, which can be interpreted as Latinas in this sample living in counties where about 47.3% (SD=9.7) of Latinos (or white people) would need to move to achieve a uniform population distribution by race. The ratio of income inequality (comparing household income at the 80th percentile to income at the 20th percentile) was 4.9 (SD=0.7) and ranged from 3.08 to 9.21. A higher inequality ratio denotes greater inequity (University of Wisconsin Population Health Institute, 2022). The proportion of the county population to primary care physicians was 1462.9 (SD=508.5) to 1, and the ratio of the county population to other primary care providers was 1447.3 (SD=490.9) to 1. The mean county public health expenditure was estimated at $760 million (SD=$1,400 million).

Most people in this sample lived in counties with close to three immigration enforcement policies (M=2.8, SD=2.5) and where about 37.2% (SD=13.2) of residents voted for the Republican candidate in the 2016 election. The state population change since 2000 was greater than twenty percent (M=21.6, SD=11.6) and the rural population was less than 5% (M=4.5, SD=6.4). In each state, the mean Hispanic population was about 31.1% (SD=10.4), the average share of the foreign-born population was close to 20% (M=19.8, SD=6.0), and the undocumented immigrant population was, on average, over a quarter (M=27.4, SD=6.6). The mean county population density was about 2661.1 persons (SD=3490.4) per square mile and ranged from 9.23 and 20056.9.

Table 6.1. Characteristics of the study sample, N=1,084,867

Variables	n (%)
Preterm birth	
37+ weeks	995,000 (91.7)
Under 37 weeks	89,867 (8.3)
Ethnic enclave	
Connected disadvantage	169,558 (15.6)
Connected advantage	60,738 (5.6)
Concentrated disadvantage	287,934 (26.5)
Concentrated advantage	316,047 (29.1)
Disconnected disadvantage	53,067 (4.9)
Disconnected advantage	41,485 (3.8)
Detached disadvantage	10,325 (1.0)

Variables	n (%)
Anchored disadvantage	14,325 (1.3)
Anchored advantage	131,388 (12.1)
Individual level factors	
Nativity	
U.S. Born (ref)	551,475 (50.8)
Foreign born	533,392 (49.2)
Latino origin	
Mexican	762,291 (70.3)
Puerto Rican	87,419 (8.1)
Cuban	36,460 (3.4)
Central/South American	198,697 (18.3)
Maternal age[a]	28.2 (6.1)
Marital status	
Married	353,046 (32.5)
Unmarried	387,855 (35.8)
Missing	343,966 (31.7)
Education	
8th grade or less (ref)	93,187 (8.6)
Some high school	197,678 (18.2)
High school grad/GED	352,820 (32.5)
Some college/Associates	280,297 (25.8)
College +	147,275 (13.6)
Missing	13,610 (1.3)
Insurance	
Medicaid (ref)	651,929 (60.1)
Private insurance	317,824 (29.3)
Self-pay	65,789 (6.1)
Other	45,761 (4.2)
Missing	3,564 (0.3)
No. of live births[a]	2.3 (1.3)
PTB risk factors	
No	957,802 (88.3)
Yes	127,065 (11.7)
Smoked during pregnancy	
No	1,073,359 (98.9)
Yes	11,508 (1.1)
Prenatal care	
Early initiation	780,820 (72.0)
2nd tri/Late/no initiation	304,047 (28.0)
Community-level factors	
Social associations	6.5 (2.0)
Structural factors	
Region	
Northeast	131,340 (12.1)
Midwest	63,932 (5.9)
South	408,311 (37.6)
West	481,284 (44.4)
Border region	
US Non-Border Region	980,038 (90.3)
US-Mexico Border Region	104,829 (9.7)

Variables	n (%)
Driver's license	
No	595,394 (54.9)
Yes	489,473 (45.1)
Five-year waiting period	
No	546,810 (50.4)
Yes	538,057 (49.6)
Medicaid expansion	
Not adopted	402,465 (37.1)
Adopted	682,402 (62.9)
Health insurance for undocumented children	
No	603,115 (55.6)
Yes	481,752 (44.4)
Isolation index[a]	51.3 (16.4)
Dissimilarity index[a]	47.3 (9.7)
Income inequality[a]	4.9 (0.7)
Primary care physicians[a]	1462.9 (508.5)
Other primary care[a]	1447.3 (490.9)
Public health expenditure (million $)[a]	760 (1400)
Immigrant integration policies (0-4)[a]	2.0 (1.7)
Immigration enforcement score (0-7)[a]	2.8 (2.5)
%County population voting Republican (2016)[a]	37.2 (13.2)
%Population change since 2000[a]	21.6 (11.6)
%Rural population in county[a]	4.5 (6.4)
%State Hispanic pop[a]	31.1 (10.4)
%State foreign-born pop[a]	19.8 (6.0)
State undocumented immigrant population[a]	27.4 (6.6)
Population density[a]	2661.1 (3490.4)

Note. [a]M mean, SD standard deviation.

6.1.2 Bivariate analyses

6.1.2.1 Preterm births

Table 6.2 includes the characteristics of the study sample by full term (n=995,000) and premature births (n=89,867). There were significant differences between ethnic enclaves and PTB (p<.001). The rate of PTB was highest (9.7%) in detached disadvantage enclaves (i.e., large Latino concentration, small foreign-born population, high disadvantage, urban areas) and lowest (7.3%) in connected advantage enclaves (i.e., large Latino concentration, large foreign-born population, low disadvantage, suburban areas). Premature births among foreign-born women (8.1%) were significantly (p<.001) lower than that of their U.S. born counterparts (8.5%). The rate of PTB among Latina subgroups were also significantly different (p<.001). Whereas Latina mothers of Puerto Rican origin had the highest rate of PTB (9.6%), Cuban women had

the lowest PTB rate (7.5%), followed by Central/South American women (7.9%) and women of Mexican origin (8.3%). There were also significant age ($p<.001$), marital status ($p<.001$), education ($p<.001$), insurance ($p<.001$), parity ($p<.001$), PTB risk factor ($p<.001$), prenatal care ($p<.001$), and smoking ($p<.001$) differences between mothers who experienced full-term and premature births.

The PTB rate was significantly lower in Western states (7.7%) and higher in the Northeastern (8.5%), Midwestern (8.8%), and Southern states (8.8%). The occurrence of premature births was also significantly lower in non-Border counties (8.2% vs. 8.7%). Compared to the rate of PTB among mothers in states that barred the issuance of driver's licenses to those who are undocumented, the rate of PTB among Latina mothers in states that issued driver's licenses to undocumented immigrants was significantly lower (7.9% vs. 8.6%). Similarly, Latina mothers in states that expanded Medicaid (7.9% vs. 8.9%), covered lawful immigrant pregnant women without a five-year wait for eligibility (7.8% vs. 8.7%), or extended health insurance to undocumented children (7.8% vs. 8.7%) experienced a significantly lower rate of PTB.

Though statistically significant, there were no quantitative differences in the number of social associations by full term ($M=6.5$, $SD=2.0$) and premature ($M=6.5$, $SD=2.0$) birth. Latina mothers who experienced premature births were significantly more likely to live in counties with slightly more exposure to other Latinos (isolation index, $M=51.3$, $SD=16.3$ vs. $M=51.8$, $SD=16.7$) and marginally greater unevenness between Latinos and white people (dissimilarity index, $M=47.2$, $SD=9.7$ vs. $M=47.4$, $SD=9.6$). Those who experienced premature births were also more likely to live in counties with significantly greater income inequality ($M=4.9$, $SD=0.7$ vs. $M=5.0$, $SD=0.7$), a lower ratio of residents to primary care physicians ($M=1463.1$, $SD=509.9$ vs. $M=1460.1$, $SD=493.6$), a significantly lower ratio of residents to other primary care providers ($M=1449.7$, $SD=492.1$ vs. $M=1421.5$, $SD=476.6$), and significantly lower public health expenditures ($M=\$760$ million, $SD=\$1,400$ million vs. $M=\$740$ million, $SD=\$1,400$ million). These mothers were also significantly more likely to live in counties with fewer immigrant

integration policies (M=2.0, SD=1.7 vs. M=1.9, SD=1.7), and slightly more immigration enforcement policies (M=2.8, SD=2.5 vs. M=2.9, SD=2.5).

There were no significant differences in the proportion of the county electorate voting for the 2016 Republican candidate when comparing the rate of full term (M=37.2, SD=13.2) and premature (M=37.2, SD=13.2) births. However, Latina mothers who experienced premature births were significantly more likely to reside in states that had experienced a 22% (SD=11.8) average population change since 2000. These mothers were also likely to live in counties with a significantly smaller rural (M=4.5, SD=6.4 vs. M=4.4, SD=6.2) and state foreign-born (M=19.8, SD=6.0 vs. M=19.5, SD=5.9) population. Mothers who had experienced a preterm birth and those who had not were both equally likely to live in states with a similar share of Hispanic people (M=31.1, SD=10.4 vs. M=31.1, SD=10.4). However, Latina mothers who experienced premature births were significantly more likely to live in states with a larger undocumented population (M=27.4, SD=6.6 vs. M=27.8, SD=6.7) and significantly lower population density (M=2667.4, SD=392.8 vs. M=2591.4, SD=3463.7).

Table 6.2. Distribution of study variables by preterm births, N=1,084,867

Variables	**Full term** n (%)	**Preterm** n (%)	**p-value**
Sample	995,000 (91.5)	89,867 (8.3)	
Ethnic enclave			0.00
Connected disadvantage	155,104 (91.5)	14,454 (8.5)	
Connected advantage	56,279 (92.7)	4,459 (7.3)	
Concentrated disadvantage	262,472 (91.2)	25,462 (8.8)	
Concentrated advantage	290,546 (91.9)	25,501 (8.1)	
Disconnected disadvantage	48,461 (91.3)	4,606 (8.7)	
Disconnected advantage	38,203 (92.1)	3,282 (7.9)	
Detached disadvantage	9,320 (90.3)	1,005 (9.7)	
Anchored disadvantage	13,231 (92.4)	1,094 (7.6)	
Anchored advantage	121,384 (92.4)	10,004 (7.6)	
Individual level factors			
Nativity status			0.00
U.S. Born	504,622 (91.5)	46,853 (8.5)	
Foreign born	490,378 (91.9)	43,014 (8.1)	
Latino origin			0.00
Mexican	699,231 (91.7)	63,060 (8.3)	
Puerto Rican	79,003 (90.4)	8,416 (9.6)	
Cuban	33,733 (92.5)	2,727 (7.5)	
Central/South American	183,033 (92.1)	15,664 (7.9)	

Variables	**Full term** n (%)	**Preterm** n (%)	**p-value**
Maternal age	28.1 (6.1)	29.0 (6.5)	0.00
Marital status[a]			0.00
Married	323,691 (91.7)	29,355 (8.3)	
Unmarried	353,327 (91.1)	34,528 (8.9)	
Missing	317,982 (92.4)	25,984 (7.6)	
Education			0.00
8th grade or less	85,083 (91.3)	8,104 (8.7)	
Some high school	179,751 (90.9)	17,927 (9.1)	
High school grad/GED	323,434 (91.7)	29,386 (8.3)	
Some college/Associates	257,320 (91.8)	22,977 (8.2)	
College +	136,974 (93.0)	10,301 (7.0)	
Missing	12,438 (91.4)	1,172 (8.6)	
Insurance			0.00
Medicaid	597,399 (91.6)	54,530 (8.4)	
Private insurance	292,925 (92.2)	24,899 (7.8)	
Self-pay	60,030 (91.2)	5,759 (8.8)	
Other	41,463 (90.6)	4,298 (9.4)	
Missing	3,183 (89.3)	381 (10.7)	
Live birth order[a]	2.3 (1.3)	2.4 (1.5)	0.00
Preterm birth risk factors			0.00
No	888,546 (92.8)	69,256 (7.2)	
Yes	106,454 (83.8)	20,611 (16.2)	
Smoked during pregnancy			0.00
No	985,126 (91.8)	88,233 (8.2)	
Yes	9,874 (85.8)	1,634 (14.2)	
Prenatal care initiation			0.00
Early initiation	716,842 (91.8)	63,978 (8.2)	
2nd tri/late/no initiation	278,158 (91.5)	25,889 (8.5)	
Community-level factors			
Social associations	6.5 (2.0)	6.5 (2.0)	0.02
Structural factors			
Region			0.00
Northeast	120,191 (91.5)	11,149 (8.5)	
Midwest	58,315 (91.2)	5,617 (8.8)	
South	372,308 (91.2)	36,003 (8.8)	
West	444,186 (92.3)	37,098 (7.7)	
Border region			0.00
US Non-Border Region	899,313 (91.8)	80,725 (8.2)	
US-Mexico Border Region	95,687 (91.3)	9,142 (8.7)	
Driver's license			0.00
No	543,983 (91.4)	51,411 (8.6)	
Yes	451,017 (92.1)	38,456 (7.9)	
Five-year waiting period			0.00
No	499,052 (91.3)	47,758 (8.7)	
Yes	495,948 (92.2)	42,109 (7.8)	
Medicaid expansion			0.00
Not adopted	366,744 (91.1)	35,721 (8.9)	
Adopted	628,256 (92.1)	54,146 (7.9)	
Health insurance for undocumented children			0.00

Variables	**Full term** n (%)	**Preterm** n (%)	**p-value**
No	550,854 (91.3)	52,261 (8.7)	
Yes	444,146 (92.2)	37,606 (7.8)	
Isolation index[a]	51.3 (16.3)	51.8 (16.7)	0.00
Dissimilarity index[a]	47.2 (9.7)	47.4 (9.6)	0.00
Income inequality[a]	4.9 (0.7)	5.0 (0.7)	0.00
Primary care physicians[a]	1463.1 (509.9)	1460.1 (493.6)	0.09
Other primary care[a]	1449.7 (492.1)	1421.5 (476.6)	0.00
Public health expenditure (million $)[a]	760 (1400)	740 (1400)	0.00
Immigrant integration policies (0-4)[a]	2.0 (1.7)	1.9 (1.7)	0.00
Immigration enforcement score (0-7)[a]	2.8 (2.5)	2.9 (2.5)	0.00
%County population voting Republican (2016)[a]	37.2 (13.2)	37.1 (13.2)	0.07
%Population change since 2000[a]	21.6 (11.6)	22.0 (11.8)	0.00
%Rural population in county[a]	4.5 (6.4)	4.4 (6.2)	0.00
%State Hispanic pop[a]	31.1 (10.4)	31.1 (10.4)	0.42
%State foreign-born pop[a]	19.8 (6.0)	19.5 (5.9)	0.00
State undocumented immigrant population[a]	27.4 (6.6)	27.8 (6.7)	0.00
Population density[a]	2667.4 (3492.8)	2591.4 (3463.7)	0.00

Note. [a]M mean, SD standard deviation.

6.1.2.2 Ethnic enclaves

Tables 6.3 and 6.4 present the characteristics of the study sample by the ethnic enclave classification and highlight differences between enclave types. While there were statistically significant differences between enclaves on all of the individual-, community-, and structural variables, there were some similarities between places. Over 30% of the population in each enclave was foreign born, and Mexican-origin mothers were generally more likely to live in each type of enclave. While individual-level factors, like age and number of previous live births, were similar in each setting, there were notable differences across enclaves when comparing the structural indicators. No enclave consistently provided the best context for residents. For instance, although connected advantaged enclaves had more immigrant integration policies (M=2.9, SD=1.5) and fewer immigration enforcement policies (M=1.6, SD=2.2), these enclaves had the largest ratio of income inequality (M=5.1, SD=0.9). This section summarizes the most disparate results for each variable.

As highlighted in section 6.1.2.1, there were significant differences in the rate of PTB across the different enclaves (p<.001); mothers in detached enclaves had the highest PTB rate

(9.7%) and those in connected advantage enclaves (7.3%) had the lowest rate of PTB. The foreign-born population in almost all enclaves was above 40%. While anchored advantage enclaves had the largest share of foreign-born residents (61.9%), the share of foreign-born residents in disconnected disadvantage enclaves was the smallest (37.9%). Mexican individuals represented the largest proportion of the population in all enclaves except anchored advantage enclaves (40.9%), which was primary home to Central/South American Latina mothers (42.8%).

Maternal age was highest in anchored advantage enclaves (M=28.8, SD=6.2) and lowest in disconnected disadvantage enclaves (M=26.9, SD=5.9). Although the largest share (46.2%) of married individuals lived in detached disadvantage enclaves, the lowest proportion of married mothers (20.1%) lived in concentrated advantage enclaves. Across all enclaves, there were more high school and GED graduates. In each setting, more than 50% of births were covered by Medicaid.

On average, there was a fairly equal number of previous live births across all enclave types, though this figure was the highest in detached disadvantage enclaves (M=2.5, SD=1.5). Whereas Latina mothers in anchored disadvantage enclaves (14.0%) were more likely to report one or more PTB risk factors (i.e., gestational diabetes, hypertension, eclampsia, previous PTB), those in connected disadvantage areas (9.2%) were less likely to report these risk factors. Smoking during pregnancy was highest in disconnected disadvantage enclaves (3.4%) and lowest in concentrated advantage enclaves (0.7%). Despite significant differences between enclaves, 20%-33% of mothers entered prenatal care later in their pregnancy.

The majority of deliveries were among mothers who lived in ethnic enclaves in the Western (44.4%) and Southern (37.6%) regions of the U.S. However, less than 10% of births occurred among mothers who lived in enclaves that border Mexico. These deliveries occurred only among mothers who lived in connected disadvantage (43.0%), concentrated advantage (9.9%), and disconnected disadvantage (1.2%) enclaves. No other enclave types are located on the U.S.-Mexico border.

Detached disadvantage enclaves represented a small share of the sample and were generally not in states that provided drivers licenses to undocumented immigrants, adopted Medicaid expansion, or provided health insurance to undocumented children. Latina mothers in connected advantage enclaves (66.2%) were more likely to live in states that provided drivers licenses to undocumented people. Those in concentrated advantage enclaves were more likely to live in states that did not have a five-year waiting period for lawful immigrants to access health insurance (72.3%), adopted Medicaid expansion (85.3%), and provided health insurance to undocumented children (66.7%).

The number of social associations was lowest in connected disadvantage (M=5.1, SD=1.4) enclaves and highest in disconnected (M=9.7, SD=1.0) enclaves. Connected disadvantage areas had the highest isolation index scores and Latina mothers in these enclaves were more likely to be exposed to other Latino people (M=69.7, SD=15.7). The dissimilarity index was lowest in disconnected advantage areas (M=34.9, SD=9.4), which indicates that about 35% of Latinos or white people would need to move to make the area an even distribution of both groups. This figure was highest in detached enclaves, where over 50% of Latinos would need to move to ensure an even population distribution by race (M=53.7, SD=0.4).

Income inequality was highest in concentrated disadvantage (M=5.1, SD=0.6) and concentrated advantage (M=5.1, SD=0.9) enclaves and lowest in connected advantage enclaves (M=4.5, SD=0.5). On average, the ratio of the population to primary care physicians was lowest in anchored advantage enclaves (M=1135.6, SD=333.6) and highest in connected disadvantage areas (M=2001.2, SD=582.1). The ratio of the population to other primary care providers was lowest in detached disadvantage enclaves (M=690.9, SD=84.5) and highest in connected advantage areas (M=1645.0, SD=620.7). Public health expenditure was highest in concentrated advantage enclaves (M=$760 million, SD=$1,500 million) and lowest in disconnected disadvantage enclaves (M=$30 million, SD=$20 million).

There were more immigrant integration policies in concentrated advantage enclaves (M=2.9, SD=1.5) than in all other areas; detached disadvantage enclaves had the fewest integration policies (M=0.4, SD=0.5). Concentrated advantage enclaves had the fewest number of immigration enforcement policies (M=1.6, SD=2.2). Disconnected disadvantage enclaves had the most immigration enforcement policies (M=4.5, SD=1.9) and the largest proportion of people voting for the Republican candidate in the 2016 election (M=54.8, SD=12.0). Concentrated advantage enclaves had the lowest share of Republican voters in the 2016 election (M=31.0, SD=12.6). Detached disadvantage enclaves experienced the smallest state population change since 2000 (M=11.0, SD=2.9); concentrated disadvantage enclaves experienced the largest of such changes (M=24.9, SD=13.3).

Concentrated advantage areas had the smallest proportion of rural residents (M=1.4, SD=1.5) while disconnected disadvantage enclaves had the largest (M=16.5, SD=10.9). Detached disadvantage enclaves had the smallest state Hispanic (M=8.8, SD=1.8) and foreign-born (M=5.6, SD=0.5) population. Concentrated advantage areas had the largest proportion of the state foreign born population (M=22.4, SD=5.9). Connected disadvantage had the largest representation of the Hispanic population in the state areas (M=34.4, SD=8.1). Although the state share of the undocumented population was over 20% in each enclave, detached disadvantage areas had the greatest proportion of the undocumented population (M=31.4, SD=6.5). Population density was largest in connected disadvantage enclaves (M=5348.0, SD=6165.3) and the smallest in detached disadvantage enclaves (M=507.9, SD=231.4)

Table 6.3. Distribution of study variables by enclave type, N=1,084,867

Variables	Connected		Concentrated		Disconnected		Detached	Anchored		pvalue
	Dis.[a] %	Adv.[b] %	Dis.[a] %	Adv.[b] %	Dis.[a] %	Adv.[b] %	Dis.[a] %	Dis.[a] %	Adv.[b] %	
Preterm birth										***
37+ weeks	91.5	92.7	91.2	91.9	91.3	92.1	90.3	92.4	92.4	
Under 37 weeks	8.5	7.3	8.8	8.1	8.7	7.9	9.7	7.6	7.6	
Individual level factors										
Nativity status										***
U.S. Born	56.8	43.9	49.0	53.9	62.1	54.4	48.2	44.8	38.1	
Foreign born	43.2	56.1	51.0	46.1	37.9	45.6	51.8	55.2	61.9	
Latino origin										***
Mexican	92.4	70.1	61.3	77.7	76.4	77.6	75.3	47.8	40.9	
Puerto Rican	2.8	4.2	10.4	5.0	16.5	8.8	14.3	23.0	13.1	
Cuban	0.4	7.5	7.8	0.9	1.3	0.9	0.7	2.7	3.3	
Central/South American	4.4	18.2	20.4	16.4	5.8	12.7	9.8	26.4	42.8	
Maternal age, M (SD)	27.5	28.5	28.3	28.6	26.9	27.5	27.5	27.4	28.8	***
Marital status										***
Married	25.3	29.4	41.4	20.1	44.7	45.8	46.2	42.0	42.5	
Unmarried	27.3	23.7	47.6	21.8	52.8	43.8	53.8	58.0	46.6	
Missing	47.5	46.9	11.0	58.0	2.5	10.3	0.0	0.0	10.9	
Education										***
8th grade or less	7.7	12.6	6.4	8.1	7.3	8.8	11.0	11.8	13.9	
Some high school	18.6	16.4	19.2	17.2	20.3	19.5	21.9	19.2	17.1	
High school grad/GED	33.4	29.0	34.4	31.6	34.4	34.4	34.3	34.8	29.2	
Some college/Associates	28.0	26.0	24.1	27.0	28.4	26.2	21.8	24.7	23.3	
College +	10.7	14.8	14.7	14.8	9.3	10.2	10.7	8.2	14.9	
Missing	1.5	1.2	1.2	1.3	0.3	0.9	0.3	1.3	1.5	
Insurance										***
Medicaid	63.5	59.4	58.8	59.6	57.6	63.8	76.7	65.9	57.9	
Private insurance	24.1	31.4	28.8	32.2	25.6	27.7	20.8	23.3	32.5	
Self-pay	7.6	6.4	6.5	4.6	8.8	3.5	0.9	5.0	6.8	
Other	4.5	2.7	5.5	3.3	7.8	4.3	1.2	5.3	2.5	
Missing	0.3	0.1	0.4	0.3	0.3	0.6	0.3	0.5	0.4	
Live birth order, M (SD)	2.4	2.2	2.2	2.2	2.4	2.3	2.5	2.4	2.2	***
Preterm birth risk factors										***
No	90.8	86.9	88.0	88.2	86.9	86.9	88.4	86.0	87.7	
Yes	9.2	13.1	12.0	11.8	13.1	13.1	11.6	14.0	12.3	
Smoked during pregnancy										***
No	99.1	99.2	99.2	99.3	96.6	97.7	96.7	96.8	99.0	

Variables	Connected		Concentrated		Disconnected		Detached	Anchored		
	Dis.[a] %	Adv.[b] %	Dis.[a] %	Adv.[b] %	Dis.[a] %	Adv.[b] %	Dis.[a] %	Dis.[a] %	Adv.[b] %	pvalue
Yes	0.9	0.8	0.8	0.7	3.4	2.3	3.3	3.2	1.0	
Prenatal care initiation										***
Early initiation	71.2	72.0	68.3	78.3	66.9	69.4	69.3	68.9	69.3	
2nd tri/Late/no initiation	28.8	28.0	31.7	21.7	33.1	30.6	30.7	31.1	30.7	
Community-level factors										
Social associations, M (SD)	5.1	6.5	5.8	6.5	9.1	7.9	9.7	9.4	7.5	***
Structural factors										
Region										***
Northeast	1.6	0.0	10.0	12.0	13.8	12.2	0.0	30.2	34.5	
Midwest	0.6	9.1	12.1	0.0	12.9	0.0	43.0	4.1	8.2	
South	38.2	33.8	60.4	13.1	48.9	40.1	57.0	40.7	40.6	
West	59.6	57.1	17.6	74.9	24.4	47.7	0.0	24.9	16.7	
Border region										***
US Non-Border Region	57.0	100.0	100.0	90.1	98.8	100.0	100.0	100.0	100.0	
US-Mexico Border Region	43.0	0.0	0.0	9.9	1.2	0.0	0.0	0.0	0.0	
Driver's license										***
No	49.2	33.8	70.4	36.7	84.7	54.7	100.0	97.1	61.5	
Yes	50.8	66.2	29.6	63.3	15.3	45.3	0.0	2.9	38.5	
Five-year waiting period										***
No	47.6	42.9	80.1	27.7	69.4	39.0	57.0	63.4	41.0	
Yes	52.4	57.1	19.9	72.3	30.6	61.0	43.0	36.6	59.0	
Medicaid expansion										***
Not adopted	38.8	33.8	60.4	14.7	54.6	38.0	100.0	26.1	28.2	
Adopted	61.2	66.2	39.6	85.3	45.4	62.0	0.0	73.9	71.8	
Health insurance for undoc. children										***
No	50.5	42.0	71.6	33.3	90.0	74.5	100.0	78.0	61.1	
Yes	49.5	58.0	28.4	66.7	10.0	25.5	0.0	22.0	38.9	

Note. [a]Dis., Disadvantage; [b]Adv., Advantage

Table 6.4. Summary statistics of structural factors by enclave type, N=1,084,867

	Connected		**Concentrated**		**Disconnected**		**Detached**	**Anchored**		
Var.[c]	Dis.[a] M (SD)	Adv.[b] M (SD)	Dis.[a] M (SD)	Adv.[b] M (SD)	Dis.[a] M (SD)	Adv.[b] M (SD)	Dis.[a] M (SD)	Dis.a M (SD)	Adv.b M (SD)	pvalue
1	69.7 (15.7)	52.0 (12.6)	55.2 (12.3)	51.3 (11.3)	38.1 (13.9)	30.0 (7.8)	40.2 (0.8)	33.5 (9.0)	33.4 (5.2)	***
2	41.7 (6.3)	44.7 (11.1)	49.0 (8.1)	53.4 (7.4)	38.8 (11.2)	34.9 (9.4)	53.7 (0.4)	43.9 (9.7)	44.2 (8.1)	***
3	4.9 (0.5)	4.5 (0.5)	5.1 (0.6)	5.1 (0.9)	4.7 (0.5)	4.6 (0.6)	4.8 (0.2)	4.6 (0.4)	4.7 (0.6)	***
4	2001.2 (582.1)	1551.1 (508.6)	1470.7 (348.6)	1264.2 (259.3)	1646.8 (901.7)	1453.4 (508.0)	1259.9 (90.7)	1436.7 (539.1)	1135.6 (333.6)	***
5	1634.8 (493.4)	1645.0 (620.7)	1300.2 (358.7)	1533.0 (504.8)	1166.9 (484.4)	1342.4 (470.5)	690.9 (84.5)	1140.1 (426.7)	1469.7 (444.9)	***
6	760 (1500)	210 (240)	320 (260)	1800 (1900)	30 (20)	54 (45)	200 (220)	43 (34)	120 (98)	***
7	2.1 (1.9)	2.5 (1.8)	1.2 (1.5)	2.9 (1.5)	1.0 (1.3)	1.9 (1.6)	0.4 (0.5)	1.4 (0.8)	2.1 (1.4)	***
8	2.6 (2.6)	2.5 (2.7)	3.5 (2.3)	1.6 (2.2)	4.5 (1.9)	3.6 (2.5)	4.1 (1.0)	3.4 (1.9)	3.3 (2.2)	***
9	40.3 (11.7)	36.3 (12.0)	34.9 (9.2)	31.0 (12.6)	54.8 (12.0)	52.7 (12.7)	41.8 (11.4)	49.2 (4.9)	39.9 (12.9)	***
10	23.9 (9.2)	20.2 (8.5)	24.9 (13.3)	19.8 (10.1)	23.2 (11.5)	24.7 (10.4)	11.0 (2.9)	15.5 (12.0)	16.1 (12.3)	***
11	8.8 (5.8)	5.9 (6.1)	1.6 (1.7)	1.4 (1.5)	16.5 (10.9)	14.8 (10.2)	3.7 (3.0)	8.0 (4.6)	3.9 (4.7)	***
12	36.4 (7.0)	31.3 (8.8)	30.7 (9.3)	34.4 (8.1)	28.5 (14.0)	26.5 (11.8)	8.8 (1.8)	15.6 (10.8)	22.9 (10.1)	***
13	21.2 (5.8)	21.7 (5.7)	18.8 (4.0)	22.4 (5.9)	14.2 (5.5)	15.4 (6.2)	5.6 (0.5)	11.6 (6.3)	18.9 (4.6)	***
14	29.3 (5.7)	23.9 (5.3)	27.7 (7.9)	26.8 (4.8)	30.4 (7.4)	31.4 (6.5)	33.4 (6.7)	26.4 (7.3)	24.2 (5.8)	***
15	5348.0 (6165.3)	1683.1 (880.5)	2118.3 (2313.5)	3194.5 (2840.9)	1470.5 (2299.1)	1249.0 (1268.4)	507.9 (231.4)	620.0 (355.4)	870.8 (1032.7)	***

Note. M, mean, SD, standard deviation;1-Isolation index; 2-Dissimilarity index; 3-Income inequality; 4-Primary care physicians; 5-Other primary care; 6-Public health expenditure (million $); 7-Immigrant integration policies (0-4); 8-Immigration enforcement score (0-7); 9-%County population voting Republican (2016); 10-%Population change since 2000; 11-%Rural population in county; 12-%State Hispanic pop; 13-%State foreign-born pop; 14-State undocumented immigrant population; 15-Population density; [a]Dis., Disadvantage; [b]Adv., Advantage; [c]Variables

6.1.3 Bivariate associations

Table 6.5 presents results examining the unadjusted bivariate associations between individual study variables and preterm birth. In the unadjusted model, Latina mothers in detached disadvantage enclaves experience the highest odds of preterm birth (OR=1.31, 95% CI: 1.22,1.40), compared to their counterparts in anchored advantage enclaves. Compared to anchored advantage enclaves, those in connected advantage enclaves experience the lowest odds of PTB (OR=0.96, 95% CI: 0.93,1.00). However, this finding changes in the fully adjusted model (see section 6.1.4). Nativity was also associated with PTB, as foreign-born mothers experienced significant lower odds of this outcome (OR=0.94, 95% CI: 0.93,0.96).

Compared to Latina mothers of Mexican origin, those of Puerto Rican descent experienced significant higher odds of PTB; Cuban (OR=0.90, 95% CI: 0.86,0.93) and Central and South American (OR=0.95, 95% CI: 0.93,0.97) mothers experienced lower odds of this outcome. Older age (OR=1.02, 95% CI: 1.02,1.02), unmarried status (OR=1.08, 95% CI: 1.06,1.10), and only completing some high school (OR=1.05, 95% CI: 1.02,1.08) increased the likelihood of PTB. Completing high school or higher and paying for delivery with private insurance was associated with lower odds of PTB. The number of previous births was positively associated with preterm births (OR=1.09, 95% CI: 1.08,1.09). Several other factors also contributed to Latina mothers' higher likelihood of giving birth prematurely. Reporting at least one PTB risk factor (i.e., gestational diabetes, hypertension, eclampsia, previous PTB) (OR=2.48, 95% CI: 2.44,2.53), smoking (OR=1.85, 95% CI: 1.75,1.95), and enrolling in prenatal care at a later stage (OR=1.04, 95% CI: 1.03,1.06) were all associated with a significant increase in the odds of PTB.

A unit increase in the number of social associations was associated with a marginally significant increase in the odds of PTB (OR=1.03, 95% CI: 1.00,1.05). The isolation index (a measure of exposure to other Latinos in the enclave) was associated with a significantly lower odds of PTB (OR=0.97, 95% CI: 0.96,0.98), whereas, the dissimilarity index (OR=1.24, 95% CI:

1.15,1.33) and income inequality (OR=1.37, 95% CI: 1.29,1.45) were associated with a significantly higher odds of giving birth prematurely. Although an increase in the ratio of the county population to primary care physicians was not associated with PTB (OR=1.00, 95% CI: 0.97,1.02), the ratio of the county population to other primary care providers was associated with a lower likelihood of PTB (OR=0.85, 95% CI: 0.84,0.87). An increase in the county public health expenditure was significant, but did not result in significant effects on the odds of giving birth prematurely (OR=1.00, 95% CI: 0.99,1.00).

Living in a state without a five-year waiting period for lawful immigrants to access insurance was associated with lower odds of PTB (OR=0.89, 95% CI: 0.88,0.90). Having more county-level immigration enforcement policies resulted in significantly higher odds of PTB (OR=1.02, 95% CI: 1.02,1.02). Although the proportion of county voters who elected the Republican candidate in the 2016 election (OR=0.98, 95% CI: 0.96,1.00), state population change from 2000-2018 (OR=1.02, 95% CI: 1.01,1.03), and the proportion of the undocumented immigrant population in the state (OR=1.27, 95% CI: 1.23,1.30) were associated with higher odds of PTB, an increase in the rural population (OR=0.98, 95% CI: 0.97,0.99) and population density (OR=0.98, 95% CI: 0.98,0.99) were associated with lower odds of PTB.

Table 6.5. Unadjusted association between variables and preterm births, N=1,084,867

Variables	OR	95% CI
Ethnic enclave		
Connected disadvantage	1.13***	1.10,1.16
Connected advantage	0.96*	0.93,1.00
Concentrated disadvantage	1.18***	1.15,1.21
Concentrated advantage	1.06***	1.04,1.09
Disconnected disadvantage	1.15***	1.11,1.20
Disconnected advantage	1.04*	1.00,1.09
Detached disadvantage	1.31***	1.22,1.40
Anchored disadvantage	1.00	0.94,1.07
Anchored advantage (ref)	1.00	1.00,1.00
Individual level factors		
Nativity		
U.S. Born (ref)	1.00	1.00,1.00
Foreign born	0.94***	0.93,0.96
Latino origin		
Mexican (ref)	1.00	1.00,1.00
Puerto Rican	1.18***	1.15,1.21

Variables	OR	95% CI
Cuban	0.90***	0.86,0.93
Central/South American	0.95***	0.93,0.97
Age		
Maternal age (cont.)	1.02***	1.02,1.02
Marital status		
Married (ref)	1.00	1.00,1.00
Unmarried	1.08***	1.06,1.10
Missing	0.90***	0.89,0.92
Education		
8th grade or less (ref)	1.00	1.00,1.00
Some high school	1.05**	1.02,1.08
High school grad/GED	0.95***	0.93,0.98
Some college/Associates	0.94***	0.91,0.96
College +	0.79***	0.77,0.81
Missing	0.99	0.93,1.05
Insurance		
Medicaid (ref)	1.00	1.00,1.00
Private insurance	0.93***	0.92,0.95
Self-pay	1.05***	1.02,1.08
Other	1.14***	1.10,1.17
Missing	1.31***	1.18,1.46
No. of live births		
Live birth order	1.09***	1.08,1.09
Risk factors		
No (ref)	1.00	1.00,1.00
Yes	2.48***	2.44,2.53
Smoking		
No (ref)	1.00	1.00,1.00
Yes	1.85***	1.75,1.95
Prenatal care		
Early initiation (ref)	1.00	1.00,1.00
2nd tri/Late/no initiation	1.04***	1.03,1.06
Community-level factors		
Social associations (log)	1.03+	1.00,1.05
Structural factors		
Isolation index	0.97***	0.96,0.98
Dissimilarity index	1.24***	1.15,1.33
Income inequality (log)	1.37***	1.29,1.45
Primary care physicians (log)	1.00	0.97,1.02
Other primary care (log)	0.85***	0.84,0.87
Public health expenditure (log)	1.00*	0.99,1.00
Waiting period		
No (ref)	1.00	1.00,1.00
Yes	0.89***	0.88,0.90
Immigration enforcement score	1.02***	1.02,1.02
% of county pop. voting Republican, 2016 (log)	0.98*	0.96,1.00
% State population change, 2000-2018 (log)	1.02***	1.01,1.03
% Rural population (log)	0.98***	0.97,0.99
% of undocumented pop. in state (log)	1.27***	1.23,1.30
Population density (log)	0.98***	0.98,0.99

Variables	OR	95% CI

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

6.1.4 Multivariate analyses

This section describes the results of the multivariate analyses, which adjust for individual-, community-, and structural-level variables.

6.1.4.1 Ethnic enclaves and preterm births

Table 6.6 presents the results of the multivariate logistic regression models predicting preterm birth and Figure 6.1 illustrates these results. Relative to Latina mothers in anchored advantage enclaves, those in all other areas, except anchored disadvantage enclaves (aOR=0.99, 95% CI: 0.92,1.06), reported significantly higher odds of PTB, net of all covariates.

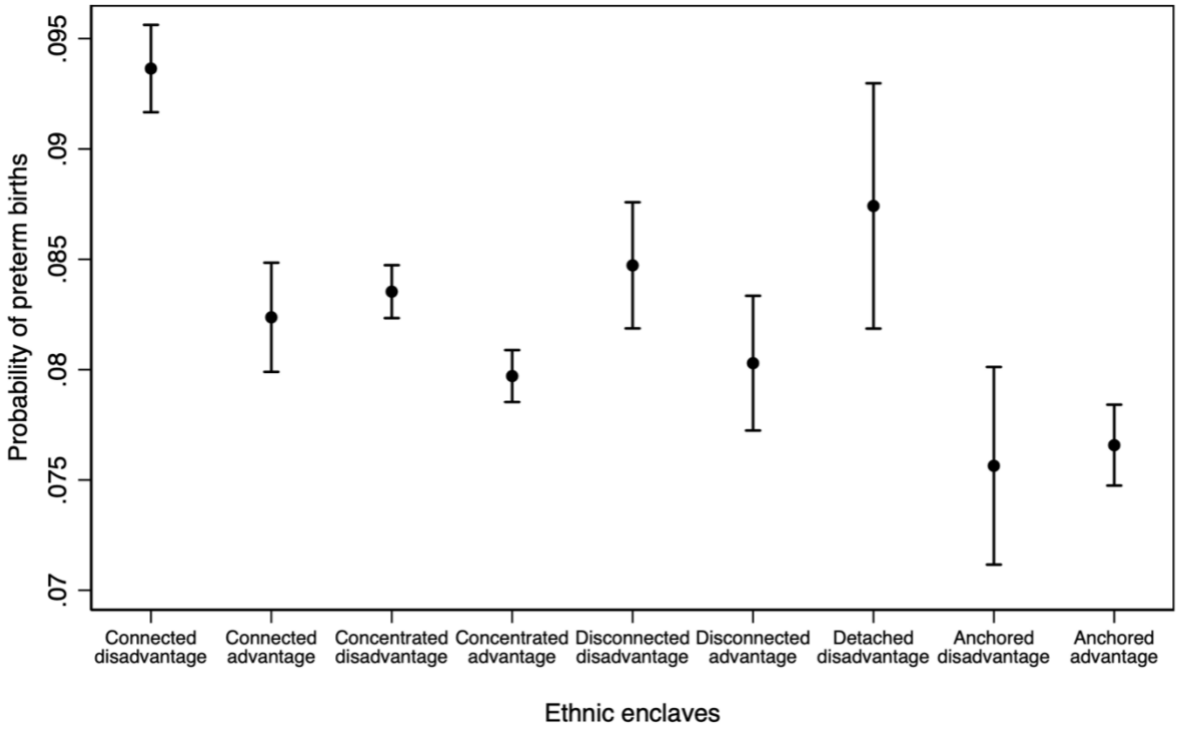


Figure 6.1. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births, N=1,084,867

Compared to their U.S. born counterparts, foreign born mothers experienced significantly lower odds of PTB (aOR=0.85, 95% CI: 0.84,0.86). Mothers of Puerto Rican descent (aOR=1.23, 95% CI: 1.19,1.26) and those of Central and South American origin (aOR=1.04, 95% CI: 1.02,1.07) experienced significantly higher odds of PTB, when compared

to Mexican mothers. A different pattern was observed for mothers of Cuban descent (aOR=0.98, 95% CI: 0.94,1.03), who experienced non-significant lower odds of PTB.

All things equal, an increase in age was associated with a 2% higher likelihood of giving birth prematurely. Relative to those who were married, unmarried mothers reported a significantly higher odds of PTB (aOR=1.10, 95% CI: 1.08,1.12). Advanced education appeared to confer some benefits. Compared to Latina mothers with a lower educational profile, those with some college/Associates degree (aOR=0.96, 95% CI: 0.93,0.98) and a Bachelor's degree or higher (aOR=0.78, 95% CI: 0.76,0.81) experienced significantly lower odds of PTB. When compared to Latina mothers who reported Medicaid as their delivery source of payment, only those with private insurance experienced significantly lower odds of PTB (aOR=0.98, 95% CI: 0.96,1.00). Latina mothers who self-paid (aOR=1.08, 95% CI: 1.05,1.11), reported other health insurance (aOR=1.11, 95% CI: 1.07,1.15), and those who were missing on this variable experienced significantly higher odds of PTB (aOR=1.38, 95% CI: 1.24,1.54).

Several factors contributed to Latina mothers increased risk of premature birth. An increase in the number of previous births was associated with a 3% higher odds of PTB. Compared to reporting no PTB risk factors (i.e., gestational diabetes, hypertension, eclampsia, previous PTB), reporting one or more of these risk factors was associated with 139% times higher odds of PTB. Net of all covariates, smoking also significantly increased this risk by 60%. Mothers who did not begin prenatal care early also experienced a 2% increased risk of premature birth when compared to their counterparts who enrolled during the first trimester.

Mothers who lived in counties with more social associations experienced a lower risk of PTB (aOR=0.99, 95% CI: 0.94,1.04). However, this finding was not statistically significant. All things equal, increased exposure to other Latinos as measured with the isolation index was associated with a lower odds of PTB (aOR=0.97, 95% CI: 0.95,0.99). Whereas, an increase in the dissimilarity index—or unevenness between Latinos and white people across neighborhoods in the county—was associated with a non-significant higher odds of PTB

(aOR=1.04, 95% CI: 0.93,1.17). Latina mothers who lived in counties with higher levels of income inequality experienced a 49% increase in premature birth. Living in a county with a large number of primary care physicians significantly reduced the likelihood of giving birth prematurely (aOR=0.93, 95% CI: 0.89,0.96). This finding was also true for living in a setting with increased access to other primary care providers (aOR=0.99, 95% CI: 0.96,1.02). However, this result was not statistically significant. Net of all covariates, Latina mothers who lived in counties with larger public health expenditures experienced a 1% significant increase in the odds of PTB.

Compared to Latina mothers in states that do not cover lawful immigrants without a 5 year wait for eligibility, those in states with this policy reported non-significant lower odds of PTB (aOR=0.99, 95% CI: 0.96,1.02). Latina mothers who lived in counties with more immigration enforcement policies experienced a 3% higher odds of premature birth, net of all other factors, and those who lived in counties where a higher proportion of individuals voted for the Republican candidate in the 2016 presidential election experienced higher odds of PTB (aOR=1.05, 95% CI: 1.01,1.08). Latina mothers who lived in states that experienced increased population changes reported lower odds of PTB (aOR=0.98, 95% CI: 0.96,1.00). Whereas those who lived in states with a greater undocumented population experienced higher odds of PTB (aOR=1.32, 95% CI: 1.26,1.38). Latina mothers who lived in counties with a greater rural population experienced a significantly lower likelihood of PTB (aOR=0.97, 95% CI: 0.95,0.98). All things equal, living in counties with greater population density was associated with a non-significant higher odds of PTB (aOR=1.01, 95% CI: 1.00,1.02).

Table 6.6. Logistic regression results predicting the association between living in an ethnic enclave and preterm births among Latina mothers in the U.S., N=1,084,867

Variables	aOR	95% CI
Ethnic enclave		
Connected disadvantage	1.25***	1.20,1.30
Connected advantage	1.08***	1.04,1.13
Concentrated disadvantage	1.10***	1.07,1.14
Concentrated advantage	1.05**	1.01,1.08
Disconnected disadvantage	1.12***	1.07,1.17
Disconnected advantage	1.05*	1.01,1.10
Detached disadvantage	1.16***	1.07,1.25

Variables	aOR	95% CI
Anchored disadvantage	0.99	0.92,1.06
Anchored advantage (ref)	1.00	1.00,1.00
Individual level factors		
Nativity		
U.S. Born (ref)	1.00	1.00,1.00
Foreign born	0.85***	0.84,0.86
Latino origin		
Mexican (ref)	1.00	1.00,1.00
Puerto Rican	1.23***	1.19,1.26
Cuban	0.98	0.94,1.03
Central/South American	1.04***	1.02,1.07
Maternal age (cont.)	1.02***	1.02,1.02
Marital status		
Married (ref)	1.00	1.00,1.00
Unmarried	1.10***	1.08,1.12
Missing	1.03	0.99,1.08
Education		
8th grade or less (ref)	1.00	1.00,1.00
Some high school	1.08***	1.05,1.12
High school grad/GED	1.01	0.98,1.04
Some college/Associates	0.96**	0.93,0.98
College +	0.78***	0.76,0.81
Missing	1.08*	1.01,1.15
Insurance		
Medicaid (ref)	1.00	1.00,1.00
Private insurance	0.98*	0.96,1.00
Self-pay	1.08***	1.05,1.11
Other	1.11***	1.07,1.15
Missing	1.38***	1.24,1.54
No. of live births	1.03***	1.02,1.03
Risk factors		
No (ref)	1.00	1.00,1.00
Yes	2.39***	2.35,2.43
Smoking		
No (ref)	1.00	1.00,1.00
Yes	1.60***	1.51,1.69
Prenatal care		
Early initiation (ref)	1.00	1.00,1.00
2nd tri/Late/no initiation	1.02*	1.00,1.03
Community-level factors		
Social associations (log)	0.99	0.94,1.04
Structural factors		
Isolation index	0.97***	0.95,0.99
Dissimilarity index	1.04	0.93,1.17
Income inequality (log)	1.49***	1.35,1.64
Primary care physicians (log)	0.93***	0.89,0.96
Other primary care (log)	0.99	0.96,1.02
Public health expenditure (log)	1.01**	1.00,1.02
Waiting period		
No (ref)	1.00	1.00,1.00

Variables	aOR	95% CI
Yes	0.99	0.96,1.02
Immigration enforcement score	1.03***	1.02,1.03
% of county pop. voting Republican, 2016 (log)	1.05**	1.01,1.08
% State population change, 2000-2018 (log)	0.98*	0.96,1.00
% Rural population (log)	0.97***	0.95,0.98
% of undocumented pop. in state (log)	1.32***	1.26,1.38
Population density (log)	1.01	1.00,1.02
Constant	0.01***	0.01,0.01
N	1,084,867	

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

6.1.4.2 Post-hoc analyses

Table 6.7 summarizes results from the post hoc analyses investigating differences between enclave types. The goal was to determine which enclave delimiter (i.e., the social, economic, geographic) was most influential. In the first comparison, the delimiter was the proportion of Latinos (i.e., high vs. medium ethnic density). The odds of PTB were significantly lower among Latina mothers in anchored advantage (i.e., medium Latino population) enclaves when compared to their counterparts in connected advantage (i.e., large Latino population) enclaves (OR=0.92, p=0.00). The odds of PTB were also significantly lower among residents in anchored disadvantage (i.e., medium Latino population) enclaves than Latina mothers in connected disadvantage (i.e., large Latino population) enclaves (OR=0.79, p=0.00).

When comparing just the foreign-born population (i.e., high vs. low foreign-born density), there was only one comparison that yielded significant results. The odds of PTB were significantly lower among Latina mothers in Latina mothers in disconnected disadvantage (i.e., small foreign-born population) enclaves vs. those in connected disadvantage enclaves (i.e., large foreign-born population) enclaves (OR=0.89, p=0.00). Comparisons of the odds of PTB between Latina mothers in disconnected advantage (i.e., small foreign-born population) enclaves and connected advantage (i.e., large foreign-born population) enclaves were not significant (OR= 0.97, p=0.29). Residents in detached disadvantage enclaves (i.e., small foreign-born population) were experienced non-significant higher odds of PTB than their

counterparts in concentrated disadvantage (i.e., large foreign-born population) enclaves (OR= 1.05, p=0.18).

However, there were significant differences in the odds of PTB in almost all enclave pairs when comparing the economic (i.e., advantage vs. disadvantage) delimiter. The odds of PTB were significantly lower among residents in connected advantage (i.e., low disadvantage) vs. connected disadvantage (i.e., high disadvantage) enclaves (OR=0.87, p=0.00). Likewise, the odds of PTB were significantly lower among Latina mothers in concentrated advantage (i.e., low disadvantage) enclaves vs. concentrated disadvantage (i.e., high disadvantage) enclaves (OR= 0.95, p=0.00). The odds of PTB were also significantly lower among residents in disconnected advantage (i.e., low disadvantage) vs. disconnected disadvantage (i.e., high disadvantage) enclaves (OR= 0.94, p=0.00). There were no significant differences in the odds of PTB comparing Latina mothers in anchored advantage (i.e., low disadvantage) enclaves to their counterparts in anchored disadvantage (i.e., high disadvantage) enclaves (OR= 1.01, p=0.70).

The comparisons that focused on geography (i.e., urban vs. suburban) revealed a lower marginally significant odds of PTB among Latina mothers in concentrated advantage (i.e., urban) enclaves vs. those in connected advantage (i.e., suburban) enclaves (OR= 0.96, p=0.06). However, the odds of PTB were significantly lower among residents in concentrated disadvantage (i.e., urban) enclaves vs. connected disadvantage (i.e., suburban) enclaves (OR= 0.88, p=0.00). The differences in the odds of PTB comparing residents in detached disadvantage (i.e., urban) enclaves to those in disconnected disadvantage (i.e., suburban) enclaves were not significant (OR= 1.04, p=0.38).

Table 6.7. Pairwise comparisons of the ethnic enclave classification dimensions

Enclave	Latino density	Foreign-born	Economic Disadvantage	Geography	OR	pvalue
Social – Latino ethnic density						
1 Connected advantage	Large	Large	Low	Suburban	0.92	0.00
2 Anchored advantage***	Med	Large	Low	Suburban		
1 Connected disadvantage	Large	Large	High	Suburban	0.79	0.00
2 Anchored disadvantage***	Med	Large	High	Suburban		
Social - foreign-born population						

Enclave	Latino density	Foreign-born	Economic Disadvantage	Geography	OR	pvalue
1 Connected advantage	Large	Large	Low	Suburban	0.97	0.29
2 Disconnected advantage	Large	Small	Low	Suburban		
1 Connected disadvantage	Large	Large	High	Suburban	0.89	0.00
2 Disconnected disadvantage***	Large	Small	High	Suburban		
1 Concentrated disadvantage	Large	Large	High	Urban	1.05	0.18
2 Detached disadvantage	Large	Small	High	Urban		
Economic - county economic standing						
1 Connected disadvantage	Large	Large	High	Suburban	0.87	0.00
2 Connected advantage***	Large	Large	Low	Suburban		
1 Concentrated disadvantage	Large	Large	High	Urban	0.95	0.00
2 Concentrated advantage***	Large	Large	Low	Urban		
1 Anchored disadvantage	Med	Large	High	Suburban	1.01	0.70
2 Anchored advantage	Med	Large	Low	Suburban		
1 Disconnected disadvantage	Large	Small	High	Suburban	0.94	0.02
2 Disconnected advantage*	Large	Small	Low	Suburban		
Geography - urban vs. suburban						
1 Connected advantage	Large	Large	Low	Suburban	0.96	0.06
2 Concentrated advantage+	Large	Large	Low	Urban		
1 Connected disadvantage	Large	Large	High	Suburban	0.88	0.00
2 Concentrated disadvantage***	Large	Large	High	Urban		
1 Disconnected disadvantage	Large	Small	High	Suburban	1.04	0.38
2 Detached disadvantage	Large	Small	High	Urban		

+p<0.10, *p<0.05, **p<0.01, ***p<0.001.
Note. OR=odds ratio. The differences between the log odds comparing PTB for each enclave pair was exponentiated. Interpret as 2 vs. 1.

6.1.4.3 Sensitivity analyses

Sensitivity analyses examining different ethnic enclave specifications (i.e., collapsing anchored advantage and anchored disadvantage enclaves; and using the larger enclave group) did not reveal substantial differences (see Appendix H, Figures 1 and 2). In addition, the association between living in an ethnic enclave and low birthweight appears to follow the same overall pattern. Relative to Latina mothers in anchored advantage enclaves, those in connected disadvantage enclaves experienced the largest significant odds of LBW (OR=1.30, 95% CI: 1.24,1.36), net of all covariates. However, there was one exception: compared to those in anchored advantage enclaves, Latina mothers in anchored disadvantage settings were predicted to experience higher odds of LBW (OR=1.10, 95% CI: 1.02,1.19) (lower odds were observed in the model predicting PTB) (see Appendix H, Figure 3).

6.1.5 Summary of aim 1 results

There were significant differences between the rate of full-term and premature births when investigating study variables (except the ratio of the county population to primary care physicians, the proportion of residents voting Republican in the 2016 Presidential election, and the share of the state Hispanic population). There were also significant differences between ethnic enclaves and all study measures. Overall, compared to Latina mothers in anchored advantage enclaves (i.e., medium Latino density, large foreign-born population, suburban, advantage), those in connected disadvantage enclaves (i.e., large Latino density, large foreign-born population, suburban, disadvantage) enclaves experience the highest significant odds of PTB, net of all covariates. Latina mothers in other areas fall somewhere in between.

6.2 Aim 2 results

The goal of aim 2 was to examine if the association between living in an ethnic enclave and PTB among Latina mothers is modified by nativity or national origin, adjusting individual, community, and structural covariates.

Sub aim 2.1. Assess differences in the distribution of PTB by enclave type and nativity.

Sub aim 2.2. Assess differences in the distribution of PTB by enclave type and Latino origin.

H2.1. Nativity will modify the association between living in an ethnic enclave and PTB, such that the effects are greater for foreign-born vs. U.S.-born Latina mothers (i.e., those in anchored advantaged enclaves will have lower odds of PTB, especially if they are foreign-born).

H2.2. Latino origin will modify the association between living in an ethnic enclave and PTB, such that there will be differences in the odds of PTB, when comparing Latinas of Mexican, Cuban, and Puerto Rican descent living in anchored advantaged enclaves and other areas.

6.2.1 Bivariate analyses

6.2.1.1 Nativity

Table 6.8 presents results examining study characteristics by nativity. There were significant differences across all study measures. There was an almost equal distribution of

foreign (49.2%) and U.S. born (50.8%) mothers and the largest share of both groups lived in concentrated enclaves. Mexican mothers are highly represented in this sample (79.9% of U.S.-born individuals are of Mexican descent and 60.3% of foreign-born individuals are of Mexican origin). Central/South American mothers also make up a large share of the foreign-born population, as 30.8% of foreign-born individuals are from a Central or South American country).

Foreign-born mothers (M=29.7, SD=6.1) were older than their U.S. born (M=26.7, SD=5.8) counterparts. A larger proportion of foreign-born mothers were married (36.9% vs. 28.3%). Fewer foreign-born mothers had completed advanced degrees. While over a third (34.1%) of the U.S. born had completed some college/associates, just 17.3% of foreign-born individuals had completed this degree. A larger share (63.1%) of foreign-born mothers paid for their delivery using Medicaid. Although like the foreign-born (63.1%), U.S.-born mothers were also likely to pay for their delivery using Medicaid (57.2%) they were more likely to also use private insurance (37.5%) than the foreign-born (20.9%). Whereas, foreign-born mothers (12.4%) were more likely than U.S. born mothers (11.0%) to report PTB risk factors, they were less likely to report smoking during pregnancy (0.4% vs. 1.7%). However, foreign-born mothers (30.4%) sought prenatal care at a later stage in their pregnancy than the U.S. born (25.7%).

Compared to the enclaves that were largely populated by U.S.-born people, there were significantly more social associations in enclaves where foreign-born mothers lived (M=6.6, SD=2.0 vs. M=6.4, SD=1.9, respectively). Whereas, more foreign-born mothers lived in the U.S. South (40.6% vs. 34.8%), more U.S. born individuals lived in the West (49.3% vs. 39.3%). Compared to the U.S.-born, fewer foreign-born individuals lived in a county that bordered Mexico (7.9% vs. 11.4%). Foreign-born mothers were also significantly less likely to live in states that provide drivers licenses to undocumented immigrants (42.2%), expand Medicaid (61.3%), and grant health insurance for undocumented children (42.7%) than the U.S.-born. However, the foreign-born (49.9%) were significantly more likely than the U.S. born (49.3%) to live in states without the five-year waiting period. Exposure to other Latinos was significantly

lower in the counties where the foreign born lived (M=50.4, SD=16.6 vs. M=52.2, SD=16.1) and the dissimilarity index was slightly higher in these areas (M=47.5, SD=9.3 vs. M=47.0, SD=10.0). Income inequality was also slightly higher in places where the foreign born lived (M=5.0, SD=0.8 vs. M=4.9, SD=0.7). The ratio of primary care physicians to the population (M=1431.3, SD=493.8, M=1493.4 vs. SD=520.6) and the ratio of other primary care providers (M=1429.3, SD=492.2 vs. M=1464.8, SD=489.0) was also much lower in these areas. The counties were foreign born mothers lived were significantly more likely to spend less on public health (M=$670 million, SD=$1,300 million vs. M=$840 million, SD=$1,500 million).

There were significantly less immigrant integration policies in the states where the majority of foreign-born mothers lived (M=2.0, SD=1.7 vs. M=2.1, SD=1.7) and more immigration enforcement policies (M=2.9, SD=2.5 vs. M=2.7, SD=2.5). Counties dominated by the foreign born were less likely to have voted for the Republican Presidential candidate in 2016 (M=36.5, SD=13.1 vs. M=37.8, SD=13.3). Population change was greater than 20% in areas where the foreign born (M=21.0, SD=11.7) and U.S. born (M=22.1, SD=11.6) lived. The rural population was also significantly lower in places dominated by the foreign born (M=4.2, SD=6.2) than in the counties were the majority of U.S. born individuals lived (M=4.9, SD=6.6). The Hispanic population (M=29.9, SD=10.7 vs. M=32.3, SD=9.9), the foreign-born population (M=19.9, SD=6.1 vs. M=19.8, SD=5.8), and the undocumented immigrant population (M=28.0, SD=6.3 vs. M=26.7, SD=6.8) were much lower in states with a majority of foreign-born individuals. Population density was significantly lower in areas dominated by the foreign-born (M=3009.9, SD=3817.5 vs. M=2300.4, SD=3075.1).

Table 6.8. Distribution of study variables by nativity, N=1,084,867

Variables	**U.S. Born** n= 551,475	**Foreign born** n= 533,392	pvalue
	n (%)	n (%)	
Preterm birth			0.00
37+ weeks	504,622 (91.5)	490,378 (91.9)	
Under 37 weeks	46,853 (8.5)	43,014 (8.1)	
Ethnic enclave			0.00
Connected disadvantage	96,344 (17.5)	73,214 (13.7)	

Variables	**U.S. Born** n= 551,475	**Foreign born** n= 533,392	pvalue
	n (%)	n (%)	
Connected advantage	26,692 (4.8)	34,046 (6.4)	
Concentrated disadvantage	141,161 (25.6)	146,773 (27.5)	
Concentrated advantage	170,322 (30.9)	145,725 (27.3)	
Disconnected disadvantage	32,964 (6.0)	20,103 (3.8)	
Disconnected advantage	22,588 (4.1)	18,897 (3.5)	
Detached disadvantage	4,976 (0.9)	5,349 (1.0)	
Anchored disadvantage	6,411 (1.2)	7,914 (1.5)	
Anchored advantage	50,017 (9.1)	81,371 (15.3)	
Individual level factors			
Latino origin			0.00
Mexican	440,407 (79.9)	321,884 (60.3)	
Puerto Rican	62,006 (11.2)	25,413 (4.8)	
Cuban	14,564 (2.6)	21,896 (4.1)	
Central/South American	34,498 (6.3)	164,199 (30.8)	
Maternal age[a]	26.7 (5.8)	29.7 (6.1)	0.00
Marital status			0.00
Married	156,104 (28.3)	196,942 (36.9)	
Unmarried	204,522 (37.1)	183,333 (34.4)	
Missing	190,849 (34.6)	153,117 (28.7)	
Education			0.00
8th grade or less	6,647 (1.2)	86,540 (16.2)	
Some high school	81,304 (14.7)	116,374 (21.8)	
High school grad/GED	187,392 (34.0)	165,428 (31.0)	
Some college/Associates	188,159 (34.1)	92,138 (17.3)	
College +	83,652 (15.2)	63,623 (11.9)	
Missing	4,321 (0.8)	9,289 (1.7)	
Insurance			0.00
Medicaid	315,237 (57.2)	336,692 (63.1)	
Private insurance	206,580 (37.5)	111,244 (20.9)	
Self-pay	9,819 (1.8)	55,970 (10.5)	
Other	18,638 (3.4)	27,123 (5.1)	
Missing	1,201 (0.2)	2,363 (0.4)	
Live birth order[a]	2.1 (1.3)	2.5 (1.4)	0.00
Preterm birth risk factors			0.00
No	490,720 (89.0)	467,082 (87.6)	
Yes	60,755 (11.0)	66,310 (12.4)	
Smoked during pregnancy			0.00
No	541,834 (98.3)	531,525 (99.6)	
Yes	9,641 (1.7)	1,867 (0.4)	
Prenatal care initiation			0.00
Early initiation	409,768 (74.3)	371,052 (69.6)	
2nd tri/late/no initiation	141,707 (25.7)	162,340 (30.4)	
Community-level factors			
Social associations	6.4 (1.9)	6.6 (2.0)	0.00
Structural factors			
Region			0.00
Northeast	53,923 (9.8)	77,417 (14.5)	
Midwest	34,144 (6.2)	29,788 (5.6)	

Variables	**U.S. Born** n= 551,475	**Foreign born** n= 533,392	pvalue
	n (%)	n (%)	
South	191,676 (34.8)	216,635 (40.6)	
West	271,732 (49.3)	209,552 (39.3)	
Border region			0.00
US Non-Border Region	488,589 (88.6)	491,449 (92.1)	
US-Mexico Border Region	62,886 (11.4)	41,943 (7.9)	
Driver's license			0.00
No	287,249 (52.1)	308,145 (57.8)	
Yes	264,226 (47.9)	225,247 (42.2)	
Five-year waiting period			0.00
No	279,664 (50.7)	267,146 (50.1)	
Yes	271,811 (49.3)	266,246 (49.9)	
Medicaid expansion			0.00
Not adopted	196,066 (35.6)	206,399 (38.7)	
Adopted	355,409 (64.4)	326,993 (61.3)	
Health insurance for undocumented children			0.00
No	297,485 (53.9)	305,630 (57.3)	
Yes	253,990 (46.1)	227,762 (42.7)	
Isolation index[a]	52.2 (16.1)	50.4 (16.6)	0.00
Dissimilarity index[a]	47.0 (10.0)	47.5 (9.3)	0.00
Income inequality[a]	4.9 (0.7)	5.0 (0.8)	0.00
Primary care physicians[a]	1493.4 (520.6)	1431.3 (493.8)	0.00
Other primary care[a]	1464.8 (489.0)	1429.3 (492.2)	0.00
Public health expenditure (million $)[a]	840 (1500)	670 (1300)	0.00
Immigrant integration policies (range, 0-4)[a]	2.1 (1.7)	2.0 (1.7)	0.00
Immigration enforcement score (range, 0-7)[a]	2.7 (2.5)	2.9 (2.5)	0.00
%County population voting Republican (2016)[a]	37.8 (13.3)	36.5 (13.1)	0.00
%Population change since 2000[a]	22.1 (11.6)	21.0 (11.7)	0.00
%Rural population in county[a]	4.9 (6.6)	4.2 (6.2)	0.00
%State Hispanic pop[a]	32.3 (9.9)	29.9 (10.7)	0.00
%State foreign-born pop[a]	19.9 (6.1)	19.8 (5.8)	0.00
State undocumented immigrant population[a]	28.0 (6.3)	26.7 (6.8)	0.00
Population density[a]	3009.9 (3817.5)	2300.4 (3075.1)	0.00

Note. [a]M mean, SD standard deviation.

6.2.1.2 Latino origin

Table 6.9 presents study variables by Latino origin and highlights differences between Mexican, Puerto Rican, and Cuban origin mothers on all study measures. Compared to Puerto Rican and Cuban origin mothers, Mexican origin mothers were more likely to live in connected disadvantage (20.5%), concentrated disadvantage (23.2%), and concentrated advantage (32.2%) enclaves. Puerto Rican mothers were more likely to live in concentrated disadvantage (34.4%), concentrated advantage (18.0%), and anchored advantage (19.6%) enclaves. Mothers

of Cuban descent were more likely to live in concentrated disadvantage (61.9%), connected advantage (12.4%), and anchored advantage (11.7%) enclaves. Although the majority of mothers of Mexican (57.8%) and Puerto Rican (70.9%) descent in this sample were U.S. born, Cuban mothers were more likely to be foreign-born (60.1%).

Cuban mothers also tended to be slightly older (M=29.3, SD=5.4) than their Mexican (M=27.9, SD=6.1) and Puerto Rican (M=27.5, SD=5.9) origin counterparts. In addition, 43.8% of Cuban mothers were married, compared to 32.5% of Puerto Rican origin and 29.7% of Mexican mothers. More mothers of Cuban descent (27.9%) had completed college or higher, compared to 16.3% of Puerto Rican and 11.1% of Mexican mothers. The share of mothers with private insurance (43.5%) was also significantly higher among those of Cuban origin. This figure was just 28.4% among Mexican mothers and 33.8% among Puerto Rican mothers. Mothers of Mexican origin were much likely to have had more prior births (M=2.3, SD=1.4) compared to their Puerto Rican (M=2.1, SD=1.3) and Cuban (M=1.7, SD=0.9) origin counterparts.

Compared to Cuban (11.7%) and Mexican (11.9%) mothers, mothers of Puerto Rican descent were more likely to report PTB risk factors (12.5%), and smoking during pregnancy (Puerto Rican mothers (4.0%) vs. Cuban mothers (1.1%) vs. Mexican mothers (0.9%)). However, Mexican mothers were more likely to have had late prenatal care initiation (Mexican mothers (27.7%) vs. Puerto Rican mothers (26.8%) vs. Cuban mothers (19.4%)). On average, there were more social association per population in areas where a majority of mothers of Puerto Rican descent lived (M=7.5, SD=2.3); the fewest were in areas where most mothers of Cuban descent lived (M=5.8, SD=1.6). While mothers of Mexican origin largely resided in counties in the Southern (34.2%) and Western (56.1%) parts of the U.S., mothers of Puerto Rican descent were more likely to live in the South (32.0%) and Northeast (53.6%), and those of Cuban origin were predominantly in the South (82.7%). While very few mothers of Puerto Rican (1.2%) and Cuban (0.7%) origin lived in the US-Mexico Border Region, 13.3% of Mexican mothers called these areas home.

Compared to both Mexican (M=2.2, SD=1.8) and Puerto Rican (M=1.8, SD=1.3) mothers, Cuban origin (M=0.5, SD=1.1) mothers were least likely to live in states with immigrant integration policies. Mothers of Mexican origin were more likely to live in states that extended drivers licenses to undocumented immigrants (53.8%) and health insurance to undocumented children (49.3%). However, mothers of Puerto Rican origin were more likely to live in states that adopted Medicaid expansion (67.4%) and states that offer health insurance to lawful immigrants without a five-year wait (60.3%). Mothers of Cuban descent were more likely to be exposed to other Latinos (M=57.0, SD=20.0), whereas those of Puerto Rican descent were least likely to encounter other Latinos (M=42.7, SD=11.8).

The dissimilarity index was also highest among Puerto Rican mothers (M=49.7, SD=11.2) and lowest among mothers of Cuban descent (M=44.6, SD=7.6). Income inequality was lowest in areas where Mexican mothers (M=4.8, SD=0.6) lived and highest in places where mothers of Puerto Rican origin lived (M=5.3, SD=1.1). The ratio of the population to primary care physicians (M=1532.1, SD=538.8) and other primary care providers (M=1513.9, SD=455.9) was highest in counties where Mexican mothers lived and lowest in areas where mothers of Cuban descent were largely populated (M=1318.2, SD=270.4) and (M=1156.0, SD=355.8), respectively). Public health expenditure was also highest (M=$880 million, SD=$1,500 million) in areas largely populated by Mexican mothers and lowest in areas populated by mothers of Cuban descent (M=$220 million, SD=$640 million).

There were more immigration enforcement policies in places where Latina mothers of Cuban origin (M=4.7, SD=1.6) lived and fewer of these policies in areas where Mexican mothers (M=2.6, SD=2.5) lived. The share of residents who voted for the Republican candidate in the 2016 election was highest in the areas where mothers of and Mexican origin lived (M=38.2, SD=13.2) and lowest in areas were mothers of Puerto Rican origin lived (M=34.6, SD=13.5). Population change since 2000 was greatest in states where Cuban mothers lived (M=27.0, SD=8.1) and lowest in areas where mothers of Puerto Rican origin (M=14.1, SD=12.2) were

largely populated. The rural population was highest in the areas where Mexican mothers lived (M=5.2, SD=6.8) and lowest in areas where Cuban mothers lived (M=1.9, SD=3.5). Mexican mothers generally lived in states that had the largest proportion of Hispanic individuals (M=34.0, SD=9.1), foreign-born people (M=20.1, SD=6.3), and undocumented immigrants (M=29.2, SD=5.8). These areas also had the largest population density (M=3192.5, SD=3803.0).

Table 6.9. Distribution of study variables by Latino origin, N=886,170

Variables	**Mexican** n(%)	**Puerto Rican** n(%)	**Cuban** n(%)	pvalue
Sample	n=762,291	n=87,419	n=36,460	
Preterm birth				0.00
37+ weeks	699,231 (91.7)	79,003 (90.4)	33,733 (92.5)	
Under 37 weeks	63,060 (8.3)	8,416 (9.6)	2,727 (7.5)	
Ethnic enclave				0.00
Connected disadvantage	156,597 (20.5)	4,735 (5.4)	690 (1.9)	
Connected advantage	42,603 (5.6)	2,560 (2.9)	4,528 (12.4)	
Concentrated disadvantage	176,491 (23.2)	30,052 (34.4)	22,559 (61.9)	
Concentrated advantage	245,526 (32.2)	15,735 (18.0)	2,887 (7.9)	
Disconnected disadvantage	40,551 (5.3)	8,737 (10.0)	675 (1.9)	
Disconnected advantage	32,190 (4.2)	3,651 (4.2)	392 (1.1)	
Detached disadvantage	7,771 (1.0)	1,478 (1.7)	68 (0.2)	
Anchored disadvantage	6,852 (0.9)	3,301 (3.8)	388 (1.1)	
Anchored advantage	53,710 (7.0)	17,170 (19.6)	4,273 (11.7)	
Individual level factors				
Nativity status				0.00
U.S. Born	440,407 (57.8)	62,006 (70.9)	14,564 (39.9)	
Foreign born	321,884 (42.2)	25,413 (29.1)	21,896 (60.1)	
Maternal age	27.9 (6.1)	27.5 (5.9)	29.3 (5.4)	0.00
Marital status				0.00
Married	226,265 (29.7)	28,398 (32.5)	15,956 (43.8)	
Unmarried	230,614 (30.3)	55,257 (63.2)	19,020 (52.2)	
Missing	305,412 (40.1)	3,764 (4.3)	1,484 (4.1)	
Education				0.00
8th grade or less	55,901 (7.3)	1,168 (1.3)	376 (1.0)	
Some high school	148,041 (19.4)	13,122 (15.0)	2,523 (6.9)	
High school grad/GED	263,305 (34.5)	29,262 (33.5)	12,983 (35.6)	
Some college/Associates	201,069 (26.4)	29,148 (33.3)	10,073 (27.6)	
College +	84,870 (11.1)	14,252 (16.3)	10,166 (27.9)	
Missing	9,105 (1.2)	467 (0.5)	339 (0.9)	
Insurance				0.00
Medicaid	468,063 (61.4)	53,743 (61.5)	19,241 (52.8)	
Private insurance	216,809 (28.4)	29,530 (33.8)	15,863 (43.5)	
Self-pay	43,050 (5.6)	1,265 (1.4)	590 (1.6)	
Other	31,868 (4.2)	2,693 (3.1)	730 (2.0)	
Missing	2,501 (0.3)	188 (0.2)	36 (0.1)	
Live birth order	2.3 (1.4)	2.1 (1.3)	1.7 (0.9)	0.00
Preterm birth risk factors				0.00

Variables	**Mexican** n(%)	**Puerto Rican** n(%)	**Cuban** n(%)	pvalue
No	671,533 (88.1)	76,461 (87.5)	32,202 (88.3)	
Yes	90,758 (11.9)	10,958 (12.5)	4,258 (11.7)	
Smoked during pregnancy				0.00
No	755,369 (99.1)	83,964 (96.0)	36,045 (98.9)	
Yes	6,922 (0.9)	3,455 (4.0)	415 (1.1)	
Prenatal care initiation				0.00
Early initiation	550,890 (72.3)	63,994 (73.2)	29,382 (80.6)	
2nd tri/late/no initiation	211,401 (27.7)	23,425 (26.8)	7,078 (19.4)	
Community-level factors				
Social associations	6.3 (1.9)	7.5 (2.3)	5.8 (1.6)	0.00
Structural factors				
Region				0.00
Northeast	21,876 (2.9)	46,814 (53.6)	2,525 (6.9)	
Midwest	52,183 (6.8)	5,580 (6.4)	507 (1.4)	
South	260,781 (34.2)	28,003 (32.0)	30,167 (82.7)	
West	427,451 (56.1)	7,022 (8.0)	3,261 (8.9)	
Border region				0.00
US Non-Border Region	661,193 (86.7)	86,372 (98.8)	36,204 (99.3)	
US-Mexico Border Region	101,098 (13.3)	1,047 (1.2)	256 (0.7)	
Driver's license				0.00
No	352,530 (46.2)	70,103 (80.2)	32,998 (90.5)	
Yes	409,761 (53.8)	17,316 (19.8)	3,462 (9.5)	
Five-year waiting period				0.00
No	392,185 (51.4)	34,681 (39.7)	31,755 (87.1)	
Yes	370,106 (48.6)	52,738 (60.3)	4,705 (12.9)	
Medicaid expansion				0.00
Not adopted	269,140 (35.3)	28,539 (32.6)	30,040 (82.4)	
Adopted	493,151 (64.7)	58,880 (67.4)	6,420 (17.6)	
Health insurance for undocumented children				0.00
No	386,788 (50.7)	58,591 (67.0)	33,543 (92.0)	
Yes	375,503 (49.3)	28,828 (33.0)	2,917 (8.0)	
Isolation index[a]	53.5 (16.2)	42.7 (11.8)	57.0 (20.0)	0.00
Dissimilarity index[a]	46.8 (9.6)	49.7 (11.2)	44.6 (7.6)	0.00
Income inequality[a]	4.8 (0.6)	5.3 (1.1)	5.2 (0.6)	0.00
Primary care physicians[a]	1532.1 (538.8)	1326.7 (419.5)	1318.2 (270.4)	0.00
Other primary care[a]	1513.9 (455.9)	1182.2 (553.7)	1156.0 (355.8)	0.00
Public health expenditure (mill. $)[a]	880 (1500)	290 (620)	220 (640)	0.00
Immigrant integration policies, 0-4[a]	2.2 (1.8)	1.8 (1.3)	0.5 (1.1)	0.00
Immigration enforcemt. score, 0-7[a]	2.6 (2.5)	3.0 (2.3)	4.7 (1.6)	0.00
%County pop voting Republican'16	38.2 (13.2)	34.6 (13.5)	37.2 (9.4)	0.00
%Population change since 2000[a]	23.1 (11.0)	14.1 (12.2)	27.0 (8.1)	0.00
%Rural population in county[a]	5.2 (6.8)	4.1 (5.9)	1.9 (3.5)	0.00
%State Hispanic pop[a]	34.0 (9.1)	20.5 (8.6)	26.1 (5.9)	0.00
%State foreign-born pop[a]	20.1 (6.3)	18.1 (5.5)	20.0 (2.9)	0.00
State undoc. immigrant pop[a]	29.2 (5.8)	21.4 (5.1)	20.3 (5.9)	0.00
Population density[a]	3192.5 (3803.0)	969.6 (1787.2)	1826.5 (1741.3)	0.00

Note. [a]M mean, SD standard deviation.

6.2.2 Multivariate analyses

6.2.2.1 Ethnic enclaves, nativity, and preterm births

Table 6.10 details the results of the multivariate analyses examining the association between living in an ethnic enclave and PTB by nativity. All else equal, compared to U.S. born mothers in anchored advantage enclaves, those in all other enclave types—except anchored advantage enclaves (aOR=1.00, 95% CI: 0.90,1.11)—reported a significantly higher odds of PTB. Among the foreign born, only those in connected disadvantage (aOR=1.27, 95% CI: 1.20,1.34) and disconnected disadvantage (aOR=1.14, 95% CI: 1.06,1.22) enclaves experienced a significantly higher odds of preterm birth when compared to those in anchored advantage enclaves. Although the highest significant likelihood of PTB was observed among foreign-born mothers who lived in connected disadvantage enclaves (aOR=1.27, 95% CI: 1.20,1.34), the greatest significant odds of PTB was observed among U.S. born mothers who lived in detached disadvantage enclaves (aOR=1.24, 95% CI: 1.18,1.31). Among both U.S. born and foreign-born mothers, Puerto Rican origin and Central/South American mothers report significantly higher odds of PTB than their Mexican origin counterparts.

An increase in age and unmarried status are both associated with significantly higher odds of PTB among U.S. born and foreign-born mothers. Unlike the native-born who benefit from completing high school or having a GED (aOR=0.87, 95% CI: 0.80,0.95), these educational achievements are not significantly associated with PTB (aOR=1.00, 95% CI: 0.97,1.04) among foreign-born mothers. However, having some college or advanced degree is significantly beneficial for both groups. Although a significant lower odds of preterm birth is observed among U.S. born mothers who used private insurance for their delivery (aOR=0.96, 95% CI: 0.94,0.99), this finding is not observed among foreign-born mothers (aOR=1.02, 95% CI: 0.99,1.05). While an increase in the number of previous live births, reporting one or more PTB risk factors and smoking during pregnancy were associated with significantly higher odds of PTB among U.S. born and foreign-born mothers, initiation of prenatal care appeared to

operate differently for both groups. Whereas later initiation was associated with a higher odds of PTB among the U.S. born (aOR=1.07, 95% CI: 1.05,1.10), late prenatal entry was associated with a lower odds of PTB among foreign-born mothers (aOR=0.96, 95% CI: 0.94,0.98).

Among the U.S. and foreign-born, the number of social associations is not significantly associated with PTB; though it may contribute to higher odds of PTB among U.S. born mothers (aOR=1.02, 95% CI: 0.96,1.10) and lower odds of this outcome among the foreign-born (aOR=0.97, 95% CI: 0.90,1.04). Exposure to other Latinos is beneficial for U.S. born (aOR=0.95, 95% CI: 0.93,0.98) and foreign-born (aOR=0.97, 95% CI: 0.94,1.00) mothers and is associated with a significantly lower odds of PTB. The dissimilarity index was marginally significant in the model with foreign-born mothers (aOR=1.17, 95% CI: 0.98,1.38). Greater income inequality was associated with higher odds of PTB among U.S. born (aOR=1.80, 95% CI: 1.56,2.07) and foreign-born (aOR=1.26, 95% CI: 1.10,1.44) mothers. Living in a county with a larger ratio of primary care physicians to the population was associated with a significantly lower odds of PTB among U.S. born mothers (aOR=0.92, 95% CI: 0.87,0.97). A larger ratio of other primary care was associated with insignificant lower odds of PTB for both groups. The county public health expenditure, however, was only associated with a significantly higher odds of PTB among foreign-born mothers (aOR=1.02, 95% CI: 1.01,1.03). There are no significant effects for states adopting the five-year waiting period for lawful immigrants to access health insurance among U.S. (aOR=1.00, 95% CI: 0.95,1.04) and foreign-born (aOR=0.99, 95% CI: 0.95,1.04) mothers.

An increase in the number of immigration enforcement policies was associated with a significantly higher odds of PTB among U.S.-born (aOR=1.02, 95% CI: 1.01,1.03) and foreign-born mothers (aOR=1.03, 95% CI: 1.02,1.04). The proportion of the county electorate voting for the Republican President in 2016 was associated with a significantly higher odds of PTB only among the U.S.-born (aOR=1.07, 95% CI: 1.02,1.13); this finding was positive, but insignificant among the foreign-born (aOR=1.02, 95% CI: 0.98,1.07). State population change from 2000-

2018 was associated with significantly lower odds of PTB for foreign-born mothers (aOR=0.97, 95% CI: 0.94,0.99), but not U.S. born mothers (aOR=0.99, 95% CI: 0.96,1.02). An increase in the county rural population was associated with a lower likelihood of PTB among U.S. (aOR=0.98, 95% CI: 0.96,1.00) and foreign-born (aOR=0.95, 95% CI: 0.93,0.97) mothers. Among both U.S. born (aOR=1.39, 95% CI: 1.30,1.50) and foreign-born (aOR=1.28, 95% CI: 1.20,1.36) mothers, an increase in the undocumented immigrant population was associated with a higher odds of PTB. Increasing population density was only associated with a significant higher odds of PTB among the foreign-born (aOR=1.02, 95% CI: 1.00,1.03); this effect was not observed among U.S. born mothers (aOR=1.00, 95% CI: 0.98,1.01).

Table 6.10. Logistic regression model predicting the association between living in an ethnic enclave and preterm births by nativity status, N=1,084,867

Variables	U.S. Born		Foreign born		Interaction model (Enclave X Nativity)	
	OR	95% CI	OR	95% CI	OR	95% CI
Ethnic enclave						
Connected disadvantage	1.24***	1.18,1.31	1.27***	1.20,1.34	1.26***	1.20,1.32
Connected advantage	1.14***	1.07,1.21	1.03	0.98,1.09	1.13***	1.07,1.20
Concentrated disadvantage	1.14***	1.09,1.20	1.04+	0.99,1.09	1.14***	1.09,1.19
Concentrated advantage	1.06*	1.01,1.11	1.02	0.98,1.07	1.05*	1.01,1.10
Disconnected disadvantage	1.09**	1.02,1.15	1.14***	1.06,1.22	1.15***	1.09,1.21
Disconnected advantage	1.07*	1.00,1.14	1.06	0.99,1.13	1.12***	1.06,1.19
Detached disadvantage	1.25***	1.13,1.39	1.04	0.93,1.16	1.31***	1.18,1.44
Anchored disadvantage	1.00	0.91,1.11	0.99	0.90,1.08	1.02	0.93,1.13
Anchored advantage (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Individual level factors						
Nativity						
U.S. Born (ref)	1.00	1.00,1.00			1.00	1.00,1.00
Foreign born			1.00	1.00,1.00	0.88***	0.84,0.92
Latino origin						
Mexican (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Puerto Rican	1.16***	1.11,1.21	1.37***	1.30,1.44	1.23***	1.19,1.27
Cuban	0.97	0.90,1.04	1.00	0.94,1.06	0.98	0.94,1.03
Central/South American	1.08**	1.03,1.12	1.04*	1.01,1.06	1.04***	1.02,1.07
Age						
Maternal age (cont.)	1.02***	1.02,1.03	1.02***	1.02,1.02	1.02***	1.02,1.02
Marital status						
Married (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Unmarried	1.11***	1.08,1.14	1.09***	1.06,1.12	1.10***	1.08,1.12
Missing	1.06+	1.00,1.13	1.01	0.96,1.08	1.04+	1.00,1.08
Education						
8th grade or less (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Some high school	1.01	0.93,1.10	1.03+	1.00,1.06	1.09***	1.06,1.12
High school grad/GED	0.87**	0.80,0.95	1.00	0.97,1.04	1.01	0.98,1.04
Some college/Associates	0.82***	0.76,0.90	0.95*	0.92,0.99	0.96**	0.93,0.99
College +	0.66***	0.60,0.72	0.80***	0.76,0.83	0.79***	0.76,0.81

Variables	U.S. Born		Foreign born		Interaction model (Enclave X Nativity)	
	OR	95% CI	OR	95% CI	OR	95% CI
Missing	0.91	0.80,1.04	1.08*	1.00,1.17	1.08*	1.01,1.15
Insurance						
Medicaid (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Private insurance	0.96**	0.94,0.99	1.02	0.99,1.05	0.98*	0.96,1.00
Self pay	1.21***	1.13,1.29	1.09***	1.05,1.13	1.08***	1.05,1.11
Other	1.08**	1.03,1.14	1.17***	1.12,1.22	1.11***	1.08,1.15
Missing	1.41***	1.18,1.69	1.38***	1.20,1.58	1.38***	1.24,1.53
No. of live births						
Live birth order	1.04***	1.03,1.05	1.01**	1.01,1.02	1.03***	1.02,1.03
Risk factors						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	2.52***	2.46,2.58	2.27***	2.22,2.33	2.39***	2.35,2.43
Smoking						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	1.55***	1.46,1.65	1.49***	1.29,1.71	1.59***	1.51,1.68
Prenatal care						
Early initiation (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
2nd tri/Late/no initiation	1.07***	1.05,1.10	0.96***	0.94,0.98	1.02*	1.00,1.03
Community-level factors						
Social associations (log)	1.02	0.96,1.10	0.97	0.90,1.04	0.99	0.94,1.04
Structural factors						
Isolation index	0.95***	0.93,0.98	0.97*	0.94,1.00	0.97***	0.95,0.99
Dissimilarity index	0.95	0.81,1.12	1.17+	0.98,1.38	1.05	0.93,1.18
Income inequality (log)	1.80***	1.56,2.07	1.26***	1.10,1.44	1.51***	1.37,1.66
Primary care physicians (log)	0.92**	0.87,0.97	0.95	0.90,1.01	0.93***	0.89,0.96
Other primary care (log)	0.98	0.94,1.03	0.99	0.95,1.04	0.99	0.96,1.02
Public health expenditure (log)	1.01	0.99,1.02	1.02**	1.01,1.03	1.01**	1.00,1.02
Waiting period						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	1.00	0.95,1.04	0.99	0.95,1.04	0.99	0.96,1.02
Immigration enforcement score	1.02***	1.01,1.03	1.03***	1.02,1.04	1.03***	1.02,1.03
% of county pop. voting Republican, 2016 (log)	1.07**	1.02,1.13	1.02	0.98,1.07	1.05**	1.02,1.08
% State population change, 2000-2018 (log)	0.99	0.96,1.02	0.97*	0.94,0.99	0.98+	0.96,1.00

Variables	U.S. Born		Foreign born		Interaction model (Enclave X Nativity)	
	OR	95% CI	OR	95% CI	OR	95% CI
% Rural population (log)	0.98*	0.96,1.00	0.95***	0.93,0.97	0.96***	0.95,0.98
% of undocumented pop. in state (log)	1.39***	1.30,1.50	1.28***	1.20,1.36	1.32***	1.26,1.38
Population density (log)	1.00	0.98,1.01	1.02*	1.00,1.03	1.01	1.00,1.02
Interaction term						
Connected disadvantage X U.S. Born					1.00	1.00,1.00
Connected disadvantage X Foreign born					1.00	0.94,1.05
Connected advantage X U.S. Born					1.00	1.00,1.00
Connected advantage X Foreign born					0.93*	0.86,1.00
Concentrated disadvantage X U.S. Born					1.00	1.00,1.00
Concentrated disadvantage X Foreign born					0.93**	0.89,0.98
Concentrated advantage X U.S. Born					1.00	1.00,1.00
Concentrated advantage X Foreign born					0.99	0.94,1.04
Disconnected disadvantage X U.S. Born					1.00	1.00,1.00
Disconnected disadvantage X Foreign born					0.95	0.88,1.03
Disconnected advantage X U.S. Born					1.00	1.00,1.00
Disconnected advantage X Foreign born					0.88**	0.81,0.96
Detached disadvantage X U.S. Born					1.00	1.00,1.00
Detached disadvantage X Foreign born					0.78***	0.68,0.90
Anchored disadvantage X U.S. Born					1.00	1.00,1.00
Anchored disadvantage X Foreign born					0.94	0.82,1.07
Anchored advantage X U.S. Born					1.00	1.00,1.00
Anchored advantage X Foreign born					1.00	1.00,1.00
Constant	0.01***	0.00,0.01	0.01***	0.00,0.02	0.01***	0.01,0.01
N	551,475		533,392		1,084,867	

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

The margins plot of the interaction model revealed similar overall findings (see Figure 6.2). Across all contexts, when compared to their native-born counterparts, foreign-born Latina mothers are expected to experience significantly lower odds of PTB, net of all variables. This finding is especially true for foreign-born Latina mothers who live in connected advantage (aOR=0.93, 95% CI: 0.86,1.00), concentrated disadvantage (aOR=0.93, 95% CI: 0.89,0.98), disconnected advantage (aOR=0.88, 95% CI: 0.81,0.96) and detached disadvantage (aOR=0.78, 95% CI: 0.68,0.90) enclaves. In other areas, this finding was associated with insignificant lower odds of PTB, or with no observed differences by nativity (see Table 6.9).

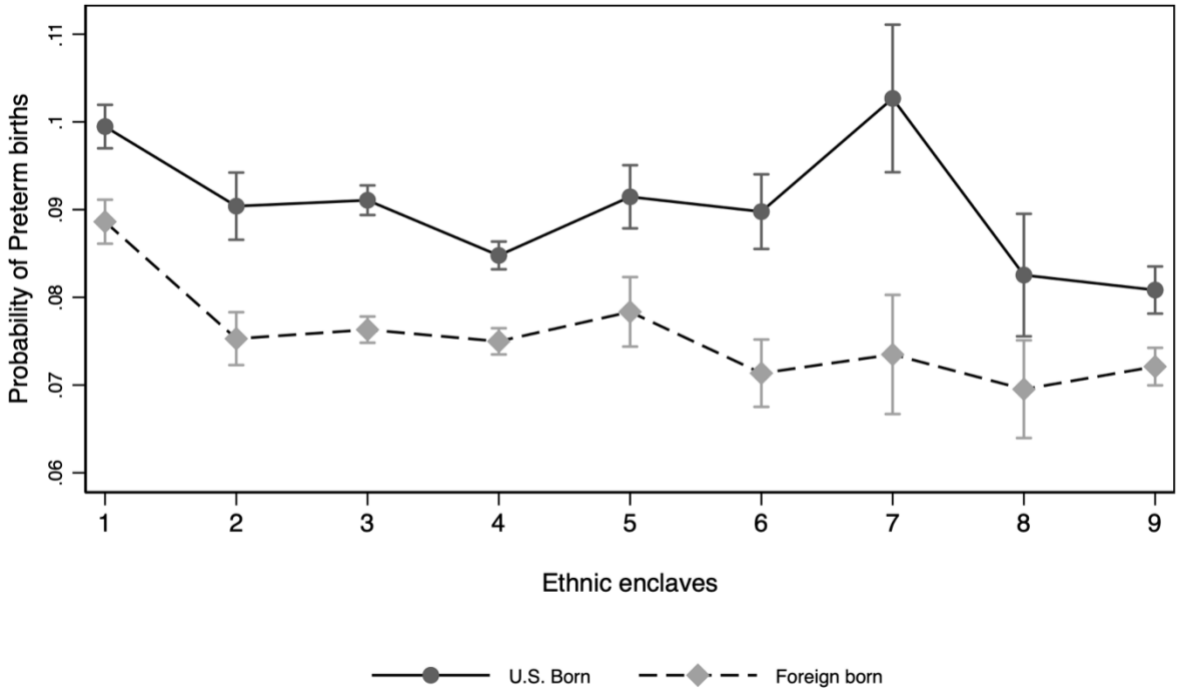


Figure 6.2. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births by nativity status, N=1,084,867
(1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored disadvantage; (9) Anchored advantage.

6.2.2.2 Ethnic enclaves, preterm births and Latino origin

Table 6.11 details the results of the multivariate analyses examining the association between living in an ethnic enclave and PTB by Latino origin and Figure 6.3 illustrates these results. Although Mexican (aOR=1.22, 95% CI: 1.16,1.28) and Puerto Rican (aOR=1.59, 95%

CI: 1.34,1.87) mothers who lived in connected disadvantage enclaves reported the highest odds of PTB, after adjusting for covariates, Cuban mothers who lived in these areas experienced insignificant high (not the highest) odds of PTB (aOR=1.42, 95% CI: 0.92,2.19). Cuban mothers in detached disadvantage enclaves reported the highest odds of PTB (aOR=2.00, 95% CI: 0.90,4.45), relative to their counterparts in anchored advantage enclaves. However, those in connected advantage enclaved experienced significantly high odds of this outcome (aOR=1.52, 95% CI: 1.20,1.92). Although foreign-born status was associated with lower odds of PTB among Mexican, Puerto Rican, and Cuban mothers, this finding was only significant among Mexican mothers (aOR=0.82, 95% CI: 0.81,0.84).

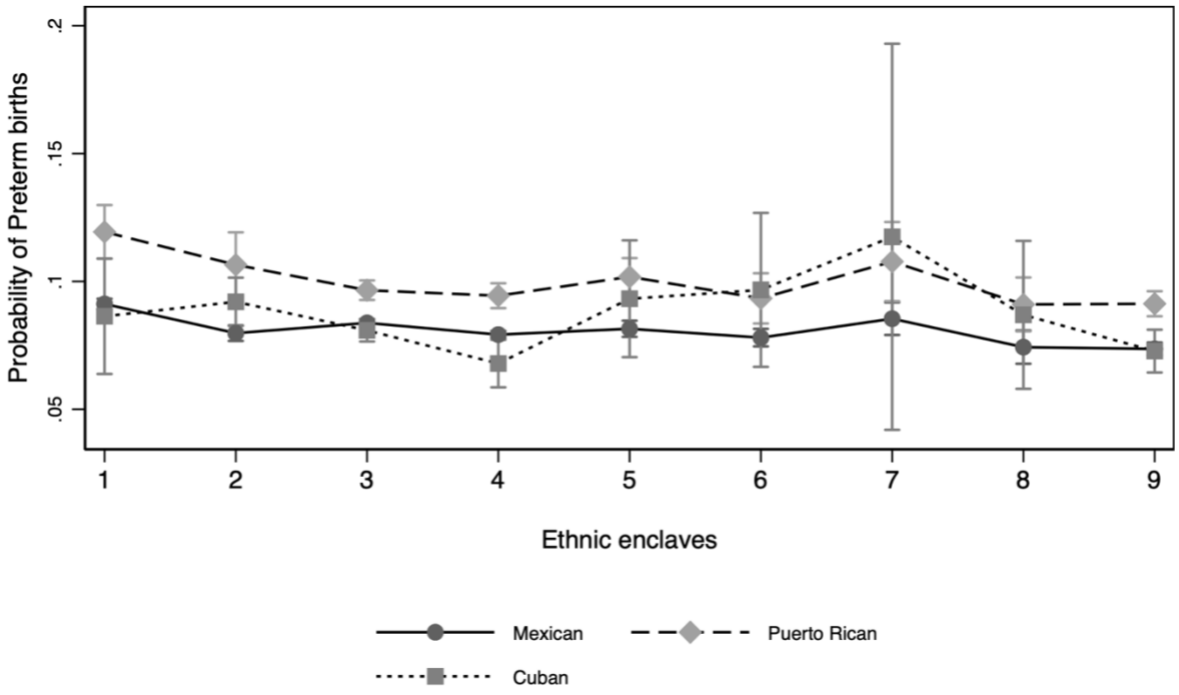


Figure 6.3. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births by Latino origin
Note. (1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored disadvantage; (9) Anchored advantage

Age was significantly associated with a 2% increase in the likelihood of PTB among Mexican, Puerto Rican, and Cuban mothers. Unmarried status was only associated with a significantly higher odds of PTB among mothers of Mexican (aOR=1.11, 95% CI: 1.08,1.13) and

Puerto Rican (aOR=1.09, 95% CI: 1.03,1.15) descent. Completing some college was associated with a significantly higher odds of PTB (aOR=1.07, 95% CI: 1.03,1.11) for Mexican mothers. All stages of advanced education for Cuban mothers (e.g., High school grad/GED (aOR=1.29, 95% CI: 0.83,2.00), some college/Associates (aOR=1.23, 95% CI: 0.79,1.91), and college or higher (aOR=1.02 0.66,1.60) was associated with insignificant higher odds of PTB. Paying for the delivery with private insurance was associated with significantly lower odds of preterm birth for Mexican (aOR=0.98, 95% CI: 0.96,1.00) and Puerto Rican (aOR=0.93, 95% CI: 0.88,0.99) mothers but not for Cuban mothers (aOR=0.99, 95% CI: 0.90,1.09).

An increase in the number of previous live births was only significantly associated with higher odds of PTB among Mexican (aOR=1.03, 95% CI: 1.02,1.04) and Puerto Rican (aOR=1.04, 95% CI: 1.02,1.06) origin. Reporting one or more PTB risk factors, and smoking during pregnancy were associated with significantly higher odds of PTB among Latina mothers of Mexican, Puerto Rican, and Cuban descent. Initiating prenatal care in a later trimester was associated with a higher odds of PTB among Puerto Rican (aOR=1.09, 95% CI: 1.03,1.15) and Cuban (aOR=1.14, 95% CI: 1.03,1.25) mothers but not among mothers of Mexican descent (aOR=1.00, 95% CI: 0.99,1.02). The number of social associations was only significantly associated with a lower odds of PTB among Mexican mothers (aOR=0.92, 95% CI: 0.87,0.99).

Exposure to other Latinos was associated with a significantly lower odds of PTB among Mexican (aOR=0.96, 95% CI: 0.94,0.98) and Puerto Rican (aOR=0.91, 95% CI: 0.82,1.00) mothers. This finding was only marginally significant among mothers of Cuban (aOR=0.81, 95% CI: 0.63,1.03) descent. The dissimilarity index was associated with insignificant higher odds of PTB among Mexican mothers (aOR=1.07, 95% CI: 0.92,1.25) and marginally significant higher odds of PTB for Puerto Rican (aOR=1.40, 95% CI: 0.94,2.10) origin numbers. The likelihood of this outcome was lower and insignificant for Cuban mothers (aOR=0.77, 95% CI: 0.30,1.97). Greater income inequality was associated with higher odds of PTB only among Mexican mothers (aOR=1.87, 95% CI: 1.64,2.14).

A larger ratio of primary care physicians to the population was associated with a significantly lower odds of PTB among Latina mothers of Mexican (aOR=0.95, 95% CI: 0.91,0.99) and Puerto Rican (aOR=1.00, 95% CI: 0.91,1.09) descent, and a larger ratio of other primary care was only associated with significantly lower odds of PTB among Latina mothers of Mexican descent (aOR=1.01, 95% CI: 1.00,1.02). Public health expenditure was not significantly associated with PTB. Mexican mothers who lived in states that adopted the five-year waiting period for lawful immigrants to access health insurance reported lower odds of PTB (aOR=0.95, 95% CI: 0.90,0.99) than their counterparts who did not live in such states. Both mothers of Puerto Rican (aOR=1.03, 95% CI: 0.94,1.13) and Cuban (aOR=1.08, 95% CI: 0.83,1.41) origin experienced insignificant higher odds of premature births.

An increase in immigration enforcement policies was associated with a significantly higher odds of PTB among Mexican mothers (aOR=1.01, 95% CI: 1.00,1.02), with marginal effects for Puerto Rican origin mothers (aOR=1.02, 95% CI: 1.00,1.04) and no effects for Cuban origin mothers. The proportion of the county electorate voting for the Republican candidate in 2016 was associated with a significantly higher odds of PTB among Mexican (aOR=1.06, 95% CI: 1.02,1.11) and Puerto Rican (aOR=1.19, 95% CI: 1.05,1.36) mothers. State population change was only marginally associated with lower odds of PTB for Cuban mothers (aOR=0.86, 95% CI: 0.72,1.02). An increase in the rural population was associated with a lower likelihood of PTB among Mexican (aOR=0.97, 95% CI: 0.95,0.99) and Puerto Rican (aOR=0.94, 95% CI: 0.89,0.99) mothers. This indicator was associated with a marginally significant higher odds of PTB among Cuban mothers (aOR=1.12, 95% CI: 0.99,1.27). An increase in the state undocumented immigrant population was associated with higher odds of PTB among Mexican (aOR=1.47, 95% CI: 1.36,1.59) and Puerto Rican (aOR=1.17, 95% CI: 1.01,1.34) mothers. Increasing population density was only marginally associated with lowers odds of PTB for Mexican mothers (aOR=0.99, 95% CI: 0.98,1.00).

Table 6.11. Logistic regression model predicting the association between living in an ethnic enclave and preterm births by Latino origin, N=886,170

Variables	**Mexican Mothers** n=762,291		**Puerto Rican mothers** n=87,419		**Cuban Mothers** n=36,460	
	OR	95% CI	OR	95% CI	OR	95% CI
Ethnic enclave						
Connected disadvantage	1.22***	1.16,1.28	1.59***	1.34,1.87	1.42	0.92,2.19
Connected advantage	1.08**	1.02,1.14	1.26**	1.07,1.49	1.52***	1.20,1.92
Concentrated disadvantage	1.11***	1.06,1.16	1.18***	1.08,1.29	1.40***	1.17,1.68
Concentrated advantage	1.05*	1.01,1.10	1.12*	1.03,1.23	1.03	0.81,1.31
Disconnected disadvantage	1.11***	1.05,1.18	1.17*	1.04,1.32	1.26	0.89,1.80
Disconnected advantage	1.06+	1.00,1.12	1.06	0.92,1.21	1.21	0.78,1.88
Detached disadvantage	1.16**	1.05,1.27	1.21+	0.99,1.48	2.00+	0.90,4.45
Anchored disadvantage	1.00	0.90,1.11	0.95	0.82,1.11	1.37	0.87,2.16
Anchored advantage (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Individual level factors						
Nativity						
U.S. Born (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Foreign born	0.82***	0.81,0.84	0.96	0.91,1.01	0.95	0.87,1.04
Age						
Maternal age (cont.)	1.02***	1.02,1.03	1.02***	1.02,1.03	1.02***	1.01,1.03
Marital status						
Married (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Unmarried	1.11***	1.08,1.13	1.09**	1.03,1.15	1.06	0.96,1.15
Missing	1.08**	1.02,1.14	1.02	0.86,1.22	0.95	0.62,1.45
Education						
8th grade or less (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Some high school	1.07***	1.03,1.11	0.86	0.72,1.03	1.47+	0.93,2.33
High school grad/GED	0.99	0.96,1.03	0.75**	0.63,0.90	1.29	0.83,2.00
Some college/Associates	0.94***	0.90,0.97	0.70***	0.59,0.84	1.23	0.79,1.91
College +	0.75***	0.72,0.79	0.60***	0.50,0.72	1.02	0.66,1.60
Missing	1.10*	1.02,1.19	0.72+	0.51,1.02	1.18	0.65,2.13
Insurance						
Medicaid (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Private insurance	0.98*	0.96,1.00	0.93*	0.88,0.99	0.99	0.90,1.09

Variables	Mexican Mothers n=762,291		Puerto Rican mothers n=87,419		Cuban Mothers n=36,460	
	OR	95% CI	OR	95% CI	OR	95% CI
Self-pay	1.11***	1.07,1.15	1.08	0.89,1.30	1.17	0.86,1.58
Other	1.11***	1.06,1.15	1.10	0.96,1.26	1.31*	1.01,1.70
Missing	1.40***	1.23,1.59	1.11	0.69,1.78	2.54*	1.04,6.19
No. of live births						
Live birth order	1.03***	1.02,1.04	1.04***	1.02,1.06	1.03	0.98,1.07
Risk factors						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	2.43***	2.39,2.48	2.02***	1.91,2.14	2.50***	2.27,2.75
Smoking						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	1.64***	1.53,1.76	1.53***	1.38,1.69	1.41*	1.03,1.93
Prenatal care						
Early initiation (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
2nd tri/Late/no initiation	1.00	0.99,1.02	1.09**	1.03,1.15	1.14*	1.03,1.25
Community-level factors						
Social associations (log)	0.92*	0.87,0.99	1.09	0.96,1.24	0.98	0.64,1.50
Structural factors						
Isolation index	0.96***	0.94,0.98	0.91*	0.82,1.00	0.81+	0.63,1.03
Dissimilarity index	1.07	0.92,1.25	1.40+	0.94,2.10	0.77	0.30,1.97
Income inequality (log)	1.87***	1.64,2.14	1.25	0.91,1.72	0.63	0.27,1.45
Primary care physicians (log)	0.94*	0.90,0.99	0.83*	0.71,0.97	0.79	0.55,1.16
Other primary care (log)	0.95*	0.91,0.99	1.00	0.91,1.09	1.09	0.83,1.43
Public health expenditure (log)	1.01	1.00,1.02	0.99	0.97,1.01	0.98	0.91,1.06
Waiting period						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	0.95*	0.90,0.99	1.03	0.94,1.13	1.08	0.83,1.41
Immigration enforcement score	1.01*	1.00,1.02	1.02+	1.00,1.04	1.01	0.95,1.08
% of county pop. voting Republican, 2016 (log)	1.06**	1.02,1.11	1.19**	1.05,1.36	0.79	0.58,1.08
% State population change, 2000-2018 (log)	0.98	0.96,1.01	1.04	0.98,1.10	0.86+	0.72,1.02
% Rural population (log)	0.97*	0.95,0.99	0.94*	0.89,0.99	1.12+	0.99,1.27
% of undocumented pop. in state (log)	1.47***	1.36,1.59	1.17*	1.01,1.34	1.12	0.85,1.46
Population density (log)	0.99+	0.98,1.00	0.98	0.94,1.02	1.04	0.94,1.14

Variables	**Mexican Mothers** n=762,291		**Puerto Rican mothers** n=87,419		**Cuban Mothers** n=36,460	
	OR	95% CI	OR	95% CI	OR	95% CI
Constant	0.01***	0.00,0.01	0.04***	0.01,0.20	0.44	0.01,31.96
N	762,291		87,419		36,460	

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

6.2.2.3 Sensitivity analyses

I conducted the same sensitivity analyses from aim 1 (i.e., collapsing anchored advantage enclaves and anchored disadvantage enclaves; using the larger enclave group, and Latino the association between living in an ethnic enclave and low birthweight) by nativity status and Latino origin and found similar overall patterns (see Appendix I, Figures 1-5).

1.4.1 Summary of aim 2 results

In the interaction model, foreign-born Latina mothers reported significantly lower odds of PTB compared to their U.S.-born counterparts in almost all contexts. The stratified models showed that living in particular enclaves disparately influences the likelihood of giving birth prematurely: unlike the foreign-born, the U.S. born in almost all enclaves were significantly more likely to report higher odds of PTB than their counterparts in anchored advantage areas. These results also varied by Latino origin, such that, there were differences in Mexican, Puerto Rican, and Cuban origin mothers' likelihood of giving birth prematurely based on where they lived. For instance, though Mexican and Puerto Rican origin mothers who live in connected disadvantage enclaves experienced the highest odds of PTB, after adjusting for covariates, mothers of Cuban descent who lived in these areas experienced insignificant high odds of PTB. Instead, Cuban origin mothers experienced the highest significant odds of premature births in connected advantage enclaves.

6.3 Aim 3 results

The goal of aim 3 was to investigate if the association between living in an ethnic enclave and PTB among Latina mothers is modified by the number of immigration enforcement policies in the enclave after adjusting for individual-, community-, structural-level covariates.

Sub aim 3.1. Assess differences in the distribution of PTB by enclave type and immigration enforcement policies.

Sub aim 3.2. Assess differences in the distribution of PTB by enclave type, immigration enforcement policies, and Latino origin.

H3.1. Immigration enforcement policies will modify the association between living in an ethnic enclave and PTB, such that a one unit increase in these policies will result in higher odds of PTB, with greater effects for Latina mothers in detached disadvantage vs. anchored advantage enclaves (i.e., Given the salience of residential segregation and the greater levels of policing in places with more Black and Latino people (Garcia-Hallett et al., 2020; Andrea Gómez Cervantes, 2019), those in detached disadvantaged enclaves will have the highest odds of PTB as immigration enforcement policies increase).

H3.2. Immigration enforcement policies will modify the association between living in an ethnic enclave and PTB, such that a one unit increase in these policies will result in higher odds of PTB, with differences by Latino origin. These effects will be greater for Latinas of Mexican, Cuban, and Puerto Rican descent living in detached disadvantage vs. anchored advantage enclaves.

6.3.1 Bivariate analyses

6.3.1.1 Immigration enforcement policies

Table 6.12 focuses on immigration enforcement policies, and includes the mean number of immigration enforcement policies for categorical and binary variables. Correlations are presented for continuous variables. There were significant differences in the mean number of immigration enforcement policies and preterm births ($p<0.001$), as mothers who gave birth prematurely were slightly more likely to live in areas with more immigration enforcement policies (M=2.8, SD=2.5 vs. M=2.9, SD=2.5). While disconnected disadvantage enclaves had more of such policies (M=4.5, SD=1.9), concentrated advantage enclaves had the fewest (M=1.6, SD=2.2) of these policies in place. Other enclaves fell between this range and were significantly different in their immigration enforcement policy climate ($p<0.001$). Foreign-born Latinas were also significantly more likely than their U.S. born counterparts to live in places with more immigration enforcement policies (M=2.9, SD=2.5 vs. M=2.7, SD=2.5, respectively). Latina mothers of Cuban descent were almost twice as likely than Mexican mothers to live in areas

with more immigration enforcement policies (M=4.7, SD=1.6 vs. M=2.6, SD=2.5, respectively). Places that largely included mothers of Puerto Rican (M=3.0, SD=2.3) and Central/South American (M=3.1, SD=2.4) origin had a similar number of immigration enforcement policies.

An increase in maternal age was negatively associated with more immigration enforcement policies (r(1,084,865)= -0.06, p<.001). The majority of individuals who were missing a response for the marital status question lived in areas with less than one immigration enforcement policy (M=0.1, SD=0.3). Those who were married (M=4.2, SD=2.0) or unmarried (M=3.9, SD=2.1) were significantly more likely to have close to four or more of such policies. On average, there were significant differences based on education. However, regardless of educational attainment, Latinas were also significantly more likely to live in areas with 2.5 or more immigration enforcement policies. Those who were missing this response were (M=1.5, SD=2.2). Those who reported self-pay as their form of insurance were more likely to live in areas with four or more immigration enforcement policies (M=4.1, SD=2.2). Latina mothers who had Medicaid were more likely to live in contexts with less immigration enforcement policies (M=2.7, SD=2.5). An increase in the number of children born to a mother was negatively associated with more immigration enforcement policies (r(1,084,865)= -0.01, p<.001). The were no significant differences by preterm birth risk factors (p= 0.150). However, those who smoked during pregnancy were significantly more likely to live in areas with more immigration enforcement policies (M=3.1, SD=2.3 vs. M=2.8, SD=2.5) and Latina mothers who initiated prenatal care at a much later stage were significantly more likely to live in areas with more of these policies (M=3.3, SD=2.4 vs. M=2.6, SD=2.5).

An increase in the number of social associations was positively associated with having more immigration enforcement policies (r(1,084,865) = 0.06, p<.001). The South (M=5.2, SD=0.9) had significantly more immigration enforcement policies than any other region (Northeast (M=1.8, SD=2.0), Midwest (M=1.7, SD=2.0), West (M=1.1, SD=1.8)). Areas in the US-Mexico Border Region also had significantly more immigration enforcement policies than

non-Border areas (M=3.7, SD=2.1 vs. M=2.7, SD=2.5). Counties that had less immigrant integration policies had more immigration enforcement policies: places that did not provide drivers licenses to undocumented immigrants (M=4.5, SD=1.8), extend health insurance to lawful immigrants without a five-year wait (M=4.8, SD=1.5), adopt Medicaid expansion (M=5.3, SD=0.6), or provide health insurance to undocumented children (M=4.6, SD=1.6) had significantly more immigration enforcement policies.

Exposure to other Latinos, as measured with the isolation index (r(1,084,865)= -0.08, p<.001), the unevenness between Latinos and white residents (r(1,084,865)= -0.39, p<.001), income inequality (r(1,084,865)= -0.28, p<.001), the ratio of other primary care providers (r(1,084,865)= -0.48, p<.001), public health expenditure (r(1,084,865)= -0.48, p<.001), immigrant integration policies (r(1,084,865)= -0.90, p<.001), having a greater share of the Hispanic (r(1,084,865)= -0.35, p<.001) and foreign-born (r(1,084,865)= -0.57, p<.001) population at the state level, and greater population density (r(1,084,865)= -0.20, p<.001) were each significantly associated with fewer immigration enforcement policies (p=<.001). Conversely, the ratio of primary care physicians to the population (r(1,084,865) =0.16, p<.001), the share of the county electorate voting for the Republican candidate in the 2016 presidential election (r(1,084,865) =0.47, p<.001), population change since 2000 (r(1,084,865)= -0.70, p<.001), the proportion of the county rural population (r(1,084,865) =0.14, p<.001), and a larger state undocumented immigrant population (r(1,084,865) =0.44, p<.001) were each significantly associated with more immigration enforcement policies (p=<.001).

Table 6.12. Immigration enforcement score by study variables, N=1,084,867

Variables	Mean (SD)	pvalue[a]
Preterm birth		0.00
37+ weeks	2.8 (2.5)	
Under 37 weeks	2.9 (2.5)	
Ethnic enclave		0.00
Connected disadvantage	2.6 (2.6)	
Connected advantage	2.5 (2.7)	
Concentrated disadvantage	3.5 (2.3)	
Concentrated advantage	1.6 (2.2)	
Disconnected disadvantage	4.5 (1.9)	

Variables	Mean (SD)	pvalue[a]
Disconnected advantage	3.6 (2.5)	
Detached disadvantage	4.1 (1.0)	
Anchored disadvantage	3.4 (1.9)	
Anchored advantage (ref)	3.3 (2.2)	
Individual level factors		
Nativity		0.00
U.S. Born (ref)	2.7 (2.5)	
Foreign born	2.9 (2.5)	
Latino origin		0.00
Mexican (ref)	2.6 (2.5)	
Puerto Rican	3.0 (2.3)	
Cuban	4.7 (1.6)	
Central/South American	3.1 (2.4)	
Age	-0.06	0.00
Maternal age (cont.)		
Marital status		0.00
Married	4.2 (2.0)	
Unmarried	3.9 (2.1)	
Missing	0.1 (0.3)	
Education		0.00
8th grade or less (ref)	2.5 (2.5)	
Some high school	2.9 (2.5)	
High school grad/GED	2.8 (2.5)	
Some college/Associates	2.7 (2.5)	
College +	2.9 (2.5)	
Missing	1.5 (2.2)	
Insurance		0.00
Medicaid (ref)	2.7 (2.5)	
Private insurance	2.6 (2.5)	
Self pay	4.1 (2.2)	
Other	3.6 (2.3)	
Missing	3.9 (2.2)	
No. of live births		
Live birth order	-0.01	0.00
Risk factors		0.15
No (ref)	2.8 (2.5)	
Yes	2.8 (2.5)	
Smoking		0.00
No (ref)	2.8 (2.5)	
Yes	3.1 (2.3)	
Prenatal care		0.00
Early initiation (ref)	2.6 (2.5)	
2nd tri/Late/no initiation	3.3 (2.4)	
Community-level factors		
Social associations (log)	0.06	0.00
Structural factors		
Region		0.00
Northeast	1.8 (2.0)	
Midwest	1.7 (2.0)	
South	5.2 (0.9)	

Variables	Mean (SD)	pvalue[a]
West	1.1 (1.8)	
Border region		0.00
US Non-Border Region	2.7 (2.5)	
US-Mexico Border Region	3.7 (2.1)	
Driver's license		0.00
No	4.5 (1.8)	
Yes	0.8 (1.5)	
Five-year waiting period		0.00
No	4.8 (1.5)	
Yes	0.8 (1.5)	
Medicaid expansion		0.00
Not adopted	5.3 (0.6)	
Adopted	1.3 (1.9)	
Health insurance for undocumented. children		0.00
No	4.6 (1.6)	
Yes	0.6 (1.3)	
Isolation index	-0.08	0.00
Dissimilarity index	-0.39	0.00
Income inequality	-0.28	0.00
Primary care physicians	0.16	0.00
Other primary care, not physicians	-0.48	0.00
Public health expenditure	-0.48	0.00
Immigrant integration policies (0-4)	-0.90	0.00
% of voting Republican	0.47	0.00
% population change since 2000	0.70	0.00
% rural population in county	0.14	0.00
% state Hispanic pop	-0.35	0.00
% state foreign-born pop	-0.57	0.00
State undocumented immigrant population	0.44	0.00
Population density	-0.20	0.00

[a]p-value assessed with anova, ttests, and correlations.

6.3.2 Multivariate analyses

6.3.2.1 Ethnic enclaves, immigration enforcement, and preterm births

Table 6.13 presents the results of the multivariate logistic interaction models predicting preterm birth in the context of immigration enforcement policies. In almost all enclaves, as the number of immigration enforcement policies increased, the likelihood of premature births decreased. However, the difference between the likelihood of PTB corresponding to a unit increase in immigration enforcement score among Latina mothers in anchored advantaged enclaves and Latina mothers residing in detached disadvantage enclaves (aOR=1.15, 95% CI:1.07,1.23) was significantly greater than the difference in the odds of PTB for other areas. In

concentrated advantage (aOR=0.98, 95% CI:0.97,0.99), disconnected disadvantage (aOR=0.98, 95% CI: 0.96, 1.00), and disconnected advantage (aOR=0.96, 95% CI:0.94,0.98) enclaves, this difference was significantly lower.

Table 6.13. Logistic regression model predicting the association between ethnic enclaves, immigration enforcement, and preterm births, N=1,084,867

Variables	aOR	95% CI
Ethnic enclave		
Connected disadvantage	1.26***	1.19,1.34
Connected advantage	1.06+	0.99,1.13
Concentrated disadvantage	1.13***	1.07,1.20
Concentrated advantage	1.10***	1.04,1.16
Disconnected disadvantage	1.22***	1.11,1.34
Disconnected advantage	1.21***	1.12,1.31
Detached disadvantage	0.65**	0.47,0.88
Anchored disadvantage	1.09	0.94,1.25
Anchored advantage (ref)	1.00	1.00,1.00
Individual level factors		
Nativity		
U.S. Born (ref)	1.00	1.00,1.00
Foreign born	0.85***	0.84,0.86
Latino origin		
Mexican (ref)	1.00	1.00,1.00
Puerto Rican	1.23***	1.19,1.27
Cuban	0.98	0.94,1.03
Central/South American	1.04***	1.02,1.07
Age		
Maternal age (cont.)	1.02***	1.02,1.02
Marital status		
Married (ref)	1.00	1.00,1.00
Unmarried	1.10***	1.08,1.12
Missing	1.03	0.99,1.08
Education		
8th grade or less (ref)	1.00	1.00,1.00
Some high school	1.08***	1.05,1.12
High school grad/GED	1.01	0.98,1.04
Some college/Associates	0.95**	0.93,0.98
College +	0.78***	0.76,0.81
Missing	1.08*	1.01,1.15
Insurance		
Medicaid (ref)	1.00	1.00,1.00
Private insurance	0.98*	0.96,1.00
Self-pay	1.08***	1.04,1.11
Other	1.11***	1.07,1.14
Missing	1.39***	1.25,1.55
No. of live births		
Live birth order	1.03***	1.02,1.04
Risk factors		
No (ref)	1.00	1.00,1.00

Variables	aOR	95% CI
Yes	2.39***	2.35,2.44
Smoking		
No (ref)	1.00	1.00,1.00
Yes	1.60***	1.52,1.69
Prenatal care		
Early initiation (ref)	1.00	1.00,1.00
2nd tri/late/no initiation	1.02*	1.00,1.03
Community-level factors		
Social associations (log)	0.98	0.93,1.03
Structural factors		
Isolation index	0.97**	0.95,0.99
Dissimilarity index	1.04	0.91,1.18
Income inequality (log)	1.45***	1.32,1.60
Primary care physicians (log)	0.92***	0.88,0.96
Other primary care (log)	0.99	0.95,1.02
Public health expenditure (log)	1.01**	1.01,1.02
Waiting period		
No (ref)	1.00	1.00,1.00
Yes	1.00	0.97,1.03
Immigration enforcement score	1.04***	1.02,1.05
% of county pop. voting Republican, 2016 (log)	1.05**	1.01,1.09
% State population change, 2000-2018 (log)	0.97*	0.95,0.99
% Rural population (log)	0.97***	0.96,0.99
% of undocumented pop. in state (log)	1.35***	1.28,1.41
Population density (log)	1.00	0.99,1.01
Interaction term		
Connected disadvantage X Enforcement score	1.00	0.98,1.01
Connected advantage X Enforcement score	1.01	1.00,1.03
Concentrated disadvantage X Enforcement score	0.99	0.98,1.01
Concentrated advantage X Enforcement score	0.98**	0.97,0.99
Disconnected disadvantage X Enforcement score	0.98*	0.96,1.00
Disconnected advantage X Enforcement score	0.96***	0.94,0.98
Detached disadvantage X Enforcement score	1.15***	1.07,1.23
Anchored disadvantage X Enforcement score	0.97	0.94,1.01
Anchored advantage X Enforcement score (ref)	1.00	1.00,1.00
Constant	0.01***	0.01,0.01
N	1,084,867	

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

In addition, when there were less immigration enforcement policies, Latina mothers in detached disadvantage enclaves experienced the lowest odds of PTB (see Figure 6.4 and Figure 6.5). The margins plots predicting the probability of preterm births illustrates the highest likelihood of preterm birth among Latina mothers in detached disadvantage enclaves as immigration enforcement policies increased.

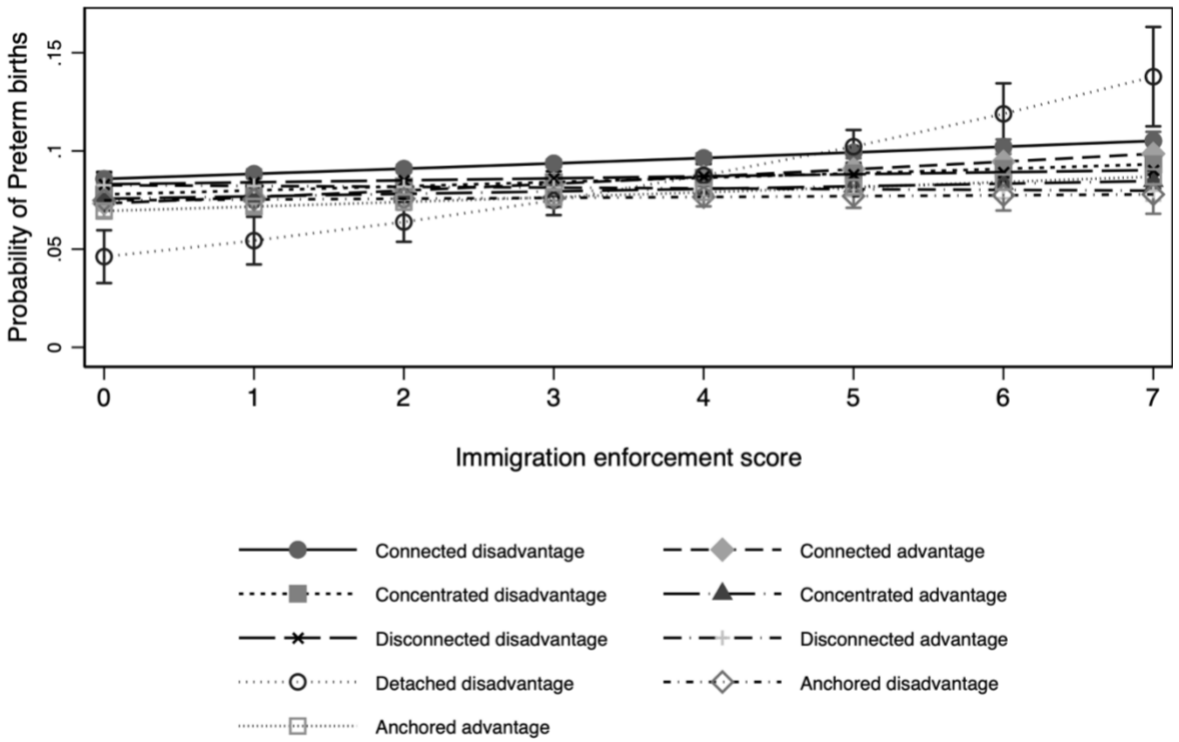


Figure 6.4. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies, and preterm births, single graph, N=1,084,867

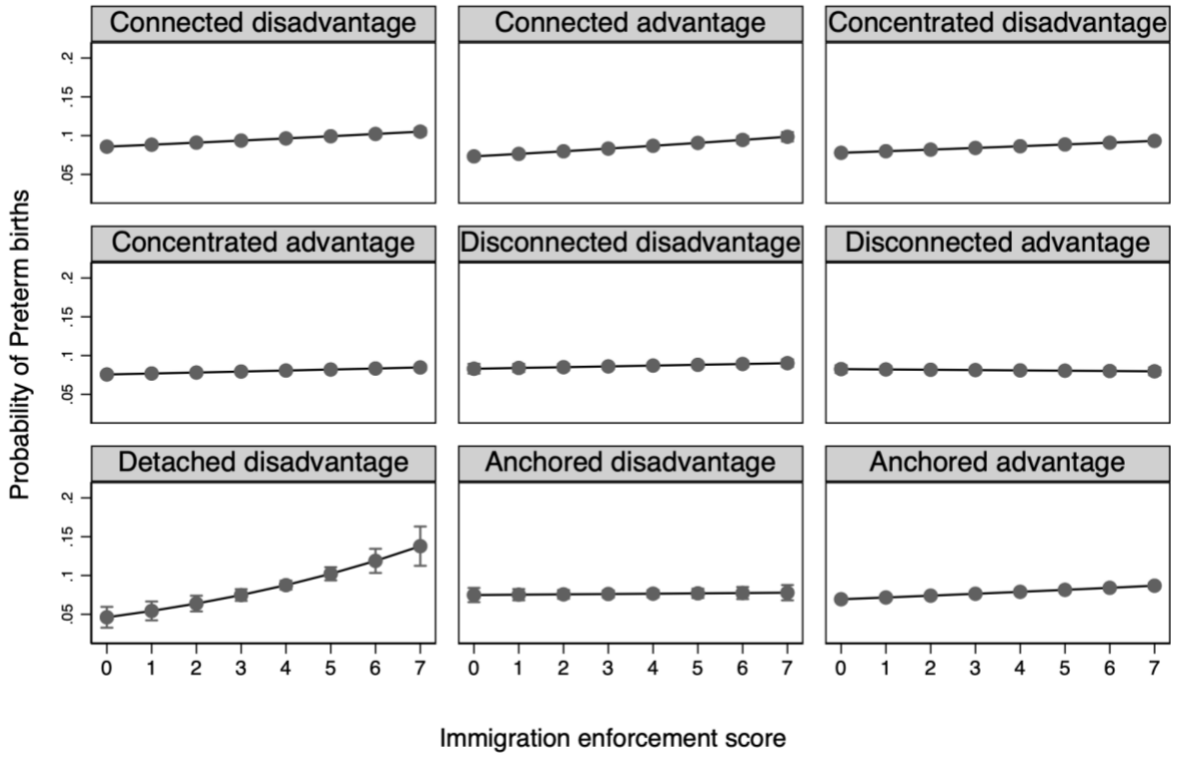


Figure 6.5. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies, and preterm births, multiple graphs, N=1,084,867

6.3.2.2 Ethnic enclaves, immigration enforcement, and preterm births by Latino origin

Table 6.14 presents the results of the multivariate logistic interaction models predicting preterm birth across Latino origin groups in the context of immigration enforcement. Figure 6.6 illustrates these results. Similar patterns from the overall model held when the regression models were stratified by Latino origin. The difference between the odds of PTB corresponding to a unit increase in the immigration enforcement score among Mexican mothers in anchored advantaged enclaves and Mexican mothers residing in detached disadvantage enclaves (aOR=1.21, 95% CI:1.10,1.32) was significantly higher than the difference in the odds of PTB for other areas, especially concentrated advantage (aOR=0.98, 95% CI:0.95,0.98), disconnected disadvantage (aOR=0.97, 95% CI:0.95,1.00), and disconnected advantage (aOR=0.94, 95% CI:0.92,0.96) enclaves.

Among Puerto Rican origin mothers, the difference between the odds of PTB corresponding to a unit increase in the immigration enforcement score among residents in anchored advantaged enclaves and those in connected disadvantage was significantly lower than the difference in the odds of PTB for other areas (aOR=0.92, 95% CI:0.87,0.98). However, among Cuban origin mothers, the difference between the odds of PTB corresponding to a unit increase in the immigration enforcement score among residents in anchored advantaged enclaves and those in connected disadvantage was significantly lower than the difference in the odds of PTB for other areas (aOR=0.84, 95% CI:0.71,0.99).

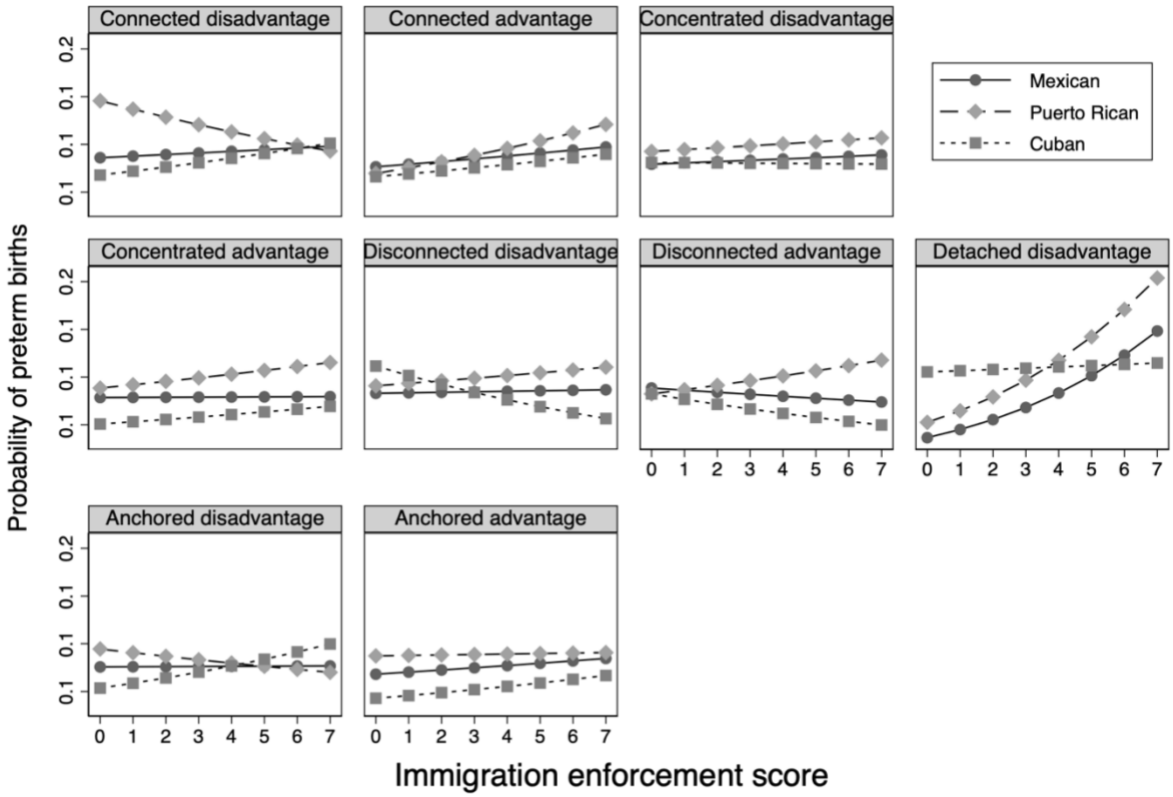


Figure 6.6. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies, and preterm births by Latino origin, N=886,170

Table 6.14. Logistic regression model predicting the association between ethnic enclaves, immigration enforcement, and preterm births by Latino origin, N=886,170

Variables	**Mexican Mothers** n=762,291		**Puerto Rican mothers** n=87,419		**Cuban Mothers** n=36,460	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Ethnic enclave						
Connected disadvantage	1.29***	1.19,1.40	1.80***	1.44,2.24	1.63	0.81,3.28
Connected advantage	1.14**	1.05,1.23	0.78	0.44,1.40	1.59	0.63,4.02
Concentrated disadvantage	1.18***	1.09,1.28	1.07	0.90,1.27	1.98*	1.17,3.37
Concentrated advantage	1.17***	1.09,1.26	1.01	0.87,1.18	1.20	0.74,1.92
Disconnected disadvantage	1.24***	1.10,1.40	1.05	0.78,1.40	2.84*	1.21,6.66
Disconnected advantage	1.33***	1.20,1.48	0.94	0.77,1.14	2.02+	0.99,4.10
Detached disadvantage	0.51**	0.34,0.77	0.58	0.25,1.34	2.66	0.11,67.32
Anchored disadvantage	1.12	0.93,1.35	1.09	0.79,1.51	1.26	0.31,5.18
Anchored advantage (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Individual level factors						
Nativity						
U.S. Born (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Foreign born	0.83***	0.81,0.84	0.96	0.91,1.01	0.95	0.87,1.05
Age						
Maternal age (cont.)	1.02***	1.02,1.03	1.02***	1.02,1.03	1.02***	1.01,1.03
Marital status						
Married (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Unmarried	1.11***	1.08,1.13	1.09**	1.03,1.15	1.06	0.97,1.16
Missing	1.05+	0.99,1.12	1.03	0.85,1.24	0.96	0.61,1.52
Education						
8th grade or less (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Some high school	1.07***	1.03,1.11	0.86+	0.72,1.03	1.48+	0.94,2.33
High school grad/GED	0.99	0.96,1.03	0.75**	0.63,0.90	1.29	0.83,2.00
Some college/Associates	0.93***	0.90,0.97	0.70***	0.59,0.84	1.23	0.79,1.92
College +	0.75***	0.72,0.78	0.60***	0.50,0.72	1.03	0.66,1.60
Missing	1.11*	1.02,1.20	0.72+	0.51,1.02	1.18	0.65,2.13
Insurance						
Medicaid (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Private insurance	0.98*	0.96,1.00	0.93*	0.88,0.98	0.99	0.90,1.09

Variables	Mexican Mothers n=762,291		Puerto Rican mothers n=87,419		Cuban Mothers n=36,460	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Self pay	1.10***	1.06,1.15	1.08	0.89,1.30	1.17	0.86,1.58
Other	1.10***	1.06,1.15	1.12	0.98,1.28	1.33*	1.03,1.73
Missing	1.41***	1.24,1.61	1.10	0.69,1.75	2.53*	1.04,6.18
No. of live births						
Live birth order	1.03***	1.02,1.04	1.04***	1.02,1.06	1.03	0.98,1.07
Risk factors						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	2.44***	2.39,2.49	2.02***	1.91,2.14	2.50***	2.27,2.76
Smoking						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	1.65***	1.54,1.77	1.53***	1.38,1.69	1.40*	1.02,1.92
Prenatal care						
Early initiation (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
2nd tri/late/no initiation	1.01	0.99,1.03	1.08**	1.03,1.14	1.13*	1.03,1.25
Community-level factors						
Social associations (log)	0.90**	0.85,0.96	1.09	0.96,1.25	1.05	0.68,1.62
Structural factors						
Isolation index	0.97**	0.95,0.99	1.01	0.91,1.12	0.76+	0.57,1.01
Dissimilarity index	1.00	0.84,1.19	1.62*	1.03,2.55	0.81	0.31,2.13
Income inequality (log)	1.74***	1.51,2.00	1.09	0.78,1.52	0.61	0.26,1.45
Primary care physicians (log)	0.94*	0.89,0.99	0.86+	0.72,1.02	0.76	0.50,1.16
Other primary care (log)	0.95*	0.91,1.00	0.97	0.89,1.06	1.2	0.89,1.62
Public health expenditure (log)	1.02**	1.00,1.03	0.99	0.97,1.02	0.98	0.90,1.07
Waiting period						
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Yes	0.96+	0.91,1.00	0.99	0.90,1.10	1.16	0.86,1.56
Immigration enforcement score	1.03***	1.02,1.05	1.01	0.97,1.04	1.07	0.97,1.18
% of county pop. voting Republican, 2016 (log)	1.07**	1.02,1.12	1.16*	1.01,1.33	0.8	0.58,1.11
% State population change, 2000-2018 (log)	0.97*	0.94,1.00	1.03	0.96,1.11	0.88	0.72,1.07
% Rural population (log)	0.98*	0.96,1.00	0.92**	0.86,0.97	1.13+	0.99,1.28
% of undocumented pop. in state (log)	1.50***	1.38,1.62	1.11	0.95,1.30	1.04	0.77,1.40
Population density (log)	0.99*	0.97,1.00	0.98	0.93,1.02	1.03	0.94,1.13

Variables	Mexican Mothers n=762,291		Puerto Rican mothers n=87,419		Cuban Mothers n=36,460	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Interaction term						
Connected disadvantage X Enforcement score	0.99	0.97,1.01	0.92**	0.87,0.98	1.00	0.85,1.16
Connected advantage X Enforcement score	1.00	0.98,1.03	1.09	0.98,1.20	0.98	0.84,1.15
Concentrated disadvantage X Enforcement score	0.98+	0.97,1.00	1.02	0.98,1.06	0.93	0.84,1.03
Concentrated advantage X Enforcement score	0.97***	0.95,0.98	1.04	0.99,1.09	0.98	0.87,1.10
Disconnected disadvantage X Enforcement score	0.97*	0.95,1.00	1.03	0.96,1.09	0.84*	0.71,0.99
Disconnected advantage X Enforcement score	0.94***	0.92,0.96	1.05	0.99,1.12	0.86	0.72,1.04
Detached disadvantage X Enforcement score	1.21***	1.10,1.32	1.24+	0.97,1.59	0.95	0.43,2.08
Anchored disadvantage X Enforcement score	0.97	0.92,1.02	0.95	0.87,1.03	1.03	0.76,1.40
Anchored advantage X Enforcement score (ref)	1.00	1.00,1.00	1.00	1.00,1.00	1.00	1.00,1.00
Constant	0.01***	0.00,0.01	0.06**	0.01,0.34	0.23	0.00,20.10

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

6.3.2.3 Sensitivity analyses

In sensitivity analyses, I also investigated the association between ethnic enclaves, preterm births, and immigration enforcement policies using the mean (2.78), median (4.0) and a binary measure (0 policies or 1+ policies). When immigration enforcement policies were above the median, these models predicted significantly higher odds of preterm birth in connected advantage vs. anchored advantage enclaves, and detached disadvantage vs. anchored advantage enclaves (Appendix J, Figure 4). When immigration enforcement policies were above the mean, residents experienced significantly higher odds of preterm birth in connected advantage vs. anchored advantage enclaves, and connected disadvantage vs. anchored advantage enclaves (Appendix J, Figure 5). The binary measure excluded detached enclaves because there were no classified counties with zero immigration enforcement policies. However, the difference in the odds of PTB associated with having none or one or more of such policies was significantly higher for residents in connected advantage and anchored disadvantage enclaves, when compared to the difference for those in anchored advantage enclaves.

6.3.3 Summary of aim 3 results

Overall, these results suggest that an increase in the number of immigration enforcement policies in enclaves did not result in universally higher odds of PTB. Latina mothers in concentrated advantage, disconnected disadvantage, and disconnected disadvantage enclaves experienced significantly lower odds of preterm births as immigration enforcement policies increased. However, there were greater positive effects for Latina mothers in detached disadvantage vs. anchored advantage enclaves. A similar pattern held among Mexican origin mothers but not among mothers of Puerto Rican or Cuban origin.

6.3.4 Summary of results

There are five primary takeaways from this chapter. First, compared to Latina residents in anchored advantage enclaves, those who live in almost all other enclave types (except anchored disadvantage enclaves) report significantly higher odds of PTB, net of all covariates

(aim 1). This finding is robust to different enclave specifications. Second, the interaction and stratified models in aim 2 reveal that these results vary by nativity and Latino origin. In almost all enclaves, foreign-born Latina mothers experienced lower odds of PTB when compared to their U.S.-born counterparts. Third, these results varied by Latino origin, such that there were differences in Mexican, Puerto Rican and Cuban mothers' likelihood of giving birth prematurely based on where they live.

Fourth, an increase in immigration enforcement policies resulted in different impacts on PTB across enclaves (aim 3). Notably, Latina mothers in detached disadvantage enclaves (when compared to their counterparts in anchored advantage enclaves) were the only group to experience significantly higher odds of PTB as immigration enforcement policies increased. Fifth, there are differences in the influence of ethnic enclaves on PTB by immigration enforcement policies and Latino origin, such that a unit increase in immigration enforcement score disparately impacted Mexican, Puerto Rican, and Cuban mothers' likelihood of giving birth prematurely. In the context of increasing immigration enforcement policies, only Mexican origin mothers in detached disadvantaged enclaves experienced significantly higher odds of preterm birth when compared to their counterparts in anchored advantage enclaves.

CHAPTER 7. DISCUSSION AND CONCLUSION

This chapter highlights the main findings, strengths and limitations, and the implications, of this study. I offer explanations and interpretations of study findings by aim. Aim 1 focuses on the central question of the dissertation (e.g., what is the association between living in an ethnic enclave and PTB?) and sets the stage for understanding how social, economic, and geographic factors contribute to PTB in different types of settings. Aim 2 weaves in considerations of nativity and Latino origin and underscores how similar processes may operate disparately. Aim 3 focuses on the role of immigration enforcement policies and reveals how these policies may alter residential contexts. In the subsequent sections, I discuss the strengths and limitations of the study and highlight implications for research, practice, and policy.

7.1 Aim 1

7.1.1 Overview

The goal of aim 1 was to investigate the association between living in an ethnic enclave and preterm births. I adapted an enclave measure from previous studies (Tam, 2019; Walton, 2015) and a review of the literature. The revised measure used a classification tree and incorporated measures of social, economic, and geographic factors. An overview of the classification is available online at https://bit.ly/nwankwo-diss-infographic. The classification process generated five enclave categories—concentrated, connected, anchored, detached, and disconnected—which were later expanded to indicate the economic context (assessed with a factor score of multiple socioeconomic indicators). Concentrated enclaves were urban settings where most residents were Latino or immigrants. Connected enclaves had a similar distribution of Latino people and immigrants, but were suburban. Whereas detached enclaves were urban settings with a large share of Latino residents and a small immigrant population, disconnected enclaves had a similar Latino and immigrant configuration but were suburban. Unlike other areas, anchored enclaves were suburban, but these enclaves had a moderate Latino population and a large immigrant composition.

I hypothesized that Latina mothers who lived in anchored advantage (i.e., medium Latino concentration, large foreign-born population, suburban) enclaves would experience the lowest odds of PTB compared to residents in other enclaves, and predicted that those in detached disadvantage (large Latino concentration, small foreign-born population, urban) enclaves would experience the highest odds of PTB. In partial support of my hypotheses, Latina mothers in almost all enclaves experienced higher odds of PTB than their counterparts in anchored advantage enclaves. However, Latina mothers in connected disadvantage enclaves (large Latino concentration, large foreign-born population, suburban) reported the highest odds of PTB, which was not in line with my hypothesis. So, what explains residents' higher odds of PTB in almost all enclave types when compared to anchored advantage enclaves? And why do Latina mothers in connected disadvantage enclaves experience the highest odds of PTB? Several factors, including the social environment, residential segregation, and the economic and geographic context, may explain these results.

7.1.2 Contextualizing findings

One explanation for my finding of lower odds of PTB in anchored advantage enclaves (i.e., medium Latino concentration, large foreign-born population, suburban) compared to all other enclave types is the social environment. It is possible that Latina mothers in anchored advantage enclaves simultaneously benefit from their medium Latino and large immigrant populations, as such settings may facilitate both bonding and bridging social capital. Residents in anchored advantage enclaves may harness the shared social identity or ethnic bonds commonly found in ethnic enclaves, which can foster social support and contribute to lower PTB risk. At the same time, bridging social capital ensures residents' access to information and opportunities outside their ethnic and immigrant networks. These varied sources of social capital can buffer stress and reduce PTB risk (Hetherington et al., 2015).

In this study, anchored enclaves were analogous to ethnoburbs, defined as "multi-ethnic communities, in which one ethnic minority group has a significant concentration, but does not

necessarily comprise a majority" (W. Li, 1998, p. 482). The ethnoburb includes new immigrants, with resources to live in such areas, and immigrants and their families who have moved into ethnoburbs after settling first in other types of communities (W. Li, 1998). This mix of immigrant residents with the native born likely facilitates broader social networks, and lends support to the role of both bonding and bridging social capital in the anchored advantage enclave.

Research on ethnoburbs and health is nascent but emerging studies have found interesting results. Some studies in this area find that Latino people who live in ethnoburbs report higher mean illness scores (Maas, 2016) and Chinese ethnoburb residents report more alcohol-related hospitalizations (Wang-Schweig, Gruenewald, Gaidus, & Ponicki, 2022) and more substance and weapon arrests (Tam, 2020) than their counterparts in other areas. These studies have focused on California and have generally attributed poorer health and behavioral outcomes in ethnoburbs to higher levels of acculturation. While my finding that living in anchored advantage enclaves protects against preterm births among Latina mothers' counters the general direction of health effects described in these previous studies, it is in line with at least one study on birth outcomes. In their study among Bangladeshi women living in New York—one of the few studies that demarcated low, medium, and high ethnically dense enclaves—the authors (McLafferty et al., 2012) observed a U-shaped pattern, whereby only mothers who lived in areas with moderate ethnic density experienced reduced LBW risk. The authors concluded that moderately-dense enclaves had protective effects, as both bonding and bridging social capital are likely maximized in such areas.

In addition, anchored advantage enclaves had the smallest number of people served by one primary care physician when compared to other enclaves. It is possible that access to primary care physicians facilitates use of health care services, which can result in preventive care and early detection and mitigation of health issues that increase risk for PTB. Other research has found an association between primary care physician density and lower occurrences of infant mortality and low weight births (Shi et al., 2004). Anchored enclaves may

also be qualitatively different from other types of environments. Comparing anchored enclaves (i.e., medium Latino and large immigrant population) to connected enclaves (large Latino and large immigrant population) in post-hoc analyses predicted lower odds of preterm birth in anchored enclaves. This was true when I compared similarly defined pairs (i.e., anchored disadvantage vs. connected disadvantage). This finding is important because ethnic enclaves are often only defined as places primarily populated by immigrants or members of the same ethnic group. As a result, other areas are believed not to possess the healthful features generally found in enclaves. Yet, the same, different, or even more benefits may accrue to those who live in moderately ethnically dense environments because of their access to a diverse set of connections and resources. However, social capital varies across communities and may depend on economic resources.

Another central finding in this study was that residents in "disadvantage" enclaves (i.e., connected disadvantage, concentrated disadvantage, disconnected disadvantage, detached disadvantage) generally had higher odds of PTB than their counterparts in "advantage" settings (i.e., anchored advantage, connected advantage, concentrated advantage, disconnected advantage). One explanation for this finding is that the economic context influences the degree of social capital in the enclave. The relative deprivation in disadvantage settings may impact residents' ability to materialize the benefits that stem from the enclave's social attributes (e.g., social support). Extant research has found that enclaves with fewer economic resources are less likely to be beneficial to residents (Menjívar, 2000). Other studies have found an increased risk of poor health among residents who live in poor enclaves (Do & Frank, 2020; Froment et al., 2014; Osypuk et al., 2010; Von Behren et al., 2018). Unlike their counterparts in advantage enclaves, places that are more disadvantaged may not be able to develop strong social ties or social cohesion (Almeida, Kawachi, Molnar, & Subramanian, 2009), which would reduce social support and increase PTB risk. Conversely, residents in advantage enclaves may have access to the resources and services (e.g., community gardens, community clinics) that promote health

and may be able to use collective action to lobby for their needs (Kawachi & Berkman, 2000). The economic context may also shape access to education and job opportunities; lack of these resources can result in stress and increase PTB risk.

Additionally, my hypothesis that Latina mothers in detached enclaves (i.e., large Latino and small immigrant population, urban) would experience the highest odds of PTB as a result of residential segregation when compared to their counterparts in anchored advantage enclaves (i.e., medium Latino and large immigrant population, suburban) was not confirmed. Instead, I found that residents in connected disadvantage enclaves (i.e., large Latino and large immigrant population, suburban) experienced the highest odds of PTB. That is, relative to anchored advantage enclaves, Latina mothers in connected disadvantage enclaves experienced the highest odds of PTB. Residential segregation may contribute to the concentration of Latinos and immigrants in poor environments and lessen the benefits of living in such enclaves.

In this study connected disadvantage enclaves (i.e., large Latino and large immigrant population) had the highest degree of exposure to other Latinos (i.e., the isolation index). While greater exposure to other Latinos resulted in significantly lower odds of PTB, the unequal geographic distribution of Latinos and white people (i.e., dissimilarity index) in connected disadvantage enclaves resulted in higher odds of PTB. Though the dissimilarity index was not a statistically significant finding, it supports the premise that residentially segregated contexts hinder the benefits that should arise from living among other Latinos or immigrants. While segregation measures have been used previously to define ethnic enclaves (Do & Frank, 2020; Osypuk et al., 2010), future studies would do well to clarify their use in research on enclave-health effects and the extent that these measures alone capture the enclave environment.

Another plausible explanation for why residents in connected disadvantage enclaves experienced the highest odds of PTB is that residential segregation concentrates economic disadvantage and limits opportunities to build bridging and bonding social capital. According to Kawachi and Berkman (2000), residential segregation may block some groups access to social

capital by reducing their interactions with people outside of their social and residential community. Residential segregation may also limit social cohesion because living in an environment with a large Latino and large immigrant population may not universally yield increased social support. In one study, the authors (Almeida et al., 2009) found that areas with a large Latino population were associated with more social ties but not greater social cohesion. Almeida et al. (2009) suggest that even if residents provide other forms of support (e.g., emotional support), it may matter less than the provision of material resources for building social cohesion. Although social support is hypothesized to buffer the effects of living in economically deprived settings, residents may be unable to capitalize on their relationships and social groups if people like them also have insufficient resources.

Connected disadvantage enclaves' (large Latino, large immigrant population, suburban) suburban context may also explain the much higher odds of PTB in these settings when compared to anchored advantage enclaves (medium Latino, large immigrant population, suburban). Economic disadvantages may exacerbate the consequences of service and resource gaps. The increased risk of PTB among Latina mothers in connected disadvantage enclaves may reflect suburban areas still establishing culturally-relevant resources and social supports for their increasingly diverse population. In general, suburban residents are presumed to have access to the opportunities and resources that facilitate better health outcomes (Argeros, 2019). However, this was not the case for Latina mothers in connected disadvantage enclaves. U.S. suburbs are becoming more diverse, with increasing segments of minoritized groups, immigrants, and people living in poverty (Singer, 2013; Suro et al., 2011; Wen et al., 2009). Therefore, it is possible that some suburban areas are facing unique challenges in meeting the needs of their changing population (Francis et al., 2009; Pavlakis, 2018). In addition, the view that suburbs are places of affluence hides the growing poverty and health and social service deprivation in some areas (Francis et al., 2009; Murphy & Allard, 2015; Pavlakis, 2018; Schnake-Mahl & Sommers, 2017; Suro et al., 2011).

In this study, residents in urban enclaves (i.e., concentrated and detached areas) experienced higher odds of PTB, when compared to their counterparts in anchored advantage enclaves (i.e., suburban). These Latina mothers' likelihood of giving birth prematurely were, however, still lower than that of residents in connected disadvantage (suburban) enclaves. Residents in urban enclaves (i.e., concentrated and detached areas) did not universally experience lower odds of PTB than their counterparts in suburban enclaves (i.e., anchored and disconnected enclaves). Although health and social service programs are more likely to cluster in urban areas (Francis et al., 2009; Pavlakis, 2018; Suro et al., 2011), which may facilitate their use, the greater income inequality in urban enclaves may create a context whereby only residents who already have economic capital can access relevant resources. Information about available resources may depend on social capital.

Urban enclaves generally had fewer social associations than suburban areas, which may point to less opportunities for urban residents to interact outside of their peer groups. Research generally finds that social trust, social cohesion, and social support are much more likely when people are connected through voluntary social organizations (Kawachi & Kennedy, 1999). However, residents in settings with high levels of income inequality are more likely to report less social connectedness, decreased trust, and lower social cohesion and support (Kawachi & Kennedy, 1999), which may contribute to an increased PTB risk (Ehntholt, Cook, Rosenquist, Muennig, & Pabayo, 2020). Future studies would do well to examine Latina women's access to social, health, and economic resources, regardless of where they live.

7.1.3 Conclusion

Throughout this dissertation, I have argued that distinct processes generate unique enclave environments, which differentially contribute to PTB. My findings provide a complex picture of the association between living in an ethnic enclave and preterm birth than is often presented in the literature. That residents in connected disadvantage enclaves (i.e., suburban, large Latino and large immigrant populations) reported the highest odds of PTB discounts the

typical framing of ethnic enclaves and suburbs. Moreover, suburban enclaves are not identical and the higher odds of preterm birth in connected advantage vs. anchored advantage enclaves provides evidence of this. A nuanced view of ethnic enclaves avoids defining all ethnically concentrated places as operating similarly and prevents generalizing residents' experiences.

Several recommendations are possible based on my findings. The higher odds of PTB in almost all enclaves suggests that tailored place-based health, social, and economic initiatives are crucial. First, residential segregation is a fundamental cause of racial and health inequities and the enactment and enforcement of fair housing laws, which aim to reduce discrimination when renting or buying a home, may increase access to the types of communities that safeguard health. Second, residents in anchored advantage enclaves experienced the lowest odds of PTB and were more likely to have access to primary care physicians. Initiatives that increase and diversify the primary care workforce—in terms of the race/Latino origin of physicians and their geographic location—may hold promise for ensuring that people have access to primary care regardless of where they live.

Third, policies that target income (e.g., increase minimum wage), with the aim of reducing income inequality, especially in urban enclaves may improve long-term health outcomes in urban areas. In this study, completing some college or advanced education significantly lowered Latina mother's risk of PTB. Increasing access to and the affordability of higher education may help to remove barriers that hinder educational progress. Finally, investing in community infrastructure (e.g., parks) and strengthening neighborhood associations may increase social capital. In the next section, I clarify the extent that these results depend on nativity and Latino origin.

7.2 Aim 2

7.2.1 Overview

Aim 2 addresses two core questions: (1) does the association between living in an ethnic enclave and preterm birth depend on nativity; (2) or Latino origin? I hypothesized that nativity

would modify the association between living in an ethnic enclave and PTB, such that foreign-born Latina mothers in each enclave would have lower odds of PTB, when compared to their U.S.-born counterparts. I also rationalized that even when considering only foreign-born Latina mothers or just U.S.-born Latina mothers, those who lived in other enclaves would experience higher odds of PTB compared to their counterparts residing in anchored advantage enclaves. I predicted that U.S. and foreign-born Latina mothers in detached enclaves would experience the highest odds of PTB. Latino origin was expected to modify the association between living in an ethnic enclave and PTB, such that there would be differences in the odds of PTB between Latinas of Mexican, Cuban, and Puerto Rican descent living in anchored advantage enclaves and other areas.

7.2.2 Nativity

My results about nativity were largely in line with my hypotheses. Compared to their counterparts in anchored advantage enclaves (i.e., medium Latino and large immigrant population, suburban), U.S.-born residents who lived in most all other enclaves experienced significantly higher odds of PTB. Among the foreign-born, only residents in connected disadvantage (i.e., large Latino and large immigrant population, suburban) and disconnected disadvantage (i.e., large Latino and small immigrant population, suburban) enclaves experienced a greater likelihood of PTB than Latina mothers in anchored advantage enclaves. When compared to their respective counterparts in anchored advantage enclaves, U.S.-born residents in detached disadvantage enclaves (i.e., large Latino and small immigrant population, urban) experienced the highest odds of PTB and foreign-born residents in connected disadvantage enclaves (i.e., large Latino and large immigrant population, suburban) experienced the highest likelihood of this outcome. Additionally, in each enclave, foreign-born residents were generally more likely than the U.S.-born to experience lower odds of PTB (or there was no effect). So, what explains the lower odds of PTB among foreign-born residents compared to the U.S.-born in almost all settings? And why are the odds of PTB the highest

among U.S.-born residents in detached disadvantage enclaves, but the highest among foreign-born residents in connected disadvantage enclaves when compared to their respective counterparts in anchored advantage enclaves?

7.2.2.1 Comparing U.S.-born and foreign-born Latinas

My finding that in the same enclaves, immigrants were generally more likely than their U.S.-born counterparts to experience lower odds of PTB, is in line with my original hypotheses. Two immigrant health concepts (i.e., the epidemiologic paradox and the healthy immigrant effect) may help to explain this result. The epidemiologic paradox posits that despite their generally lower socioeconomic positions, foreign-born Latinas typically have better birth outcomes than their U.S.-born counterparts (Acevedo-Garcia & Bates, 2008; Acevedo-Garcia et al., 2007; Flores et al., 2012). This hypothesis also bares out in this study. On average, the foreign-born were more likely to have paid for their delivery with Medicaid, but less likely to have completed advanced degrees, and less likely to have initiated early prenatal care (likely due to lower health care access). Despite these factors, however, and compared to their U.S.-born counterparts, foreign-born Latina mothers generally experienced lower odds of PTB regardless of where they lived.[11] The healthy immigrant effect may also explain why immigrants were more likely than their U.S.-born counterparts to experience a lower likelihood of PTB. This hypothesis suggests that immigrants are generally healthier than those who remain in the sending country, and are, on average, healthier than the native-born. Other research focused on immigrants and pregnancy outcomes generally lends support to the healthy immigrant effect (Villalonga-Olives, Kawachi, & Von Steinbüchel, 2017).

7.2.2.2 U.S.-born Latinas

One important finding that was in line with my hypothesis is that U.S. born Latina mothers who lived in detached disadvantage (i.e., large Latino and small immigrant population,

[11]There were no observed differences in the odds of PTB between foreign and U.S.-born mothers in connected disadvantage enclaves and foreign and U.S.-born mothers in anchored advantage settings.

urban) enclaves experienced significantly higher odds of PTB than U.S. born Latina mothers in anchored advantage enclaves (i.e., medium Latino and large immigrant population, suburban). Since detached disadvantaged enclaves had some of the most segregated cities in the U.S., these enclaves were predicted to influence PTB through residential segregation. U.S. born residents in detached enclaves may be acutely aware of their unequal access to resources and opportunities. Several studies have found that U.S.-born individuals generally report more discriminatory experiences than their foreign-born counterparts (Brondolo et al., 2015; McLafferty & Chakrabarti, 2009; Perez, Sribney, & Rodríguez, 2009). U.S.-born residents may also be aware of the mobility blocks they face and be more likely to attribute their experiences to discrimination and racism.

If U.S.-born Latina mothers perceive or experience repeated exposure to segregated environments, the long-term effects of these experiences can influence their likelihood of giving birth prematurely. Moreover, residential segregation may cause the inflammatory triggers that result in PTB (Goldenberg et al., 2008; Institute of Medicine, 2007). That U.S.-born residents in other enclaves also experienced higher odds of PTB than their counterparts in anchored advantage areas may point to the role of the social environment. It is possible that being able to interact with others outside of one's ethnic group (e.g., bridging social capital), as is hypothesized for anchored enclaves, confers protective effects even for the U.S. born.

7.2.2.3 Foreign born Latinas

In this study, I found that compared to foreign-born mothers in anchored advantage enclaves (i.e., medium Latino and large immigrant population, suburban), foreign-born mothers in connected disadvantage (i.e., large Latino and large immigrant population, suburban) and disconnected disadvantage (i.e., large Latino and small immigrant population, suburban) enclaves experienced higher odds of premature births. Diverging social processes may explain the high odds of PTB in connected and disconnected disadvantage enclaves. On the one hand, it is possible that the large Latino and large immigrant population in connected disadvantage

enclaves does not translate into greater social support. This is plausible for residential contexts where there is high economic disadvantage (Almeida et al., 2009; Menjívar, 2000). In poor enclaves, there is less social cohesion and decreased trust, even when there are lots of social ties (Kawachi & Kennedy, 1999). Such contexts may result in loneliness, stress, and increased PTB risk (Ehntholt et al., 2020). In disconnected disadvantage enclaves, however, it may be that social isolation and limited social support as a result of a smaller immigrant population contributes to loneliness, maternal stress, and PTB risk (McClure et al., 2015). Research generally finds that loneliness activates a stress response, which can increase the risk of PTB (Ehntholt et al., 2020; Hawkley & Cacioppo, 2010; Institute of Medicine, 2007).

Interestingly, connected disadvantage and disconnected disadvantage enclaves were the only two enclave types were the expected odds of PTB was significantly different in post-hoc analyses comparing low vs. high foreign-born enclaves. This likely points to the different role immigrant concentration plays in these enclaves. Although some research suggests that benefits accrue to immigrants who live in areas concentrated with other immigrants (Montoya-Williams, Barreto, Fuentes-Afflick, & Collins Jr, 2022), it is possible for such environments (e.g., connected disadvantage enclaves) to contribute to increased PTB risk, above and beyond less immigrant concentrated areas (e.g., disconnected disadvantage enclaves).

Taken together, my findings comparing the U.S. and foreign born are generally in line with research (DeSisto & McDonald, 2018) that finds U.S.-born Latina mothers experience significantly higher odds of preterm births than Latina immigrants and other studies that underline the role of nativity in the association between living in an ethnic enclave and preterm births (DeCamp et al., 2015; DeSisto & McDonald, 2018; Osypuk et al., 2010). However, these studies have mostly only focused on Mexican mothers. In the next part, I discuss variations by Latino subgroup and present the case of mothers of Mexican, Puerto Rican, and Cuban origin.

7.2.3 Latino origin

In support of my hypotheses, the association between living in an ethnic enclave and PTB varied by Latino origin, such that there were differences in the odds of PTB between Mexican, Cuban, and Puerto Rican mothers based on where they lived. Compared to their same ethnic group counterparts who lived in anchored advantage enclaves (i.e., medium Latino and large immigrant population, suburban), those who lived in other areas experienced higher odds of PTB. Although Mexican and Puerto Rican mothers who lived in connected disadvantage enclaves (i.e., large Latino and large immigrant population, suburban), experienced the highest odds of PTB, mothers of Cuban descent who lived in these areas did not. Among Cuban mothers, it was those who lived in connected advantage enclaves (i.e., large Latino and large immigrant population, suburban), who experienced the highest odds of PTB. So, what explains the high odds of PTB among Mexican and Puerto Rican mothers in almost all enclaves and their much higher odds of PTB in connected disadvantage enclaves when compared to their counterparts in anchored advantage enclaves? And what explains the greater odds of PTB among Cuban mothers in connected advantage enclaves when compared to their counterparts in anchored advantage enclaves? Because the results from the stratified analyses followed the same general pattern as that of the overall Latino group analyses, the explanations offered in aim 1 still hold, with some distinctions.

7.2.3.1 Mexican origin mothers

Relative to Mexican origin mothers in anchored advantage enclaves, Mexican origin mothers in all other enclaves experienced higher odds of PTB. One possibility for this finding is discrimination related to skin color, documentation status, and English language proficiency (Andrea Gómez Cervantes, 2019; M. A. Johnson & Marchi, 2009; Montoya-Williams et al., 2020). It is possible that because of their racialized social positions in the U.S., Mexican mothers may not be able to capitalize on their residence in some settings. At least one study has documented the English language proficiency stratification in some enclaves. M. A.

Johnson and Marchi (2009) found that Latino English speakers who lived in Latino immigrant enclaves had higher odds of low birthweight than Spanish speakers. The authors suggested that non-Spanish speaking residents likely had less social capital, which could produce stress and increase LBW risk.

Living in a place with a large Latino and large immigrant population may also not translate into receiving more social support (Almeida et al., 2009). Some Mexican mothers may face hostile environments due to their perceived race and legal status, which may lead to heightened vigilance, stress (Asad & Clair, 2018), and increased PTB risk. However, these forms of discrimination are ubiquitous, contribute to stress, and would be expected in all areas where Mexican origin mothers live. That Mexican origin mothers in most all other areas reported significantly higher odds of PTB than Mexican origin mothers in anchored advantage enclaves supports the hypothesized distinctiveness of the anchored advantage enclave.

7.2.3.2 Puerto Rican origin mothers

Compared to their counterparts in anchored advantage enclaves (i.e., medium Latino and large immigrant population, suburban), Puerto Rican mothers in connected enclaves (i.e., large Latino and large immigrant population, suburban) had exceptionally high odds of PTB, with those in connected disadvantage areas experiencing the highest likelihood of this outcome. It is possible that having a small ethnic representation in a Latino enclave may not result in the hypothesized benefits of the enclave. That is, when Puerto Rican mothers are in the minority in an enclave that is mostly populated by Cuban or Mexican individuals, they may not experience the social benefits of living in the enclave. Such contexts may not eliminate experiences of within group discrimination and may even lower experiences of social support for groups that are in the minority. This premise is largely supported by research among ethnic youth that finds that internalizing mainstream values may lead to discrimination and reproduce social hierarchies within the enclave, which counteracts the support and cohesion that should emanate from living in an ethnic community (Balaghi, 2022). Other research has found that greater ethnic density is

associated with increased within-group discrimination (Juang & Alvarez, 2011; Kumar, Seay, & Karabenick, 2015)—such contexts would likely increase PTB risk.

Another interesting finding was that Puerto Rican mothers in connected advantage enclaves experienced significantly higher odds of PTB than Puerto Rican mothers in more disadvantage settings (i.e., concentrated disadvantage and disconnected disadvantage enclaves). It is possible that because U.S. citizenship affords Puerto Rican people unhindered movement between the U.S. and Puerto Rico, they are less likely to maintain strong ties to any one place or social group. At least one study finds evidence of disrupted social networks and social isolation as network members relocate to Puerto Rico (Falcón, Todorova, & Tucker, 2009). Other research has found lower levels of social support among mainland Puerto Rican mothers and higher levels of stress, which the authors find increases the risk of poor health behaviors and poor birth outcomes (Landale & Oropesa, 2001).

The increased likelihood of PTB among Puerto Rican mothers in almost all areas when compared to Puerto Rican mothers in anchored advantage enclaves, may result from their social positions and daily experiences in the U.S. Puerto Rican individuals are generally racialized as Black and may face discrimination based on their presentation alone. Stress emanating from these experiences has been linked to adverse birth outcomes (Alhusen et al., 2016). Some research has found that when Puerto Rican people live in more affluent and less segregated counties, they benefit from the ethnic enclave (Velez, 2017). Others find, however, that increased exposure to other Puerto Rican people, measured with the isolation index, is associated with an increased risk of very preterm birth among island-born Puerto Rican women, but not their U.S.-born counterparts (Britton, 2015).

Although Puerto Rican people are afforded U.S. citizenship, which grants access to services (e.g., food stamps, Medicaid), they are generally perceived as “colonial subjects,” which influences their daily experiences and residential mobility in the U.S (Velez, 2017). Though this citizenship protects Puerto Rican people from the immigration system, that

overwhelmingly targets Mexican immigrants (Asad & Clair, 2018), they are still often treated as though they do not belong (Velez, 2017), which can result in stress and increased PTB risk.

7.2.3.3 Cuban origin mothers

Compared to Cuban origin mothers in anchored advantage enclaves (i.e., medium Latino and large immigrant population, suburban), Cuban origin mothers in connected advantage (i.e., large Latino and large immigrant population, suburban) and concentrated advantage enclaves (i.e., large Latino and large immigrant population, urban) experienced significantly higher odds of PTB. One explanation for this finding is that social stratification produced by U.S. immigration policies generates different categories of Cuban immigrants. While the first wave of immigrants from Cuba were recognized as political refugees, recent Cuban immigrants have not been granted the same designation.

The first wave of immigrants from Cuba tended to have more educational and economic capital that afforded their residence in particular places (Duany, 1999; Healey & Stepnick, 2019). While Miami-Dade County[12] is often represented as the bedrock of Cuban immigrant settlement in the U.S., enclaves in this area have not been beneficial to all residents (Duany, 1999; Healey & Stepnick, 2019). Later arrivals have also not benefitted from the enclave in the same ways as their predecessors who were able to establish businesses (Duany, 1999). More recent accounts suggest that later arrivals were predominantly employed by individuals who owned businesses in the enclave, which provided a form of cheap labor (Portes & Puhrmann, 2015). This type of economic stratification may also be true for connected advantage enclaves and contribute to stress and increase PTB risk. It is also possible that time of arrival from Cuba (i.e., before and after the 1980 Mariel Boatlift, political refugees or other types of entrants) and the context of U.S. integration increases discrimination and lowers experiences of social

[12]Miami-Dade County was classified as a concentrated disadvantage enclave.

support. At least one study has documented lower levels of support among later arriving Cuban immigrants (Cislo, Spence, & Gayman, 2010).

Although Cuban immigrants are often thought to be one of the most advantaged immigrant groups in the U.S., my results show that like Mexican and Puerto Rican mothers in this study, living in particular enclaves may influence their likelihood of giving birth prematurely. This finding is largely in line with other research that suggests that some Cuban people in the U.S., particularly more recent arrivals, face similar barriers as other immigrant groups (Duany, 1999; Portes & Puhrmann, 2015).

7.2.4 Conclusion

Nativity and Latino origin modify the association between living in an ethnic enclave and PTB. That residence in almost all enclaves resulted in significantly higher odds of PTB among U.S.-born residents, but not the foreign-born, underscores the influence of place. Not only is PTB consistently lower among foreign-born residents than the U.S. born, there is a specific type of context, namely, the anchored advantage enclave that may confer the most protections against PTB risk for all groups. These findings do not discount the unique experiences of Mexican, Puerto Rican, and Cuban mothers in the U.S., but instead, confirm the salience of place–as bounded geography that is encompassing of the many different factors that impact maternal and newborn health. Up to this point, I have upheld the anchored advantage enclave as the gold standard, in the next section, I discuss the extent that these results depend on the number of immigration enforcement policies in the enclave.

7.3 Aim 3

7.3.1 Overview

Aim 3 investigates two central questions: (1) Does the association between living in an ethnic enclave and PTB depend on immigration enforcement policies; (2) Does the association between ethnic enclaves, PTB, and immigration enforcement policies vary by Latino origin? Although immigration enforcement policies modified the association between living in an ethnic

enclave and PTB, the general direction was not in line with my hypotheses of higher odds of PTB as the number of immigration enforcement policies increased. Instead, as these policies increased by one unit, the likelihood of premature births was significantly lower in concentrated advantage (i.e., large Latino and large immigrant population, urban), disconnected disadvantage (i.e., large Latino and small immigrant population, suburban), and disconnected advantage (i.e., large Latino and small immigrant population, suburban) enclaves but significantly higher among residents in detached disadvantage enclaves (i.e., large Latino and small immigrant population, urban)—compared to anchored advantaged (i.e., medium Latino and large immigrant population, suburban) enclaves. When Latino origin was considered, this pattern only held among Mexican origin mothers.

7.3.2 Immigration enforcement policies and PTB

The significantly lower likelihood of premature births among Latina mothers in concentrated advantage enclaves (i.e., large Latino and large immigrant population, urban) is likely the result of several factors. Compared to other settings, concentrated enclaves had the fewest number (2.5) of immigration enforcement policies. It is possible that in concentrated advantage enclaves, immigrant networks possess information and strategies (e.g., advocacy) to fight restrictive policies and help Latino residents navigate the immigration enforcement context (Ebert & Ovink, 2014; Kline, 2019). For example, Ayón and Naddy (2013) found that after the passage of immigration legislation in Arizona, Latino immigrants reported receiving resources, in addition to, emotional and financial support from immediate and extended family members, friends, neighbors, and community organizations. The majority of concentrated enclaves were also in California, a state that espouses generally inclusive immigrant policies. Such contexts likely create more favorable policy environments for pregnant women and their newborns.

An unanticipated finding when the immigration enforcement context was considered was residents' lower odds of premature births in disconnected enclaves (i.e., large Latino and small immigrant population, suburban) when compared to residents' likelihood of PTB in anchored

advantage (i.e., medium Latino and large immigrant population, suburban) enclaves. Disconnected enclaves experienced the greatest population change (26.6%) since 2000 and had the most local immigration enforcement policies (4.5). Population change has been connected to adopting restrictive policies (Reich, 2019; Walker, 2018; Walker & Leitner, 2011), which was expected to increase PTB risk. Given their smaller immigrant population, I predicted that residents in disconnected enclaves would experience social isolation, from limited immigrant networks, which would increase PTB risk. Residing in enclaves with a smaller population of immigrants was also hypothesized to make Latinos more visible targets for immigration enforcement, which would translate to increased PTB risk. However, in the context of increasing immigration enforcement policies, residents in these enclaves experienced lower odds of premature births. With their smaller immigrant population and immigrant networks, it is likely that there is limited information about immigration enforcement policies in these enclaves. It is possible that if residents are not aware of such policies, then they are potentially shielded from their effects. According to Ebert and Ovink (2014), places with fewer immigrants are less likely to recognize exclusionary laws as discriminatory, which could explain the lower odds of PTB among Latina mothers in disconnected enclaves.

However, in support of my hypotheses, an increase in immigration enforcement policies resulted in a 15% increased likelihood of PTB among Latina mothers in detached disadvantage enclaves (i.e., large Latino and small immigrant population, urban). PTB risk in these enclaves were theorized to operate through residential segregation, which intersects with concentrated poverty, and heightened policing in places with more Black and Latino people (Garcia-Hallett et al., 2020; Andrea Gómez Cervantes, 2019). In a hostile context, it is possible that these factors work in concert to place Latina residents at increased risk for PTB. Much has been written about the entanglement of local law enforcement with ICE (Coleman & Kocher, 2011; Garcia-Hallett et al., 2020; Immigrant Legal Resource Center, 2019). It is possible that racialized policing contributes to increased maternal stress and chronic activation of the stress-response systems,

that results in higher PTB risk. One study (Nichols et al., 2018) has linked this form of policing–whether observed or perceived–to greater mental health needs and worsening health. The local immigration enforcement context may lead to fear and delayed use of health care services, which can contribute to poor health-related outcomes (Simmons et al., 2020; Tome et al., 2021; Torche & Sirois, 2018).

My finding that some enclaves may protect health and others may contribute to poor health is in line with two different perspectives. While some studies report that ethnic enclaves may buffer the effect of exclusionary policies (Ebert & Ovink, 2014), others contend that ethnic enclaves can make immigrants and ethnic residents hyper-visible and lead to racial profiling, hyper-surveillance, and hyper-criminalization (Garcia-Hallett et al., 2020). The ethnic enclave classification successfully illustrates both possibilities and lends support to the notion that different dynamics likely shape PTB outcomes in different areas.

7.3.3 Immigration enforcement policies and Latino origin

The association between ethnic enclaves, preterm birth, and immigration enforcement policies was modified by Latino origin. However, the observed pattern only held among Mexican mothers. The finding of lower odds of PTB in concentrated advantage, disconnected disadvantage, and disconnected advantage enclaves highlights how immigration enforcement policies may alter the function of different types of enclaves. It may be that enclaves, especially those with large Latino populations, exert their benefits (e.g., community support) in the context of heightened immigration enforcement. This hypothesis may be especially true for Mexican mothers, who are often the primary targets of immigration enforcement efforts. The intersection of policing and immigration enforcement may leave Mexican mothers more vulnerable to maternal stress, especially in racially segregated contexts like detached disadvantage enclaves.

Mothers of Puerto Rican origin in connected disadvantage enclaves and those of Cuban descent in disconnected disadvantage enclaves experienced significant lower odds of PTB. Although Puerto Rican and Cuban people are not the targets of immigration enforcement, the

intertwining of immigration enforcement and racialized policing was predicted to leave Puerto Rican and Cuban mothers at higher risk of PTB. Because of their significantly lower odds of PTB in connected and disconnected disadvantage enclaves, it is conceivable that Puerto Rican and Cuban mothers may also be protected from the deleterious effects of immigration enforcement policies in particular areas. Perhaps mothers of Puerto Rican origin who live in connected disadvantage enclaves experienced significantly lower odds of PTB in these settings because they also benefit from the enclaves' social features, including the advocacy that might arise against immigration enforcement policies. Cuban mothers living in disconnected disadvantage enclaves experienced significantly lower odds of PTB possibly because they are not the targets of immigration enforcement policies and may also not perceive themselves as deliberate targets of such policies (Ebert & Ovink, 2014).

7.3.4 Conclusion

These findings suggest that immigration enforcement policies can significantly modify the association between living in an ethnic enclave and preterm birth. Immigration enforcement policies may alter the context, such that residents experience the benefits of living in an enclave when there are an increasing number of such policies. This was especially true for Mexican mothers who are often the primary targets of immigration enforcement efforts. In such climates, living in particular types of enclaves may be beneficial.

7.4 Summary of discussion

The three aims of the study offered an empirical examination of the ethnic enclave classification and the influence of ethnic enclaves on PTB among Latina mothers. My investigation of the association between living in an ethnic enclave and PTB in aim 1 refines our understanding of enclave effects on premature births in this population. Specifically, compared to anchored advantage enclaves, a place with a moderate Latino and large immigrant population, Latina mothers in almost all other areas experienced higher odds of PTB. This

finding was likely because of the features of the social environment (i.e., social support operating through ethnic density), residential segregation, economic, and geographical factors.

In assessing moderation by nativity and Latino origin in aim 2, I highlighted differences in residential location and PTB among U.S.-born and foreign-born Latina mothers. U.S.-born residents in detached disadvantage enclaves experienced the highest odds of PTB, which might reflect the influence of repeated exposure to segregated environments. Foreign born mothers in connected disadvantage enclaves and disconnected disadvantage enclaves experienced high odds of PTB, which may point to how immigrant concentration—whether large (i.e., limited social support due to constrained resources) or small (i.e., social isolation due to the small immigrant population)—might operate through distinct mechanisms to shape PTB risk. That the likelihood of PTB was consistently lower among foreign-born residents than the U.S.-born—regardless of the type of enclave, underscores the salience of the healthy immigrant effect and the epidemiologic paradox.

Latino origin generally modified the association between living in an ethnic enclave and PTB. Mexican mothers' higher likelihood of PTB in almost all areas was likely due to discrimination related to documentation status, skin color, English language proficiency, and residential segregation. Despite their U.S. citizenship, Puerto Rican mothers likely also face racism and discrimination from their day-to-day experiences and their racialization as Black, which can increase the likelihood of PTB. Not all Cuban people have benefited from the resources afforded to them through U.S. immigration policies. Social stratification within the group may contribute to stress and increase PTB risk.

My focus on immigration enforcement in aim 3 revealed that immigration enforcement policies alter the association between living in an ethnic enclave and PTB, such that residents experience the benefits of living in particular enclaves when more of such policies are in place. This finding was primarily observed among Mexican mothers, who are often the targets of immigration enforcement efforts.

This dissertation adds to the growing number of studies that illustrate the importance of considering contextual differences in population health and immigrant integration (Ebert & Ovink, 2014; Maas, 2016; Tam, 2019; Walton, 2015). The ethnic enclave classification adds nuance to our understanding of enclave effects and PTB. By using social, economic, and geographic dimensions of place, the classification moves beyond crude population concentration measures and elevates the contextual influences that shape residential contexts and premature birth. The results from this study may be useful for public health research, program planning, and health and social policies.

7.5 Strengths and limitations

This dissertation should be reviewed in light of its strengths and limitations. The study used a cross-sectional design, which limits the ability to make causal claims. Although I employ multiple years of U.S. birth records for these analyses, data are collected at static and independent points in time. In addition, each data source used in the dissertation has its advantages and disadvantages. For example, the census was the basis for the ethnic enclave classification. While the census remains the best estimate of the U.S. population, sampling errors are possible, as the census produces estimates and does not sample the entire population (Nancy, 2014). Individuals who are undocumented may also be reticent about participating in surveys. However, given that U.S. birth records include near complete coverage of all births in the U.S. (Centers for Disease Control and Prevention, 2020), I was better able to capture information from people who may not traditionally respond to surveys. Although misclassification of information is still possible, especially with self-reports of health behaviors (e.g., smoking, prenatal care), the observed patterns in this study—and with my sensitivity tests using LBW—where in line with published reports on the influence of these risk factors (Institute of Medicine, 2007; Martin, Osterman, Kirmeyer, & Gregory, 2015; Northam & Knapp, 2006).

Misclassification of policies is also possible, given the manual approach to reviewing these documents. However, my finding that urban areas have less immigration enforcement

policies than suburban areas is in line with current research (Walker & Leitner, 2011). In addition, the presence of a policy only serves as a proxy for its implementation. The cross-sectional nature of the immigration enforcement data also limits our knowledge about policy changes from 2017 to 2018. A place may have had three policies in 2017, but five, or fewer policies in 2018. However, since most studies focus on investigating the association between just one immigration enforcement policy, usually 287(g) agreements, and health outcomes, this dataset may provide a more complete evaluation of how the presence of policies, above and beyond 287(g), shapes the local context and influences PTB.

Rural counties were also excluded from this study which may influence results. Given the heterogeneity of rural communities (Hart et al., 2005; The American Communities Project, 2021), future research may construct an enclave classification scheme just for rural areas to theoretically define the enclaves that exist and their influence on PTB. It may also be necessary to use other clustering methods if all U.S. counties are considered. Future studies may do well to focus on areas where new immigrants are settling. Attention to such patterns and trends would help to ensure that the policy and practice implications of the classification remain central.

While it is possible that these findings are a feature of specific variables or the lack of them. I do not account for generational status, documentation status, and duration in the U.S. and in the enclave. It is possible that specific enclaves may be beneficial for first-generation immigrants but not their descendants (Roy et al., 2013). Documentation status and years in the U.S. may also influence residential patterns (Allen & Turner, 1996), which would affect where immigrants end up and their risk of PTB (Alba et al., 2014; Asad & Rosen, 2019; Sue et al., 2019). There are likely also unmeasured variables—especially contextual influences—that may affect PTB risk.

In addition, I did not use group specific ethnic density measures to generate individually representative Mexican, Puerto Rican, and Cuban enclaves. While doing so was outside the scope of this study, future research may do well to begin the classification process with a group

specific ethnic density measure (e.g., % Cuban or % Mexican) and investigate the extent that results deviate from my findings. Although these results may be directly related to the way ethnic enclaves were conceptualized and measured, the general patterns hold when I consider LBW and different specifications of the enclave measure. Future studies may examine this association with physical and mental health outcomes, and mortality, all of which are likely influenced by residence in ethnic enclaves.

A major strength of this dissertation and its primary contribution is my adaptation and development of an ethnic enclave classification scheme that incorporates social, economic, and geographic dimensions. Rather than generating a classification solely for the population in the current sample, I used population level data, which ensures that the classification can be applied in other studies that focus on Latinos in the U.S. The classification can be revised, adapted, and redefined for different groups based on their population levels in the U.S. The classification also meets a growing call for "better [ways] of understanding the different types of communities that make up America" (The American Communities Project, 2021). While some may see my approximations of ethnic enclaves with counties as a limitation, others may agree that it focuses on a unit of analysis that is useful for policy-making (Ingram & Franco, 2014; Riley, 2018). People live their lives across neighborhood boundaries, residing in one place and working or socializing in another. A county-level classification accounts for these complexities. Places are shaped by macro-level structures, policies, domestic and international migration patterns, as well as longstanding histories (Kawachi & Berkman, 2003), that extend beyond specific neighborhoods. Research that focuses on contemporary ethnic enclaves would do well to consider the larger context in which communities are embedded (Ebert & Ovink, 2014).

Furthermore, since county-level information is more readily available in administrative datasets than neighborhood level information (Ingram & Franco, 2014), this conceptualization of ethnic enclaves may allow for nuanced investigations of enclave effects on diverse health outcomes. Despite growing literature that points to the demographic and social transformations

that have shaped the last few decades, to my knowledge, no other study has applied an ethnic enclave typology to research on preterm births in the U.S. Research in this area needs updating to reflect the current social, demographic, economic, and political landscape of the nation, and this study is an early step in that direction.

7.6 Implications for research, policy, and practice

This section centers on the contributions of the dissertation and its implications for research, policy, and practice. Overall, results from this study complicate the notion that ethnic enclaves are unequivocally protective. Latina mothers' residence in ethnic enclaves may also impact their risk of premature birth. However, the mechanisms that explain these results are unique and depend–in large part–on the type of environment. This finding may spur novel research questions and generate tailored policies and programs.

7.6.1 Implications for research

The ethnic enclave classification improves our conceptualization and measurement of ethnic enclaves and raises important questions about the influence of these environments on PTB and other health outcomes. There are different types of enclaves, with many emerging in suburban areas (Hoalst-Pullen et al., 2013; W. Li, 2019; Walton, 2015; Wen et al., 2009). The classification may lead to further investigations about how and why similar places, each believed to be enclaves, disparately impact health. The delineation of enclaves may also allow health researchers to consider the mechanisms—above and beyond individual-level factors—that generate different residential contexts and influence health. The classification may help to ensure that researchers associate health differences with the social, economic, and structural determinants of health—that are unequally distributed across place—rather than the individuals that live in particular areas.

Future research directions may include assessing how findings change when the classification is applied with different groups. Research in this area may also benefit from linking geospatial data with additional demographic and contextual information. It may be valuable to

assess the presence of infrastructure (e.g., hospitals, parks, bus lines) relative to where people live. A feasible next step may include examining the usefulness of the classification when revised using more granular geographic units, like zip codes or census tracts. Focusing on a state may also be useful for gaining a better understanding of the different enclaves.

7.6.2 Implications for practice

This study also has several implications for programs and the providers that will lead them. No assumptions should be made about the availability of resources based on ethnic density or foreign-born composition alone. That a place is an enclave does not explicitly mean that such environments possess the cultural resources that facilitate positive birth outcomes or good health. Indeed, such areas may not have the capacity or infrastructure (e.g., availability of culturally and linguistically appropriate services) or economic resources to support their residents. While research has generally found that residents in enclaves benefit from large Latino and large immigrant populations, this was not often the case in this study. Such areas may need tailored health and social programs.

It is also important to account for the different enclave types in service provision. If all services are tailored for and more accessible to those who live in urban areas, for example, a subset of the population may be neglected. This mismatch becomes particularly important because new immigrants are now more likely to settle in suburban areas than at any other time in U.S. history (Singer, 2004, 2013) and in this study, residents in suburban enclaves–especially connected disadvantage areas–tended to report the highest odds of PTB.

In the context of increasing immigration enforcement policies, residents in detached enclaves experienced significantly higher odds of PTB. Although these enclaves do not have large immigrant populations, it is possible that these residents may need additional supports. Examining where people live, including their access to resources, will help to tailor better health-promotion strategies. The ethnic enclave classification may prove useful in helping to identify

people in different areas that need health care, health interventions, or those who may have access to services but are not using such programs.

7.6.3 Implications for policy

Policies influence residential contexts, residents' experiences, and health. U.S. counties, for instance, play a crucial role in shaping local economies (Istrate, Mak, & Nowakowski, 2014). Economically affluent counties may promote workforce programs, large business recruitment, and retention initiatives, or small business support and investment plans. While these policies are not directly related to health, they create the local contexts that have significant implications for the health and wellbeing of community members and newborns. These policies shape the availability of jobs, for example, which is directly linked to lower unemployment (Bartley, 1994).

Policies that address social issues (e.g., poverty, housing, education, employment) are also crucial to securing the health and wellbeing of mothers and their infants. Such policies may help to ensure that everyone who becomes pregnant, regardless of where they live, enters pregnancy in optimal health and experiences a healthy delivery. Establishing and strengthening vital non-health-specific policies and advancing health-related efforts already in place (e.g., the Special Supplemental Nutrition Program for Women, Infants, and Children) will result in improved health for the next generation.

The ethnic enclave classification may also be useful for policymaking. In 2021, Congress passed the Improving Social Determinants of Health Act, which authorizes the CDC to create programs that improve health outcomes and address health inequities. One component of the program is to award "grants to state, local, territorial, and Tribal health agencies and organizations to address social determinants in target communities ("Improving Social Determinants of Health Act of 2021," 2021). The classification offers a way of considering different factors in allocating these funds, which would likely come through counties. Very often, just one measure is used to make funding decisions. This approach is questionable because it does not provide a true picture of the conditions and opportunities in different areas (Gelfond &

Looney, 2018). The Opportunity Zones program[13] for example, uses median family income or the local poverty rate (Lester et al., 2018). Since the ethnic enclave classification scheme incorporates the social, economic, and geographic dimensions of place, it is a significant improvement from current approaches. Therefore, policymakers looking to make equitable and just programmatic determinations may draw upon such delineations of place.

As an example, the ethnic enclave classification may be helpful to policymakers in California looking to understand the types of places that make up the different regions. Enclaves in the Central Valley may have unique needs than those in the San Francisco Bay Area. When revised using census tracts, policymakers can drill down to Los Angeles County, the largest U.S. County and where Latinos make up close to 50% of the population, to better assess local community needs. Such evaluations may result in a better understanding of different areas and yield tailored resources and services. Tailored policies for the most impacted enclaves may include establishing initiatives that support the development and retention of local businesses. Local businesses can provide job opportunities for residents and may stimulate economic growth, which can reduce unemployment rates and bolster the local economy. Local businesses are also more likely to preserve the character of the enclave, which can help to foster social connectedness and result in improved overall health for all community members.

7.7 Conclusion

This dissertation advances a nuanced understanding of the association between living in an ethnic enclave and preterm births among Latina mothers in the U.S. By distinguishing between the social, economic, and geographic dimensions that make up different areas, this study shows that ethnic enclaves do not operate similarly. Their impact on PTB depends, in

[13] In 2017, the U.S. Congress passed the Tax Cuts and Jobs Act and established the Opportunity Zones program. Through this initiative, communities across the U.S. were designated as “Opportunity Zones.” Using just one measure of poverty, specific areas were designated as distressed and prime for economic investment (Lester et al., 2018).

large part, on the type of enclave and on nativity, Latino origin, and immigration enforcement policies.

Global (e.g., immigration) and local (e.g., gentrification) processes will likely continue to shape the formation and significance of ethnic enclaves. However, societal advancements in technology and social media will present new questions about the salience of these physical environments. In the last few decades alone, immigration has fundamentally shaped U.S. society. The advent of digital worlds (e.g., Metaverse), where real and virtual environments collide, may also profoundly impact societal functioning. If so, could the ethnic enclave be replicated in an online environment? Would such places still lessen interpersonal racism experiences or provide access to culturally-specific resources and social support? Would place, including its geographical boundaries and the social, economic, and political environments it encompasses–still matter? Indeed, as society transforms in unique ways, the association between living in an ethnic enclave and diverse health outcomes would need revisiting.

Distinguishing between ethnic enclaves with the classification revealed that different processes generate disparate environments that uniquely shape PTB risk. Future research that recognizes that ethnic enclaves may exist in various forms, including online, may be best positioned to address the most pressing societal issues of the next few decades.

APPENDICES

APPENDIX A. List of select U.S. counties and enclave classification

Table 1. List of select U.S. counties and enclave classification, N=232

County	State	Enclave Classification	Latino density	Foreign born population	Dis-advantage	Geography
Cochise County	Arizona	Disconnected disadvantage	Small	Small	High	Suburban
Coconino County	Arizona	Disconnected advantage	Small	Small	Low	Suburban
Maricopa County	Arizona	Concentrated advantage	Large	Large	Low	Urban
Mohave County	Arizona	Disconnected disadvantage	Small	Small	High	Suburban
Pima County	Arizona	Connected disadvantage	Large	Large	High	Suburban
Pinal County	Arizona	Disconnected disadvantage	Small	Small	High	Suburban
Yavapai County	Arizona	Disconnected advantage	Small	Small	Low	Suburban
Yuma County	Arizona	Connected disadvantage	Large	Large	High	Suburban
Benton County	Arkansas	Disconnected advantage	Small	Small	Low	Suburban
Sebastian County	Arkansas	Disconnected disadvantage	Small	Small	High	Suburban
Washington County	Arkansas	Disconnected advantage	Small	Small	Low	Suburban
Alameda County	California	Concentrated advantage	Large	Large	Low	Urban
Butte County	California	Disconnected disadvantage	Small	Small	High	Suburban
Contra Costa County	California	Anchored advantage	Medium	Large	Low	Suburban
Fresno County	California	Connected disadvantage	Large	Large	High	Suburban
Imperial County	California	Connected disadvantage	Large	Large	High	Suburban
Kern County	California	Connected disadvantage	Large	Large	High	Suburban
Kings County	California	Connected disadvantage	Large	Large	High	Suburban
Los Angeles County	California	Concentrated advantage	Large	Large	Low	Urban
Madera County	California	Connected disadvantage	Large	Large	High	Suburban
Marin County	California	Anchored advantage	Medium	Large	Low	Suburban
Merced County	California	Connected disadvantage	Large	Large	High	Suburban
Monterey County	California	Connected advantage	Large	Large	Low	Suburban
Napa County	California	Connected advantage	Large	Large	Low	Suburban
Orange County	California	Concentrated advantage	Large	Large	Low	Urban
Placer County	California	Disconnected advantage	Small	Small	Low	Suburban
Riverside County	California	Concentrated disadvantage	Large	Large	High	Urban
Sacramento County	California	Concentrated advantage	Large	Large	Low	Urban
San Benito County	California	Connected advantage	Large	Large	Low	Suburban
San Bernardino County	California	Connected disadvantage	Large	Large	High	Suburban

County	State	Enclave Classification	Latino density	Foreign born population	Dis-advantage	Geography
San Diego County	California	Concentrated advantage	Large	Large	Low	Urban
San Francisco County	California	Concentrated advantage	Large	Large	Low	Urban
San Joaquin County	California	Connected disadvantage	Large	Large	High	Suburban
San Luis Obispo County	California	Disconnected advantage	Small	Small	Low	Suburban
San Mateo County	California	Anchored advantage	Medium	Large	Low	Suburban
Santa Barbara County	California	Connected advantage	Large	Large	Low	Suburban
Santa Clara County	California	Concentrated advantage	Large	Large	Low	Urban
Santa Cruz County	California	Connected advantage	Large	Large	Low	Suburban
Solano County	California	Anchored advantage	Medium	Large	Low	Suburban
Sonoma County	California	Anchored advantage	Medium	Large	Low	Suburban
Stanislaus County	California	Connected disadvantage	Large	Large	High	Suburban
Sutter County	California	Connected disadvantage	Large	Large	High	Suburban
Tulare County	California	Connected disadvantage	Large	Large	High	Suburban
Ventura County	California	Connected advantage	Large	Large	Low	Suburban
Yolo County	California	Connected advantage	Large	Large	Low	Suburban
Yuba County	California	Connected disadvantage	Large	Large	High	Suburban
Adams County	Colorado	Connected advantage	Large	Large	Low	Suburban
Arapahoe County	Colorado	Anchored advantage	Medium	Large	Low	Suburban
Boulder County	Colorado	Disconnected advantage	Small	Small	Low	Suburban
Denver County	Colorado	Concentrated advantage	Large	Large	Low	Urban
El Paso County	Colorado	Disconnected advantage	Small	Small	Low	Suburban
Jefferson County	Colorado	Disconnected advantage	Small	Small	Low	Suburban
Mesa County	Colorado	Disconnected advantage	Small	Small	Low	Suburban
Pueblo County	Colorado	Disconnected disadvantage	Small	Small	High	Suburban
Weld County	Colorado	Disconnected advantage	Small	Small	Low	Suburban
Fairfield County	Connecticut	Anchored advantage	Medium	Large	Low	Suburban
Hartford County	Connecticut	Concentrated advantage	Large	Large	Low	Urban
New Haven County	Connecticut	Anchored advantage	Medium	Large	Low	Suburban
Broward County	Florida	Connected advantage	Large	Large	Low	Suburban
Collier County	Florida	Connected advantage	Large	Large	Low	Suburban
Highlands County	Florida	Disconnected disadvantage	Small	Small	High	Suburban
Hillsborough County	Florida	Concentrated advantage	Large	Large	Low	Urban
Lake County	Florida	Disconnected advantage	Small	Small	Low	Suburban
Lee County	Florida	Anchored advantage	Medium	Large	Low	Suburban

County	State	Enclave Classification	Latino density	Foreign born population	Dis-advantage	Geography
Manatee County	Florida	Anchored advantage	Medium	Large	Low	Suburban
Miami-Dade County	Florida	Concentrated disadvantage	Large	Large	High	Urban
Orange County	Florida	Concentrated advantage	Large	Large	Low	Urban
Osceola County	Florida	Connected disadvantage	Large	Large	High	Suburban
Palm Beach County	Florida	Anchored advantage	Medium	Large	Low	Suburban
Pasco County	Florida	Disconnected advantage	Small	Small	Low	Suburban
Polk County	Florida	Disconnected disadvantage	Small	Small	High	Suburban
Seminole County	Florida	Anchored advantage	Medium	Large	Low	Suburban
St. Lucie County	Florida	Anchored disadvantage	Medium	Large	High	Suburban
Chattahoochee County	Georgia	Disconnected advantage	Small	Small	Low	Suburban
Echols County	Georgia	Disconnected disadvantage	Small	Small	High	Suburban
Gwinnett County	Georgia	Anchored advantage	Medium	Large	Low	Suburban
Hall County	Georgia	Connected advantage	Large	Large	Low	Suburban
Murray County	Georgia	Disconnected disadvantage	Small	Small	High	Suburban
Whitfield County	Georgia	Connected disadvantage	Large	Large	High	Suburban
Canyon County	Idaho	Disconnected disadvantage	Small	Small	High	Suburban
Owyhee County	Idaho	Disconnected disadvantage	Small	Small	High	Suburban
Boone County	Illinois	Disconnected advantage	Small	Small	Low	Suburban
Cook County	Illinois	Concentrated advantage	Large	Large	Low	Urban
DuPage County	Illinois	Anchored advantage	Medium	Large	Low	Suburban
Kane County	Illinois	Connected advantage	Large	Large	Low	Suburban
Kendall County	Illinois	Disconnected advantage	Small	Small	Low	Suburban
Lake County	Illinois	Anchored advantage	Medium	Large	Low	Suburban
Will County	Illinois	Anchored advantage	Medium	Large	Low	Suburban
Elkhart County	Indiana	Disconnected disadvantage	Small	Small	High	Suburban
Lake County	Indiana	Disconnected disadvantage	Small	Small	High	Suburban
Woodbury County	Iowa	Disconnected advantage	Small	Small	Low	Suburban
Sedgwick County	Kansas	Disconnected advantage	Small	Small	Low	Suburban
Wyandotte County	Kansas	Connected disadvantage	Large	Large	High	Suburban
Jefferson Parish	Louisiana	Anchored disadvantage	Medium	Large	High	Suburban
Montgomery County	Maryland	Anchored advantage	Medium	Large	Low	Suburban
Prince George’s County	Maryland	Anchored advantage	Medium	Large	Low	Suburban
Essex County	Massachusetts	Anchored advantage	Medium	Large	Low	Suburban
Hampden County	Massachusetts	Disconnected disadvantage	Small	Small	High	Suburban

County	State	Enclave Classification	Latino density	Foreign born population	Dis-advantage	Geography
Suffolk County	Massachusetts	Concentrated advantage	Large	Large	Low	Urban
Dakota County	Nebraska	Connected disadvantage	Large	Large	High	Suburban
Hall County	Nebraska	Anchored advantage	Medium	Large	Low	Suburban
Carson City	Nevada	Anchored advantage	Medium	Large	Low	Suburban
Clark County	Nevada	Concentrated disadvantage	Large	Large	High	Urban
Washoe County	Nevada	Anchored advantage	Medium	Large	Low	Suburban
Atlantic County	New Jersey	Anchored disadvantage	Medium	Large	High	Suburban
Bergen County	New Jersey	Anchored advantage	Medium	Large	Low	Suburban
Camden County	New Jersey	Disconnected advantage	Small	Small	Low	Suburban
Cumberland County	New Jersey	Disconnected disadvantage	Small	Small	High	Suburban
Essex County	New Jersey	Concentrated disadvantage	Large	Large	High	Urban
Hudson County	New Jersey	Concentrated advantage	Large	Large	Low	Urban
Mercer County	New Jersey	Anchored advantage	Medium	Large	Low	Suburban
Middlesex County	New Jersey	Anchored advantage	Medium	Large	Low	Suburban
Passaic County	New Jersey	Connected advantage	Large	Large	Low	Suburban
Somerset County	New Jersey	Anchored advantage	Medium	Large	Low	Suburban
Union County	New Jersey	Concentrated advantage	Large	Large	Low	Urban
Bernalillo County	New Mexico	Disconnected disadvantage	Small	Small	High	Suburban
Doña Ana County	New Mexico	Connected disadvantage	Large	Large	High	Suburban
San Juan County	New Mexico	Disconnected disadvantage	Small	Small	High	Suburban
Sandoval County	New Mexico	Disconnected advantage	Small	Small	Low	Suburban
Santa Fe County	New Mexico	Connected advantage	Large	Large	Low	Suburban
Torrance County	New Mexico	Disconnected disadvantage	Small	Small	High	Suburban
Valencia County	New Mexico	Disconnected disadvantage	Small	Small	High	Suburban
Bronx County	New York	Concentrated disadvantage	Large	Large	High	Urban
Kings County	New York	Concentrated disadvantage	Large	Large	High	Urban
Nassau County	New York	Anchored advantage	Medium	Large	Low	Suburban
New York County	New York	Concentrated advantage	Large	Large	Low	Urban
Orange County	New York	Disconnected advantage	Small	Small	Low	Suburban
Putnam County	New York	Anchored advantage	Medium	Large	Low	Suburban
Queens County	New York	Concentrated advantage	Large	Large	Low	Urban
Richmond County	New York	Concentrated advantage	Large	Large	Low	Urban
Rockland County	New York	Anchored advantage	Medium	Large	Low	Suburban
Suffolk County	New York	Anchored advantage	Medium	Large	Low	Suburban

County	State	Enclave Classification	Latino density	Foreign born population	Dis-advantage	Geography
Westchester County	New York	Anchored advantage	Medium	Large	Low	Suburban
Oklahoma County	Oklahoma	Detached disadvantage	Small	Small	High	Urban
Marion County	Oregon	Anchored disadvantage	Medium	Large	High	Suburban
Washington County	Oregon	Anchored advantage	Medium	Large	Low	Suburban
Yamhill County	Oregon	Disconnected advantage	Small	Small	Low	Suburban
Berks County	Pennsylvania	Disconnected advantage	Small	Small	Low	Suburban
Lehigh County	Pennsylvania	Anchored advantage	Medium	Large	Low	Suburban
Monroe County	Pennsylvania	Disconnected advantage	Small	Small	Low	Suburban
Philadelphia County	Pennsylvania	Concentrated disadvantage	Large	Large	High	Urban
Providence County	Rhode Island	Concentrated disadvantage	Large	Large	High	Urban
Saluda County	South Carolina	Disconnected disadvantage	Small	Small	High	Suburban
Aransas County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Atascosa County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Austin County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Bandera County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Bastrop County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Bell County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Bexar County	Texas	Concentrated disadvantage	Large	Large	High	Urban
Brazoria County	Texas	Connected advantage	Large	Large	Low	Suburban
Brazos County	Texas	Anchored advantage	Medium	Large	Low	Suburban
Burleson County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Caldwell County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Cameron County	Texas	Connected disadvantage	Large	Large	High	Suburban
Chambers County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Collin County	Texas	Concentrated advantage	Large	Large	Low	Urban
Comal County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Coryell County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Crosby County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Dallas County	Texas	Concentrated disadvantage	Large	Large	High	Urban
Denton County	Texas	Anchored advantage	Medium	Large	Low	Suburban
Ector County	Texas	Connected disadvantage	Large	Large	High	Suburban
El Paso County	Texas	Connected disadvantage	Large	Large	High	Suburban
Ellis County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Falls County	Texas	Disconnected disadvantage	Small	Small	High	Suburban

County	State	Enclave Classification	Latino density	Foreign born population	Dis-advantage	Geography
Fort Bend County	Texas	Anchored advantage	Medium	Large	Low	Suburban
Galveston County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Goliad County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Gregg County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Guadalupe County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Harris County	Texas	Concentrated disadvantage	Large	Large	High	Urban
Hays County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Hidalgo County	Texas	Connected disadvantage	Large	Large	High	Suburban
Hudspeth County	Texas	Connected disadvantage	Large	Large	High	Suburban
Hunt County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Irion County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Jefferson County	Texas	Anchored disadvantage	Medium	Large	High	Suburban
Johnson County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Jones County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Kaufman County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Kendall County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Lampasas County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Liberty County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Lubbock County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Lynn County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Martin County	Texas	Disconnected advantage	Small	Small	Low	Suburban
McLennan County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Medina County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Midland County	Texas	Connected advantage	Large	Large	Low	Suburban
Montgomery County	Texas	Anchored advantage	Medium	Large	Low	Suburban
Nueces County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Oldham County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Potter County	Texas	Connected disadvantage	Large	Large	High	Suburban
Randall County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Robertson County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Rockwall County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Rusk County	Texas	Disconnected advantage	Small	Small	Low	Suburban
San Patricio County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Smith County	Texas	Disconnected disadvantage	Small	Small	High	Suburban

County	State	Enclave Classification	Latino density	Foreign born population	Dis-advantage	Geography
Somervell County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Tarrant County	Texas	Concentrated advantage	Large	Large	Low	Urban
Taylor County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Tom Green County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Travis County	Texas	Concentrated advantage	Large	Large	Low	Urban
Victoria County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Waller County	Texas	Connected disadvantage	Large	Large	High	Suburban
Webb County	Texas	Connected disadvantage	Large	Large	High	Suburban
Wichita County	Texas	Disconnected disadvantage	Small	Small	High	Suburban
Williamson County	Texas	Anchored advantage	Medium	Large	Low	Suburban
Wilson County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Wise County	Texas	Disconnected advantage	Small	Small	Low	Suburban
Salt Lake County	Utah	Concentrated advantage	Large	Large	Low	Urban
Weber County	Utah	Disconnected advantage	Small	Small	Low	Suburban
Alexandria city	Virginia	Concentrated advantage	Large	Large	Low	Urban
Arlington County	Virginia	Concentrated advantage	Large	Large	Low	Urban
Bedford city	Virginia	Connected disadvantage	Large	Large	High	Suburban
Fairfax city	Virginia	Anchored advantage	Medium	Large	Low	Suburban
Fairfax County	Virginia	Anchored advantage	Medium	Large	Low	Suburban
Harrisonburg city	Virginia	Anchored advantage	Medium	Large	Low	Suburban
Manassas city	Virginia	Connected advantage	Large	Large	Low	Suburban
Manassas Park city	Virginia	Connected advantage	Large	Large	Low	Suburban
Prince William County	Virginia	Anchored advantage	Medium	Large	Low	Suburban
Winchester city	Virginia	Anchored advantage	Medium	Large	Low	Suburban
Benton County	Washington	Disconnected advantage	Small	Small	Low	Suburban
Chelan County	Washington	Connected advantage	Large	Large	Low	Suburban
Douglas County	Washington	Connected advantage	Large	Large	Low	Suburban
Franklin County	Washington	Connected disadvantage	Large	Large	High	Suburban
Skagit County	Washington	Disconnected advantage	Small	Small	Low	Suburban
Walla Walla County	Washington	Disconnected advantage	Small	Small	Low	Suburban
Yakima County	Washington	Connected disadvantage	Large	Large	High	Suburban
Milwaukee County	Wisconsin	Detached disadvantage	Small	Small	High	Urban
Laramie County	Wyoming	Disconnected advantage	Small	Small	Low	Suburban

APPENDIX B. NCHS Urban-Rural Classification Scheme for Counties

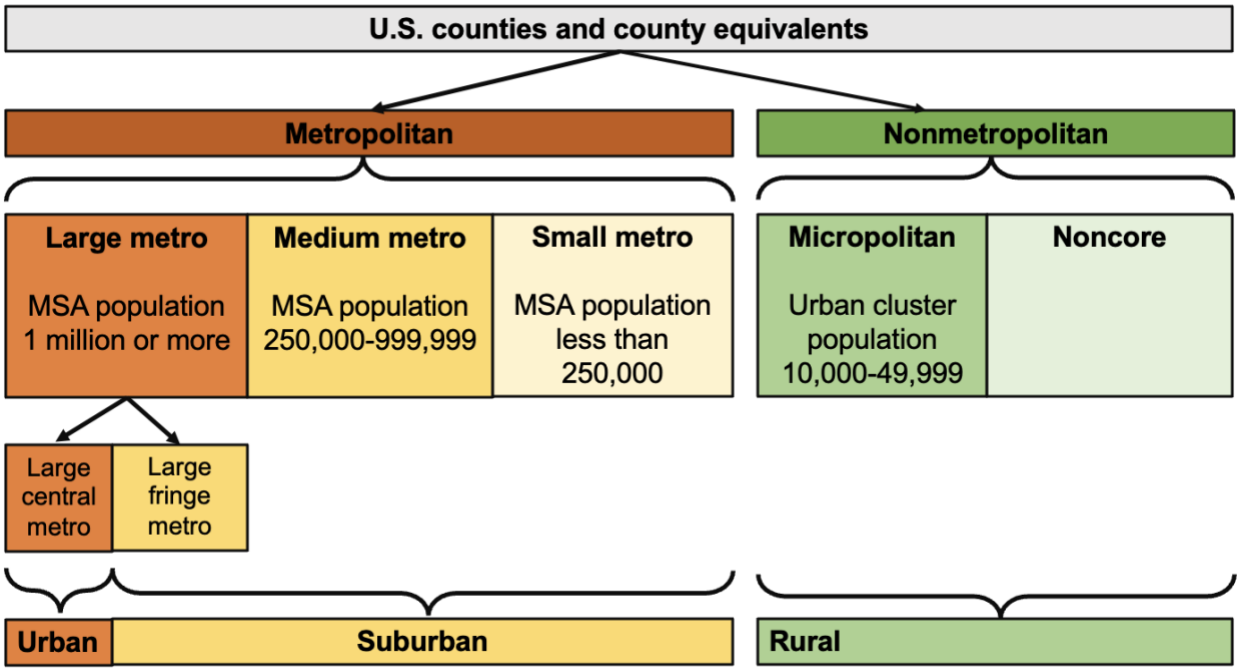


Figure 1. Adapted structure of the 2013 NCHS Urban-Rural Classification Scheme for U.S. Counties

Note. The NCHS scheme is based on the Office of Management and Budget's delineation of metropolitan and nonmetropolitan counties. A metropolitan area or metro is a region that consists of a densely populated urban core. The NCHS scheme also uses the cut points of the U.S. Department of Agriculture's Rural-Urban Continuum Codes divide metropolitan counties based on the population of their metropolitan statistical areas (MSA). Large metro counties are separated into large central and large fringe metro areas using NCHS classification rules. Nonmetropolitan counties were assigned to two levels based on the OMB's designated micropolitan or noncore status. MSAs consists of one or more counties that contain: a city of 50,000 or more people, or a Census-defined urbanized area and a total pop. of at least 100,000.

APPENDIX C. Missing and excluded data by variable and data match

Table 1. Missing and excluded data by variable and data match (N = 1,084,867)

Variable(s)	N (%) Excluded
1. Foreign nationals	19,076 (0.25)
2. Births to non-Hispanic mothers	5,795,889 (75.60)
3. Births to mothers of other or unknown Latino origin	294,713 (3.84)
4. Missing information about Latino origin	66,349 (0.87)
5. Birth plurality	36,578 (0.48)
6. Age	1,332 (0.02)
7. Unknown gestation period	681 (0.01)
8. Unlikely viable birth (less than 20 weeks)	384 (0.01)
9. Births to women of Latino origin in counties without context–relevant data (e.g., immigration policies)	15,707 (0.20)
10. Births to Latina mothers not residing in an ethnic enclave as defined for this study	344,673 (4.50)
11. Nativity	542 (0.01)
12. Marital status	35 (0.00)
13. Parity	1,622 (0.02)
14. Smoking	3,840 (0.05)

APPENDIX D. Flow chart of study population selection

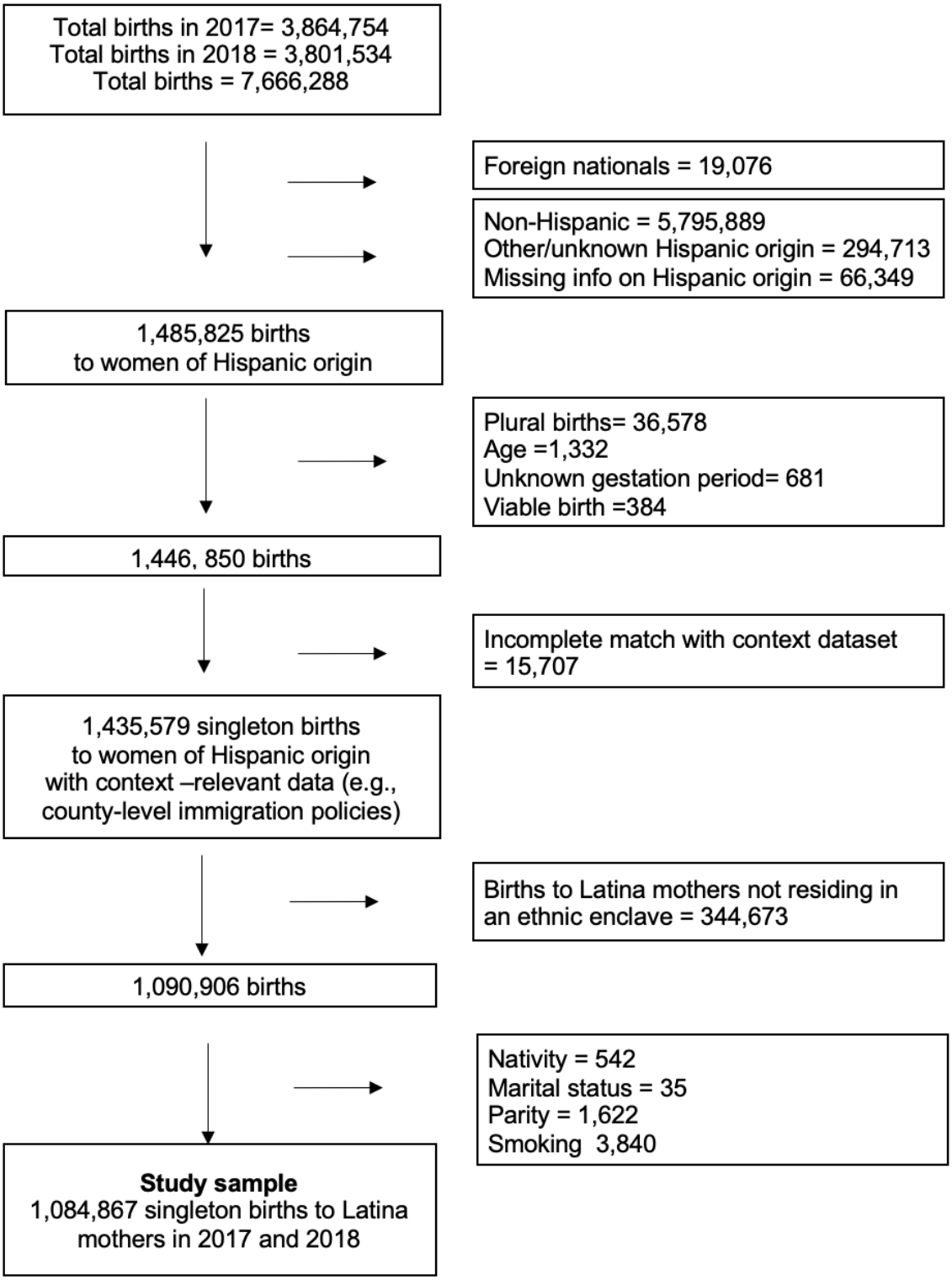
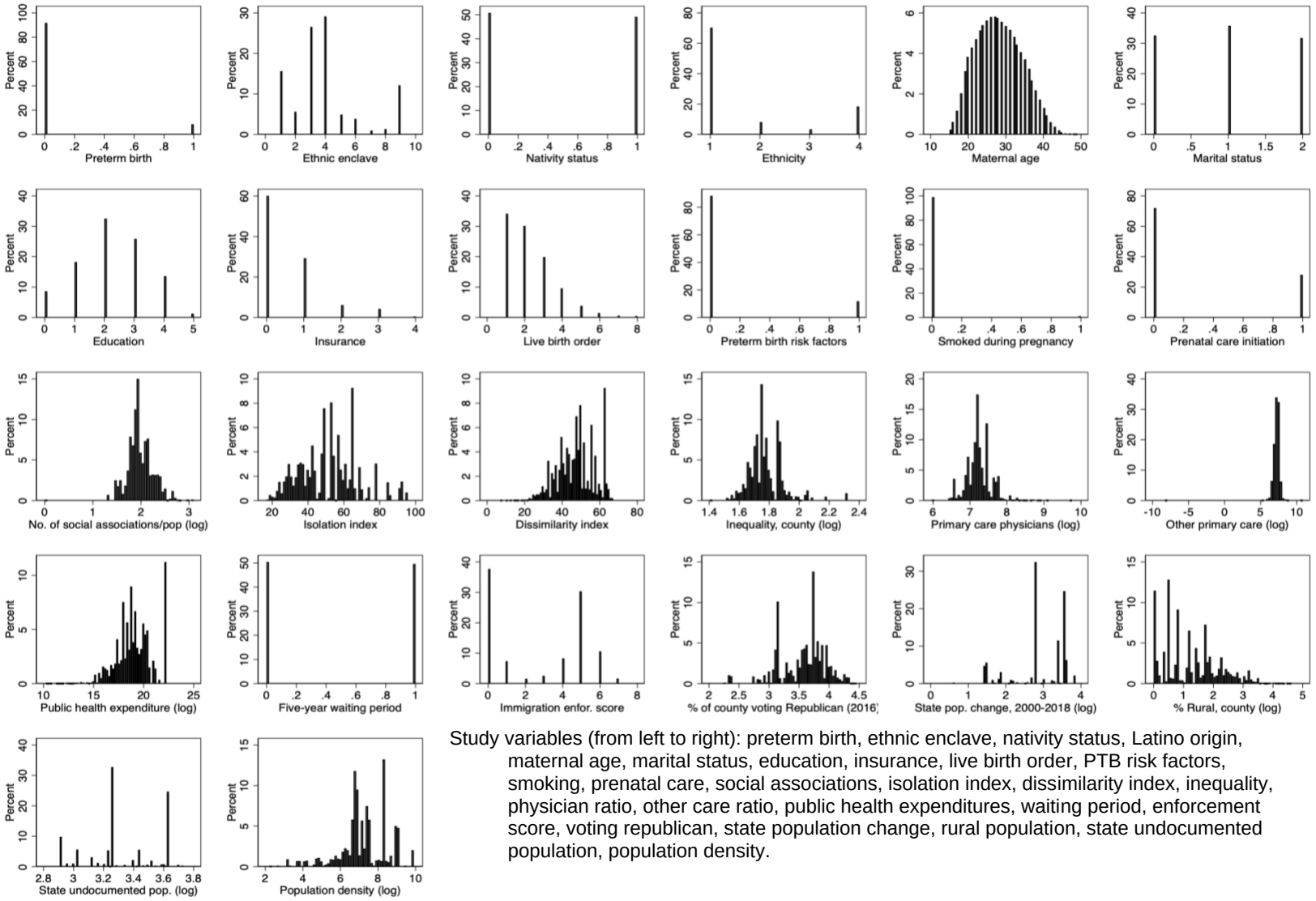


Figure 1. Flow chart of study population selection

APPENDIX E. Plots investigating study variables



Study variables (from left to right): preterm birth, ethnic enclave, nativity status, Latino origin, maternal age, marital status, education, insurance, live birth order, PTB risk factors, smoking, prenatal care, social associations, isolation index, dissimilarity index, inequality, physician ratio, other care ratio, public health expenditures, waiting period, enforcement score, voting republican, state population change, rural population, state undocumented population, population density.

Figure 1. Histograms of selected study variables

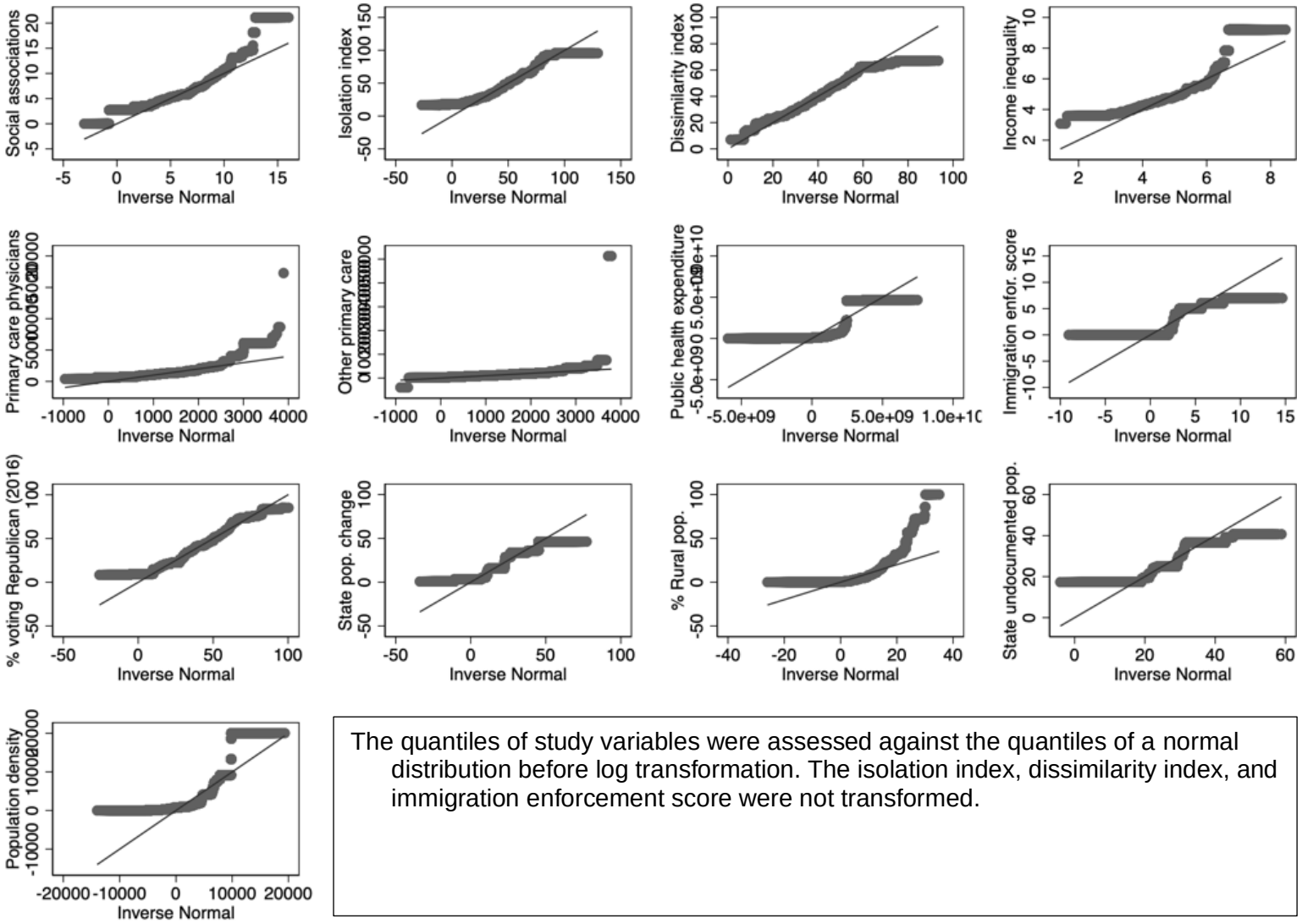


Figure 2. Q-Q plots of final selected study variables

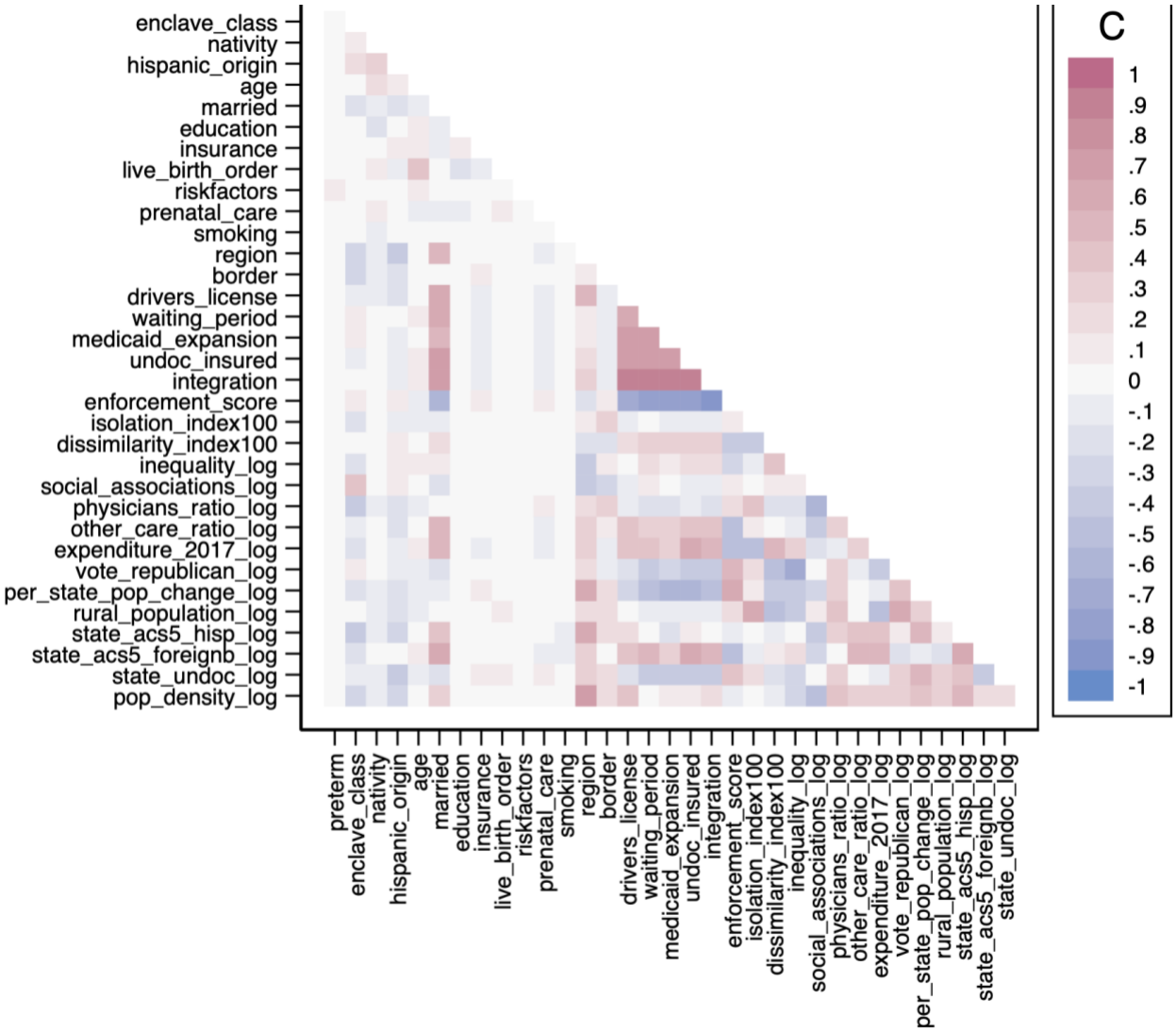


Figure 3. Correlation heatmap of variables considered for inclusion in final regression models
Note. The following variables were excluded from final regression analyses: integration score; state issues driver's licenses to undocumented immigrants, state expands Medicaid; state extends health insurance to undocumented children; state proportion of Latinos; state share of the foreign-born population; U.S. region; U.S.-Mexico Border

APPENDIX F. Sensitivity analyses: Multilevel regression models

Table 1. The null model assessing variance between enclaves, N=1,084,867

Predictor(s)	OR	95% CI
Constant	0.08***	0.08,0.09
County random intercept (geoid)	1.04***	1.03,1.05
-2 Log Likelihood	-309,136.01	
AIC	618,276.01	
BIC	618,299.81	
ICC	0.011	.009, .015
LR test vs. logistic model	p= 0.000	
Groups	216	
N. of cases	1,084,867	

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 2. Multilevel logistic regression models, N=1,084,867

Variables	m1		m2	
	OR	95% CI	OR	95% CI
Ethnic enclave				
Connected disadvantage	1.30***	1.17,1.45	1.34***	1.20,1.48
Connected advantage	1.05	0.95,1.17	1.07	0.96,1.20
Concentrated disadvantage	1.08	0.98,1.19	1.12*	1.01,1.23
Concentrated advantage	1.11*	1.01,1.21	1.11*	1.01,1.22
Disconnected disadvantage	1.15**	1.04,1.27	1.15**	1.04,1.27
Disconnected advantage	1.14*	1.03,1.26	1.13*	1.02,1.25
Detached disadvantage	1.13	0.91,1.40	1.19	0.96,1.48
Anchored disadvantage	0.99	0.86,1.13	1.00	0.87,1.14
Anchored advantage (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Individual level factors				
Nativity				
U.S. Born (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Foreign born	0.85***	0.84,0.86	0.85***	0.84,0.86
Latino *origin*				
Mexican (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Puerto Rican	1.21***	1.17,1.25	1.21***	1.17,1.25
Cuban	0.97	0.93,1.02	0.97	0.93,1.02
Central/South American	1.03*	1.01,1.05	1.03*	1.01,1.05
Maternal age (cont.)	1.02***	1.02,1.02	1.02***	1.02,1.02
Marital status				
Married (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Unmarried	1.10***	1.08,1.12	1.10***	1.08,1.12
Missing	0.98	0.88,1.09	0.97	0.87,1.07
Education				
8th grade or less (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Some high school	1.09***	1.06,1.13	1.09***	1.06,1.13
High school grad/GED	1.01	0.99,1.04	1.01	0.99,1.04
Some college/Associates	0.96**	0.93,0.99	0.96**	0.93,0.99
College +	0.79***	0.76,0.81	0.79***	0.76,0.82
Missing	1.09*	1.02,1.16	1.09*	1.02,1.16

Variables	m1		m2	
	OR	95% CI	OR	95% CI
Insurance				
Medicaid (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Private insurance	0.98*	0.96,1.00	0.98*	0.96,1.00
Self-pay	1.07***	1.04,1.10	1.07***	1.04,1.10
Other	1.09***	1.05,1.12	1.09***	1.05,1.12
Missing	1.36***	1.22,1.52	1.36***	1.22,1.52
No. of live births	1.03***	1.02,1.03	1.03***	1.02,1.03
Risk factors				
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Yes	2.40***	2.36,2.44	2.40***	2.36,2.44
Smoking				
No (ref)	1.00	1.00,1.00	1.00	1.00,1.00
Yes	1.61***	1.53,1.70	1.61***	1.53,1.70
Prenatal care				
Early initiation (ref)	1.00	1.00,1.00	1.00	1.00,1.00
2nd tri/Late/no initiation	1.02*	1.00,1.04	1.02*	1.00,1.04
Community-level factors				
Social associations (log)	1.05	0.94,1.18	1.08	0.96,1.22
Structural factors				
Isolation index	0.97+	0.93,1.00	0.98	0.94,1.01
Dissimilarity index	1.25	0.91,1.71	1.12	0.84,1.49
Inequality (log)	1.36*	1.03,1.78	1.32*	1.03,1.69
Primary care physicians (log)	0.98	0.89,1.08	0.97	0.88,1.07
Other primary care (log)	0.92*	0.86,0.99	0.96	0.89,1.03
Public health expenditure (log)	1.01	0.99,1.04	1.02+	1.00,1.05
Immigration enforcement score	1.00	0.98,1.02	1.02**	1.01,1.04
% of county pop. voting Republican, 2016 (log)	1.11*	1.01,1.22	1.11*	1.01,1.21
% Rural, county (log)	0.94**	0.90,0.98	0.94**	0.90,0.98
Population density (log)	1.03	0.99,1.06	1.02	0.99,1.05
Region				
Northeast (ref)	1.00	1.00,1.00		
Midwest	1.05	0.93,1.19		
South	1.17**	1.05,1.29		
West	1.01	0.89,1.14		
Border county				
US Non-Border Region (ref)	1.00	1.00,1.00		
US-Mexico Border Region	1.01	0.89,1.14		
Constant	0.02***	0.00,0.05	0.01***	0.00,0.04
var(_cons[geoid])	1.02***	1.01,1.02	1.02***	1.01,1.02
ICC	0.01		0.01	
-2 Log Likelihood	-302653.88		-302660.97	
AIC	605397.76		605403.95	
BIC	605933.12		605891.72	
N	1084867		1084867	
Groups	216		216	

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

APPENDIX G. Sensitivity analyses: Variance inflation factors

Table 1. Assessing the variance inflation factors of study variables, N=1,084,867

Variables	collin command[a]	Linear regression[b]				
	VIF	VIF	VIF	VIF	VIF	VIF
Ethnic enclave	1.93	--	--	--	--	--
Connected disadvantage	--	4.19	4.15	4.01	4.13	3.87
Connected advantage	--	1.81	1.79	1.78	1.81	1.75
Concentrated disadvantage	--	4.20	4.07	3.85	4.25	4.21
Concentrated advantage	--	4.74	4.46	4.45	4.54	4.36
Disconnected disadvantage	--	2.03	2.00	1.99	2.00	1.89
Disconnected advantage	--	1.66	1.65	1.64	1.65	1.58
Detached disadvantage	--	1.62	1.60	1.45	1.46	1.28
Anchored disadvantage	--	1.35	1.31	1.28	1.30	1.21
Anchored advantage (ref)	--	--	--	--	--	--
Individual level factors	--	--	--	--	--	--
Nativity	1.29	--	--	--	--	--
U.S. Born (ref)	--					
Foreign born		1.40	1.40	1.40	1.40	1.40
Latino origin	1.54	--	--	--	--	--
Mexican (ref)	--	--	--	--	--	--
Puerto Rican	--	1.57	1.47	1.47	1.50	1.49
Cuban	--	1.37	1.35	1.34	1.34	1.34
Central/South American	--	1.61	1.54	1.53	1.57	1.56
Age	1.56					
Maternal age (cont.)	--	1.70	1.70	1.70	1.70	1.70
Marital status	3.31	--	--	--	--	--
Married (ref)	--	--	--	--	--	--
Unmarried	--	1.57	1.57	1.57	1.57	1.57
Missing	--	14.47	10.76	7.39	8.71	7.65
Education	1.31	--	--	--	--	--
8th grade or less (ref)	--	--	--	--	--	--
Some high school	--	2.73	2.73	2.73	2.73	2.73
High school grad/GED	--	3.67	3.66	3.66	3.66	3.66
Some college/Associates	--	3.59	3.59	3.59	3.59	3.58

Variables	collin command[a]	Linear regression[b]				
	VIF	VIF	VIF	VIF	VIF	VIF
College +	--	2.90	2.90	2.90	2.90	2.89
Missing	--	1.16	1.15	1.15	1.15	1.15
Insurance	1.07	--	--	--	--	--
Medicaid (ref)	--	--	--	--	--	--
Private insurance	--	1.43	1.42	1.42	1.42	1.42
Self-pay	--	1.13	1.13	1.12	1.12	1.12
Other	--	1.06	1.06	1.06	1.06	1.05
Missing	--	1.01	1.01	1.01	1.01	1.01
No. of live births	1.44	--	--	--	--	--
Live birth order	--	1.49	1.49	1.49	1.49	1.49
Risk factors	1.02	--	--	--	--	--
No (ref)	--	--	--	--	--	--
Yes	--	1.02	1.02	1.02	1.02	1.02
Smoking	1.02	--	--	--	--	--
No (ref)	--	--	--	--	--	--
Yes	--	1.03	1.02	1.02	1.02	1.02
Prenatal care	1.06	--	--	--	--	--
Early initiation (ref)	--	--	--	--	--	--
2nd tri/late/no initiation	--	1.08	1.08	1.08	1.08	1.08
Community-level factors	--					
Social associations (log)	2.82	3.43	3.16	3.12	3.14	3.10
Structural factors	--	--	--	--	--	--
Isolation index	2.49	2.75	2.64	2.64	2.65	2.63
Dissimilarity index	2.51	2.96	2.81	2.77	2.78	2.63
Inequality (log)	2.52	3.20	3.04	3.01	3.01	2.45
Primary care physicians (log)	3.28	3.45	3.22	3.22	3.25	3.24
Other primary care (log)	2.95	3.13	3.05	2.74	2.94	2.68
Public health expenditure (log)	4.25	5.31	5.10	4.88	4.88	4.37
Integration	**14.19**	**26.55**	**14.56**	--	--	--
Immigration enforcement score	8.07	8.91	8.66	5.78	7.30	6.78
% of county pop. voting Republican, 2016 (log)	3.37	4.23	4.06	3.97	3.97	3.33
State population change, 2000-2018 (log)	**15.41**	**23.89**	5.68	4.43	4.43	3.77
% Rural, county (log)	3.77	4.83	4.44	4.42	4.45	4.43

Variables	collin command[a]	Linear regression[b]				
	VIF	VIF	VIF	VIF	VIF	VIF
State Hispanic population, acs5 (log)	9.55	**11.39**	9.95	8.78	9.12	--
State foreign born population, acs5 (log)	**12.35**	**15.47**	**10.27**	9.73	9.92	--
State undocumented immigrant population, 2018 (log)	5.4	6.74	5.90	5.48	5.52	2.47
Population density (log)	4.29	5.68	4.66	4.01	4.18	3.52
Region	**14.75**	--	--	--	--	--
Northeast (ref)	--	--	--	--	--	--
Midwest	--	2.87	--	--	--	--
South	--	**26.35**	--	--	--	--
West	--	**52.76**	--	--	--	--
Border county	1.57	--	--	--	--	--
US Non-Border Region (ref)	--	--	--	--	--	--
US-Mexico Border Region	--	1.82	1.81	1.81	1.82	--
Waiting period	--	--	--	--	--	--
No (ref)	--	--	--	--	--	--
Yes	--	--	--	--	5.34	5.12

Note. [a]assessed with the UCLA written user command which examines VIFs without fitting a regression model; [b]assessed using the standard stata procedure

APPENDIX H. Sensitivity analyses: Aim 1

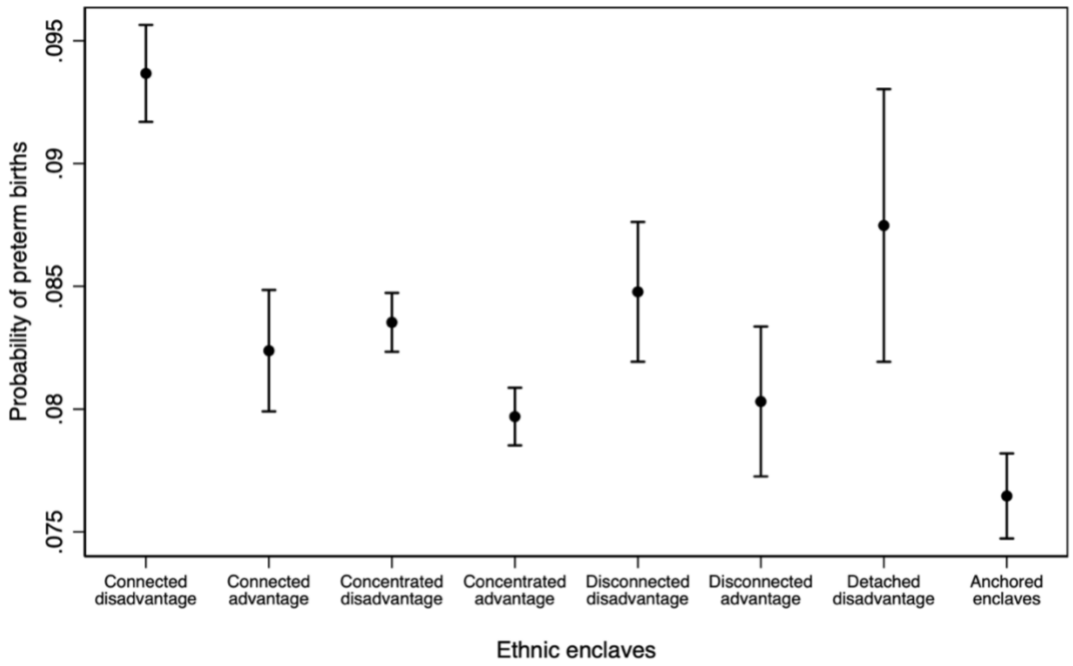


Figure 1. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births, N=1,084,867
Note. Anchored enclaves are combined.

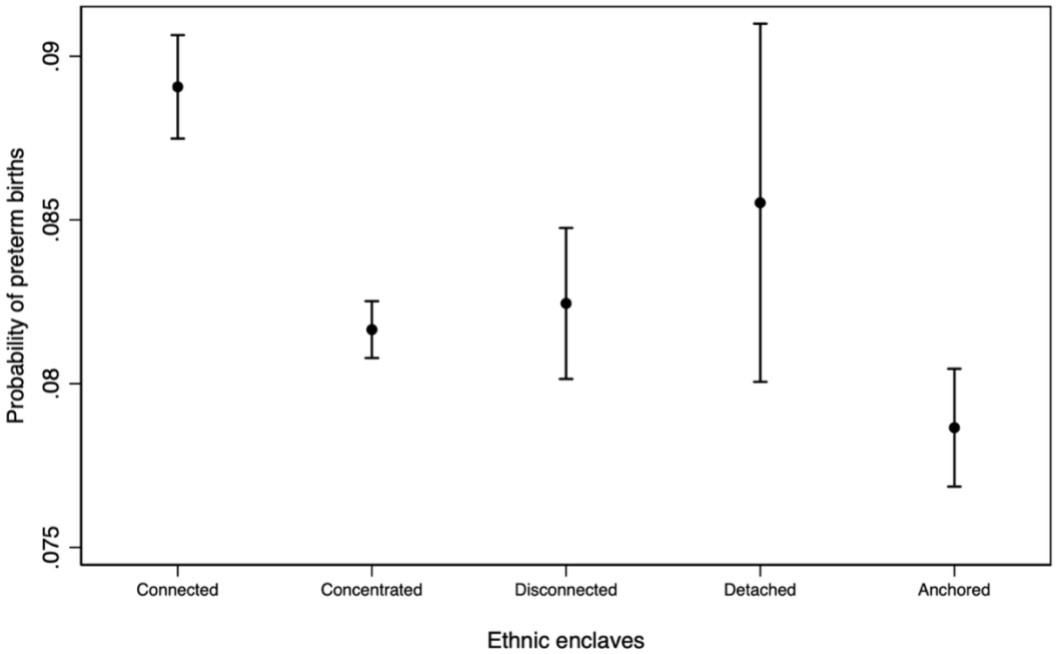


Figure 2. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births, N=1,084,867
Note. Larger enclave categories are used.

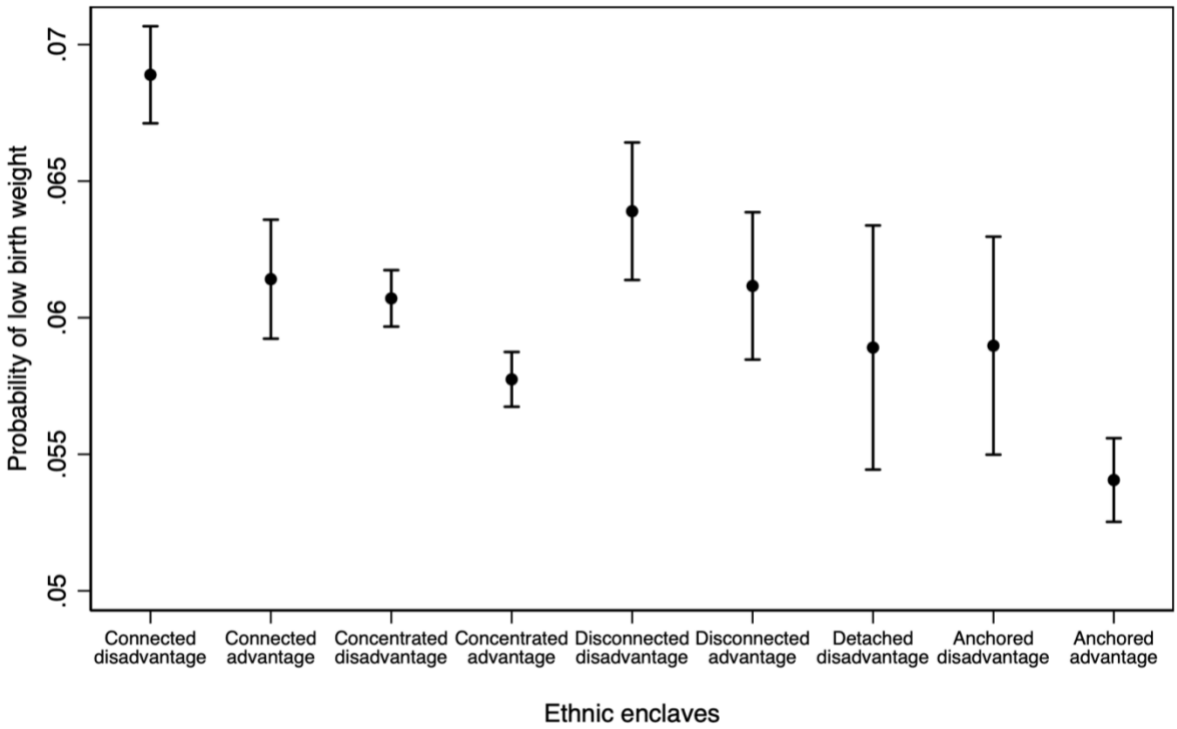


Figure 3. Adjusted predictive margins of the association between living in an ethnic enclave and low birth weight, N=1,084,867

APPENDIX I. Sensitivity analyses: Aim 2

Nativity status

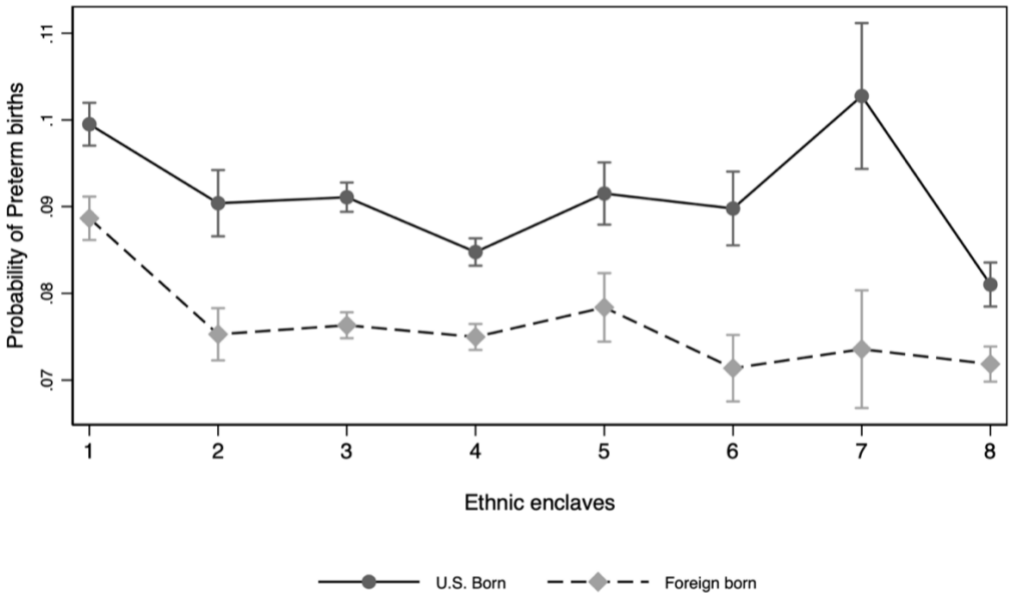


Figure 1. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births by nativity status, N=1,084,867
Note. (1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored enclaves. Anchored enclaves are combined.

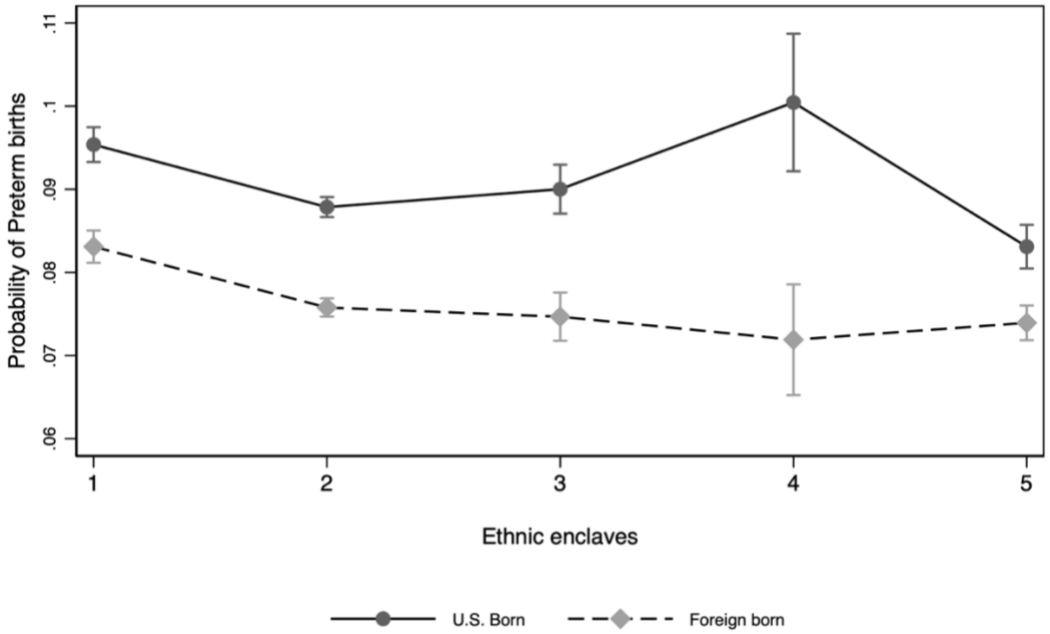


Figure 2. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births by nativity status, N=1,084,867
Note. (1) Connected; (2) Concentrated; (3) Disconnected; (4) Detached; (5) Anchored. Larger enclave categories are used.

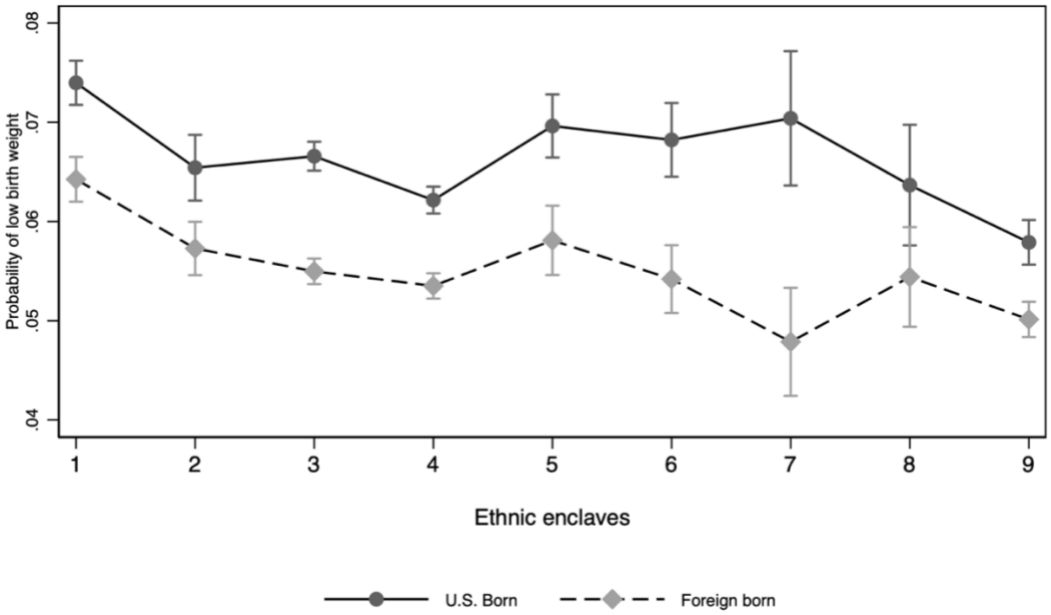


Figure 3. Adjusted predictive margins of the association between living in an ethnic enclave and low weight birth by nativity status, N=1,084,867
Note. (1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored disadvantage; (9) Anchored advantage.

Latino origin

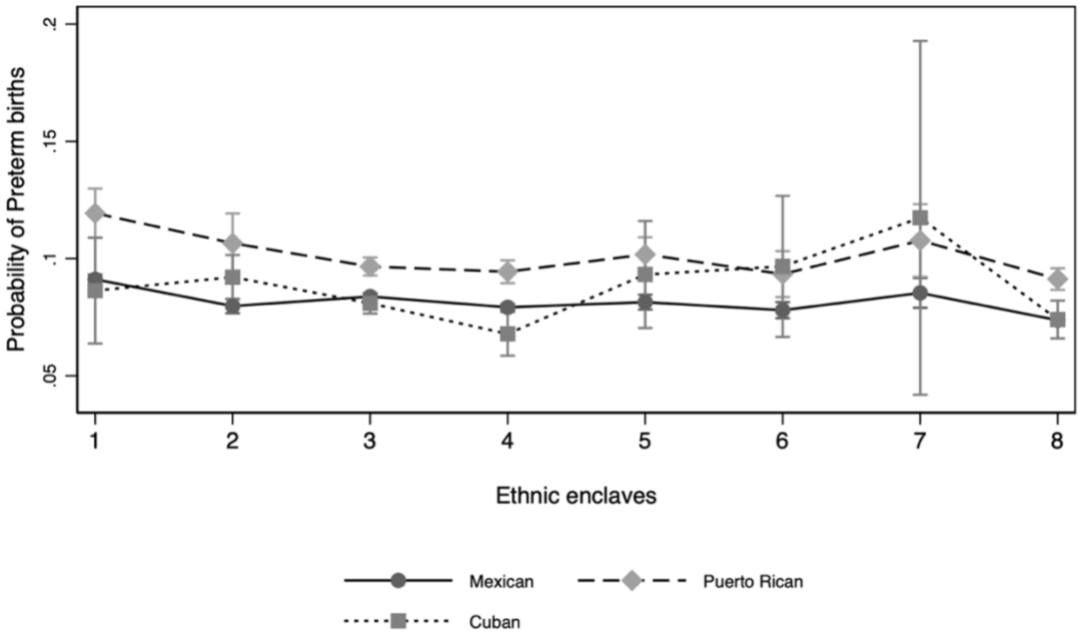


Figure 1. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births by Latino origin, N=886,170
Note. (1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored enclaves. Anchored enclaves are combined.

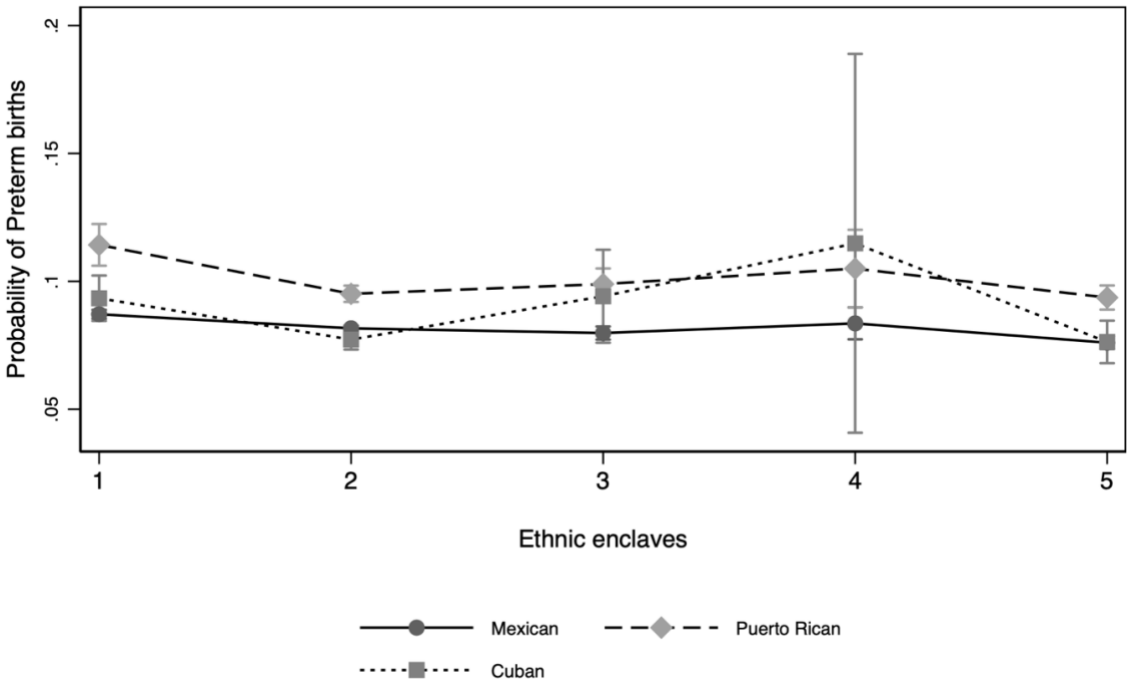


Figure 2. Adjusted predictive margins of the association between living in an ethnic enclave and preterm births by Latino origin, N=886,170
Note. (1) Connected; (2) Concentrated; (3) Disconnected; (4) Detached; (5) Anchored. Larger enclave categories are used.

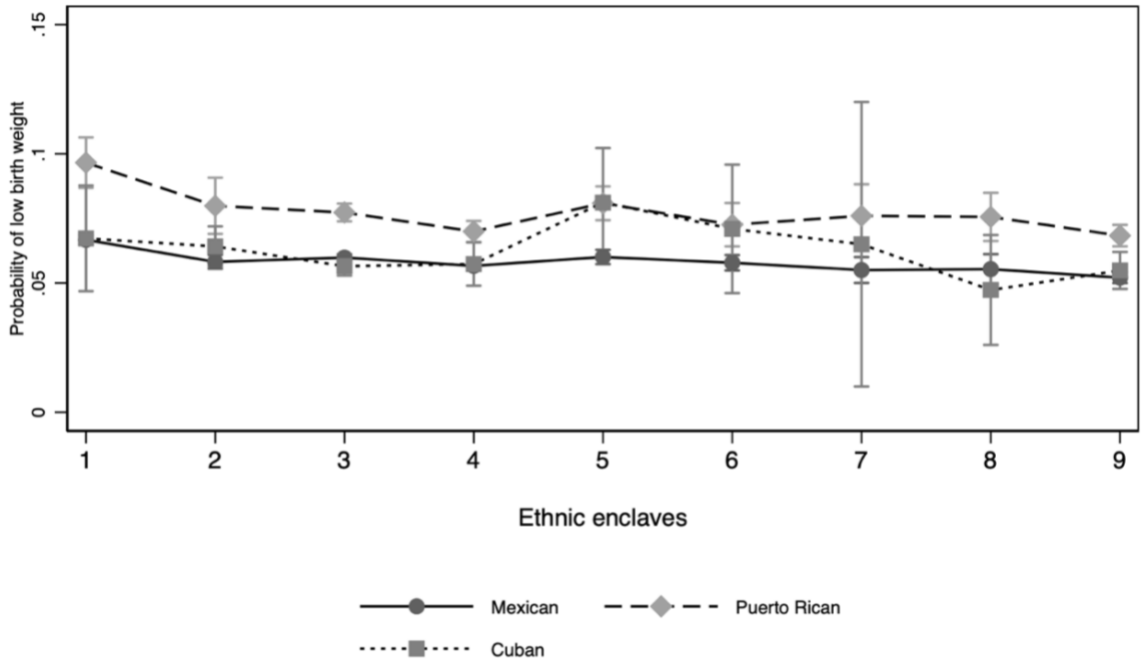


Figure 3. Adjusted predictive margins of the association between living in an ethnic enclave and low weight birth by Latino origin, N=886,170
Note. (1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored disadvantage; (9) Anchored advantage.

APPENDIX J. Sensitivity analyses: Aim 3

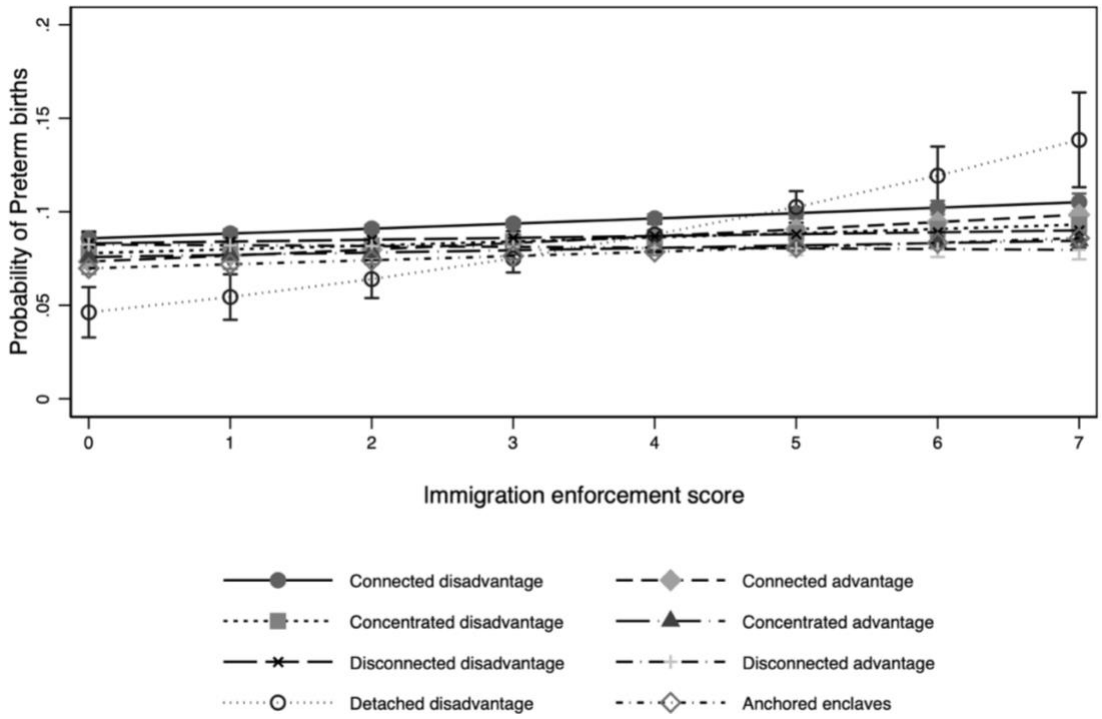


Figure 1. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies, and preterm births, N=1,084,867
Note. Anchored enclaves are combined

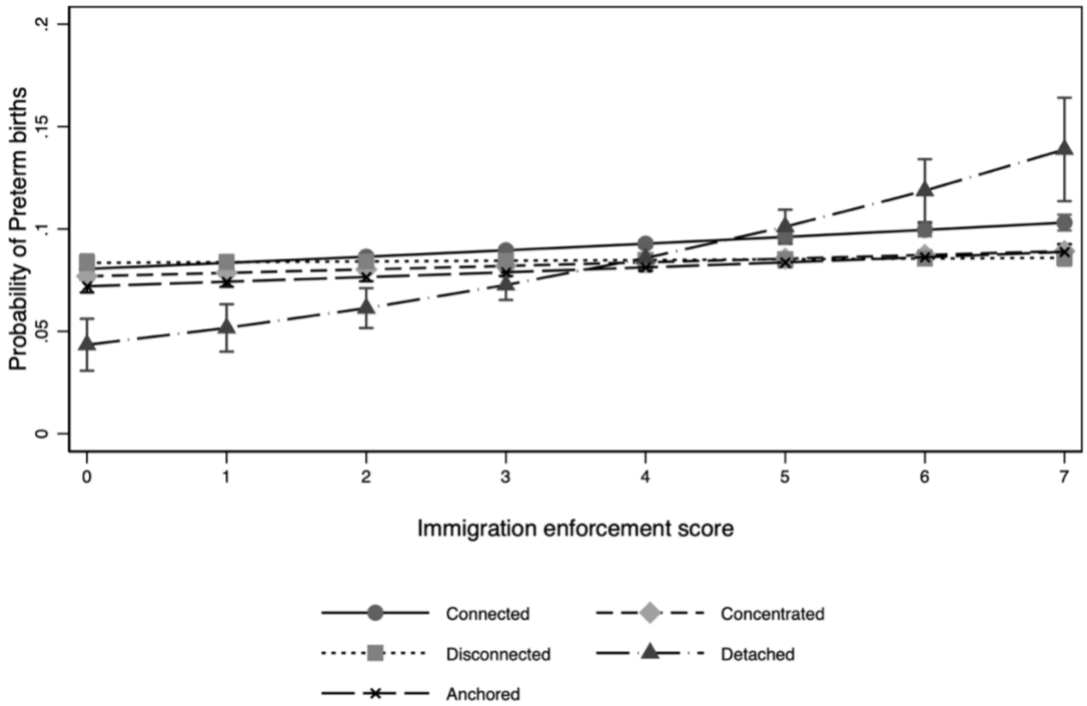


Figure 2. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies, and preterm births, N=1,084,867
Note. Larger enclave categories are used

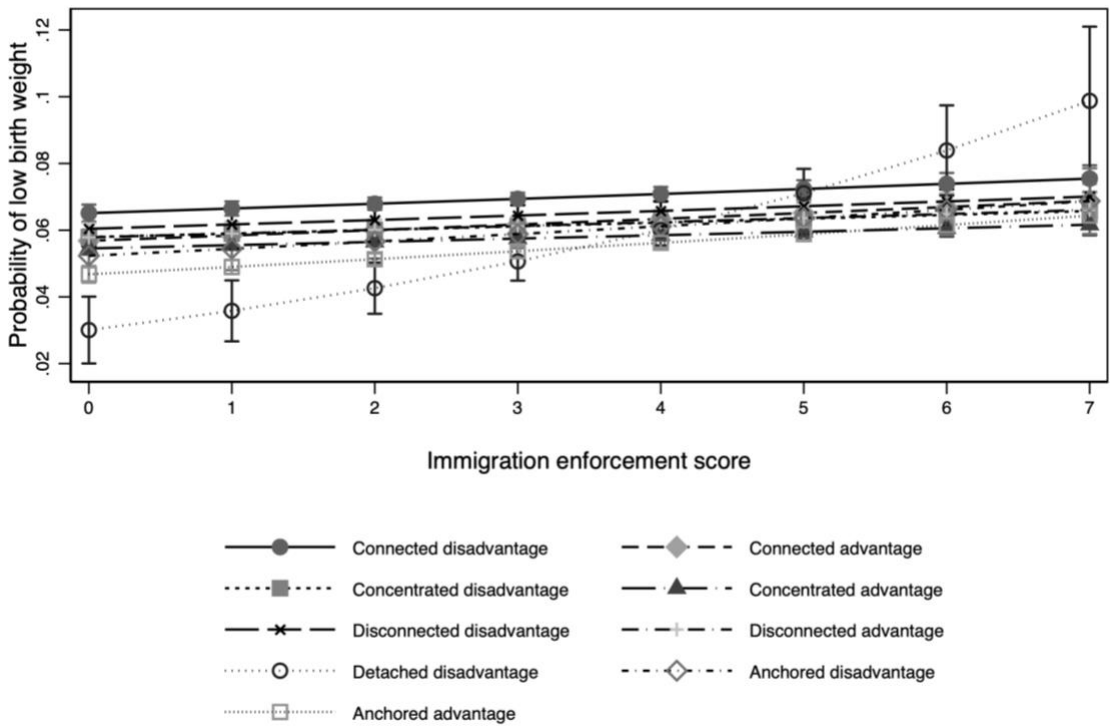


Figure 3. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies, and low birth weight, N=1,084,867
Note. Anchored enclaves are combined

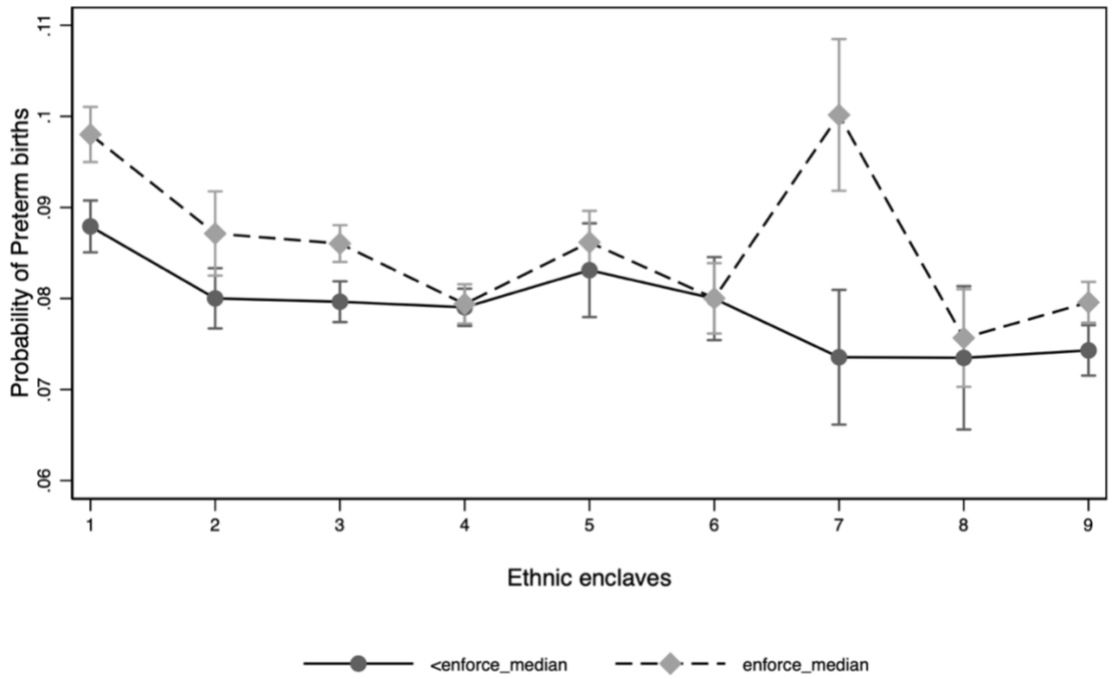


Figure 4. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies (median), and preterm births, N=1,084,867
Note. (1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored disadvantage; (9) Anchored advantage.

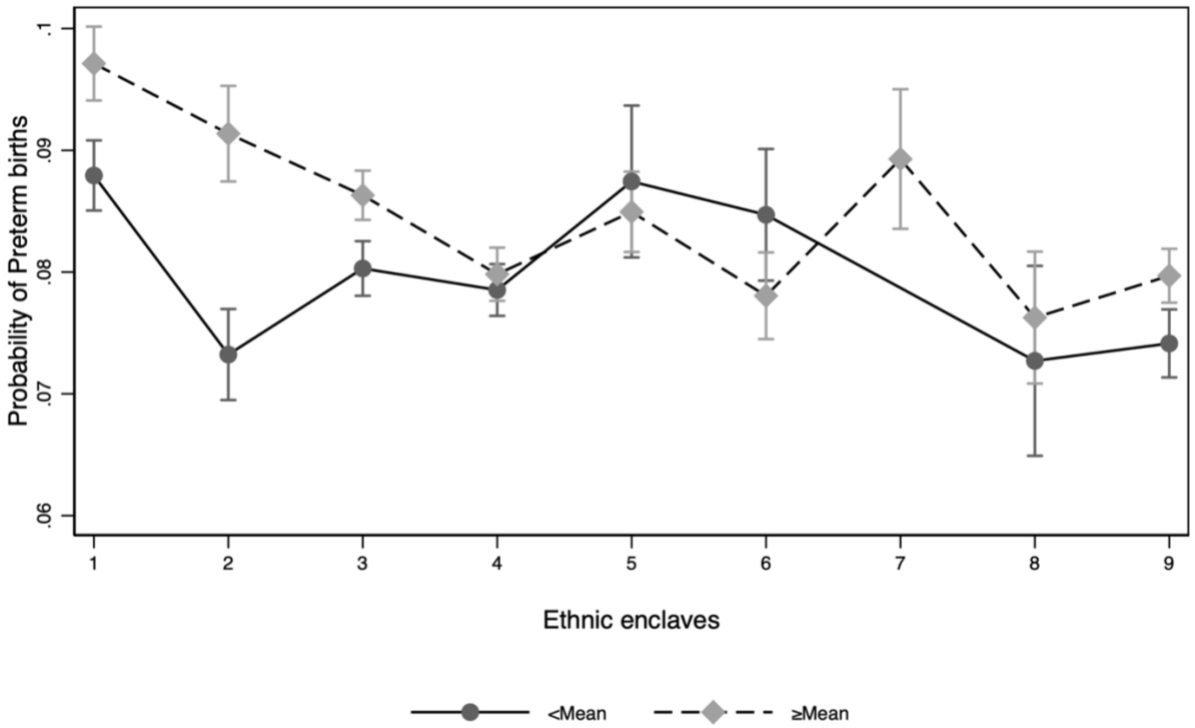


Figure 5. Adjusted predictive margins of the association between living in an ethnic enclave, immigration enforcement policies (mean), and preterm births, N=1,084,867
Note. (1) Connected disadvantage; (2) Connected advantage; (3) Concentrated disadvantage; (4) Concentrated advantage; (5) Disconnected disadvantage; (6) Disconnected advantage; (7) Detached disadvantage; (8) Anchored disadvantage; (9) Anchored advantage.

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