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UNIVERSITY OF CALIFORNIA

Los Angeles

Mobility and Racial-Spatial Isolation in Suburbs

A dissertation submitted in partial satisfaction of the requirements
for the degree Doctor of Philosophy in Urban Planning

by

Madeline Clare Wander

2025

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ABSTRACT OF THE DISSERTATION

Mobility and Racial-Spatial Isolation in Suburbs

by

Madeline Clare Wander

Doctor of Philosophy in Urban Planning

University of California, Los Angeles, 2025

Professor Evelyn A. Blumenberg, Chair

In recent decades, U.S. suburbs have experienced an increase in racial diversity. At the same time, suburbs have experienced racial segregation and, in some areas, economic distress. Of course, suburban landscapes differ from urban ones, particularly with respect to the dispersion of land uses and activities, which shapes people's ability to move through space and reach destinations. It is therefore important to consider whether the movement of people of color to increasingly segregated suburbs has introduced additional or different dimensions of racialized disparities in physical mobility, and thus limited access to opportunities and resources. Toward this end, this dissertation uses a mixed-methods approach to explore the following research questions: How does mobility affect racial-spatial isolation in suburbs (compared to urban areas)? How does the relationship between mobility and racial-spatial isolation operate in suburbs—and how does this relationship shape the mobility experiences and economic outcomes of low-income suburbanites of color? My quantitative analysis draws on spatial data from the 2017 National Household Travel Survey California Add-on sample and the 2019 5-year

American Community Survey. My qualitative analysis draws on data from in-depth interviews and cognitive mapping exercises with 30 low-income people of color in Southern California's largely suburban Inland Empire.

Findings show that in suburbs, living in a fully-equipped household (in which there is at least one car per adult) increases white isolation in working-age adults' activity spaces. Conversely, living in a car-deficit household (in which there are fewer cars than adults) increases Latino isolation in activity spaces. In the context of the "peripheralization" of segregation, these findings suggest that being highly mobile contributes to processes of racial exclusion, which maintains white suburban space, and being mobility constrained contributes to processes of racial-suburban containment. Working-age adults of color in suburbs indeed have higher levels of car access than those in urban areas, but their car access can be extremely unstable, which leads to a multitude of mobility constraints in their day-to-day lives. While housing opportunities and familial connections draw people of color to suburbs and restrictions on residential location drives racial segregation, mobility constraints cement racial-suburban isolation. Such isolation is particularly dire for those living in suburbs, compared to those in urban areas, as such geographies are extremely difficult to traverse without a car—hindering access to opportunities, principally employment in nearby better-resourced suburbs.

The dissertation of Madeline Clare Wander is approved.

Genevieve Gonzalez Carpio

Ananya Roy

Brian D. Taylor

Evelyn A. Blumenberg, Chair

University of California, Los Angeles

2025

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BIOGRAPHICAL SKETCH

Madeline Wander earned a BA in Urban and Environmental Policy from Occidental College and a Master's in Urban and Regional Planning from University of California, Los Angeles (UCLA). Prior to entering into the UCLA Urban Planning PhD Program, Madeline was a Senior Data Analyst at the University of Southern California Program for Environmental and Regional Equity (now the USC Equity Research Institute) where she worked with community-based organizations, foundations, and government agencies on research around equitable urban planning, social-movement building, and environmental justice. Prior to that, she was involved in a variety of organizing efforts, including the affordable housing coalition Housing LA and Barack Obama's 2008 presidential campaign in Colorado. At UCLA, she was a Graduate Researcher at the Institute of Transportation Studies and the Lewis Center for Regional Policy Studies and a Teaching Associate in the Luskin School of Public Affairs. Madeline has published in peer-reviewed journals like *Annual Review of Public Health*, *Applied Geography*, *Journal of Transport Geography*, *PLoS Medicine*, and *Urban Geography*. She regularly presents her research at conferences like the Annual Association of Collegiate Schools of Planning Conference and the American Association of Geographers Conference. She is the recipient of numerous academic awards and fellowships, including: U.S. Department of Transportation Dwight D. Eisenhower Graduate Transportation Fellowship and "Top Rated Doctoral Fellow" Award, UCLA Graduate Division Dissertation Award, UCLA Institute of Transportation Studies Dissertation Fellowship, UCLA Graduate Research Mentorship Fellowship, UCLA Graduate Summer Research Mentorship Program Fellowship, Women's Transportation Seminar Board of

Directors Graduate Fellowship (Los Angeles Chapter), and American Institute of Certified Planners Outstanding Student Award.

Chapter 1: Introduction

In the United States, transportation scholars have long documented racialized disparities in mobility and transportation access, and in turn spatial access to opportunities (see Barajas 2021; Bastiaanssen, Johnson, and Lucas 2020 for recent reviews). Amidst the legacy of state-sanctioned practices and policies that confined low-income communities of color to neglected urban neighborhoods away from white suburbia (Jackson 1985; Lipsitz 2018; Pulido 2000; Rothstein 2017), scholars concerned with such transportation disparities have tended to focus on urban areas.

In recent decades, however, the traditional racial-spatial divide in U.S. regions has blurred, with an unprecedented growth of residents of color, including low-income, in suburbs (Frey 2011, 2022; Howell and Timberlake 2013; Lichter, Theide, and Brooks 2023; Nicolaides 2024; Parker et al. 2018; Schouten 2021). But as suburbs have experienced an increase in residents of color, they have also experienced increased racial residential segregation therein (Lichter et al. 2010; Lichter, Parisi, and Taquino 2015; Lichter et al. 2023; Schafran 2018). While some suburbs continue to experience economic prosperity, other suburbs, and the people who live in them, are experiencing economic distress (Covington 2015; De Lara 2018; Denton and Gibbons 2013; Howell and Timberlake 2013; Kneebone 2019; powell and Reece 2013; Schafran 2018; Schafran and Wegmann 2012). Of course, suburban landscapes differ from urban ones, particularly in terms of the dispersion of land uses and activities—which shape people’s ability to move through space and reach destinations. And over time, U.S. regions, including suburbs, have become increasingly spread out (Blumenberg and King 2021).

Amidst such complex and changing regional terrains, it is important to consider whether the expansion of low-income people of color to increasingly segregated and dispersed suburbs

has introduced additional or different dimensions of racialized disparities in mobility and access from those found in urban areas. It is also critical to understand if and how such disparities in mobility and access shape racial segregation within suburbs. This is because immobility and segregation can potentially combine to sever spatial access to opportunities, such as employment. In this dissertation, I pursue these lines of inquiry.

The Peripheralization of Segregation

Historically, policies and practices—such as redlining, lender discrimination, real estate steering, racially-restrictive housing covenants, and physical violence against people of color—shaped U.S. suburbs as spaces of racial exclusion (Jackson 1985; Lipsitz 1995; Massey and Denton 1993; Pulido 2000; Rothstein 2017). Specifically, in the early- to mid-20th century, racial-spatial exclusion meant developing and maintaining suburbs as white space. Creating such exclusive space allowed white people to hoard wealth-building opportunities such as homeownership as well as tax bases that fund services like local schools in suburbs—which simultaneously deprived people of color in inner cities of resources and opportunities (Jackson 1985; Orfield and Luce 2013; Pulido 2000). Such racial-suburban exclusion is a key mechanism of what Lipsitz (1995, 2018) conceptualizes as the “possessive investment in whiteness,” which ensures the continual bestowing of advantage upon white people toward upholding white supremacy.

However, demographic changes have led scholars to re-consider traditional racial-spatial understandings of suburbanization in the contemporary context. In recent decades, suburbs have experienced an unprecedented growth of people of color (Frey 2011; Howell and Timberlake 2013; Lichter et al. 2023; Parker et al. 2018). Figure 1 (Lichter et al. 2023) shows that between

1990 and 2020, the proportions of Black, Hispanic, and Asian¹ residents living in suburbs of U.S. metropolitan areas all crossed the 50 percent threshold.

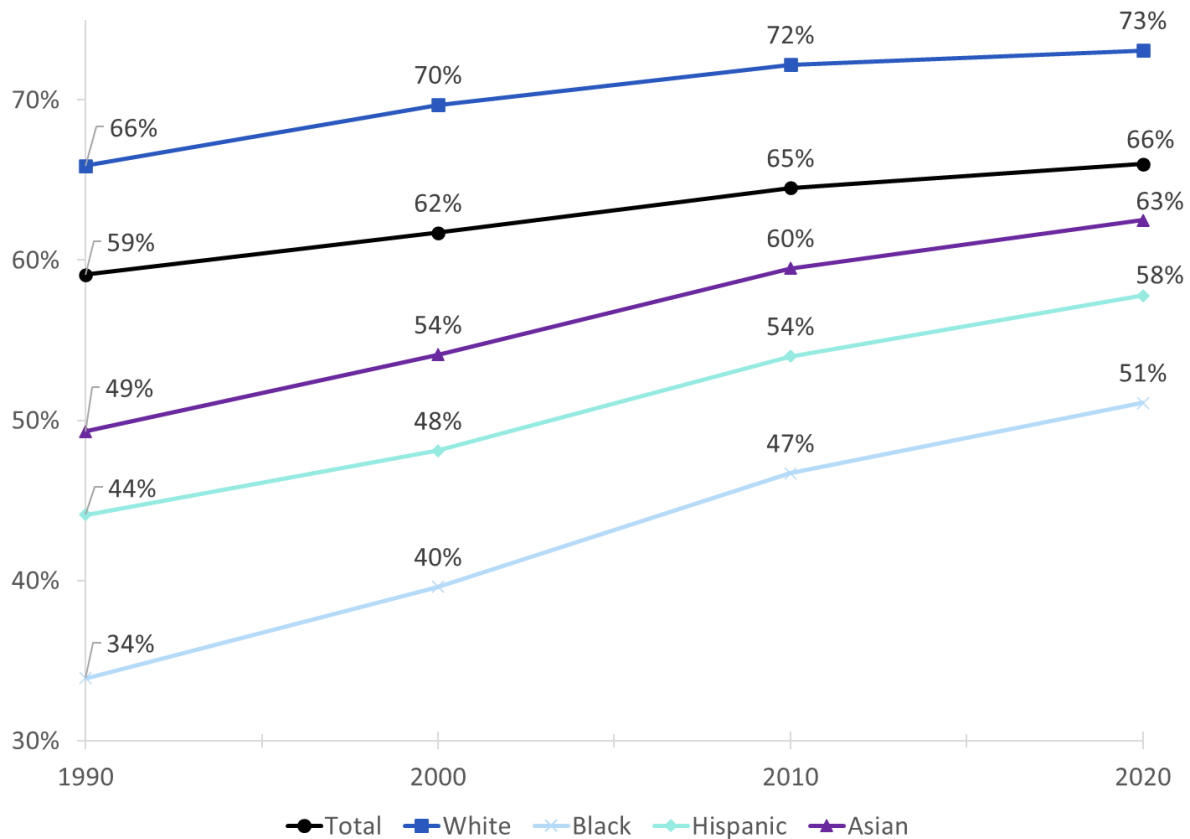


Figure 1 – Percent of U.S Metropolitan Statistical Area Residents Living in Suburban Tracts by Race/Ethnicity from Lichter, Thiede, and Brooks (2023)

Specifically, in 2020, 63 percent of Asian residents, 58 percent of Hispanic residents, and 51 percent of Black residents lived in suburbs. The proportion of white residents living in suburbs also continued to grow, increasing from about two thirds (66 percent) in 1990 to nearly three

¹ Throughout this dissertation, when referring to specific racial/ethnic groups, I use the terminology that is used in the sources that I am referencing or analyzing. This is why readers will notice some inconsistent racial/ethnic terminology. For example, here, I use the term “Hispanic” because that is the term that Lichter et al. (2023) use. Later in this chapter, I use the term “Latina/o,” which Carpio (2019) uses, and “Latinx,” which De Lara (2018) uses. But all three of these terms refer to the same racial/ethnic group.

quarters (73 percent) in 2020. In short, a majority of U.S. metro residents, across all racial/ethnic groups, now reside in suburbs.

But research also shows that the steady increase of people of color living in suburbs in recent decades has not necessarily translated into racial integration in suburbs. Instead, many scholars argue that demographic change in and across suburbs has been accompanied by the “peripheralization” of racial segregation (Covington 2015; De Lara 2018; Denton and Gibbons 2013; Lichter et al. 2010, 2015, 2023; powell and Reece 2013; Schafran 2018; Schafran and Wegmann 2012).

Between 1990 and 2010, within-place (or within-neighborhood) segregation indeed declined. However, during that same period, *between*-place segregation—including in suburbs—increased. This was especially the case between places with relatively large shares of Black residents and others (Lichter et al. 2015). Between 2010 and 2020, Black suburbanites became less likely to have white neighbors than they used to. Moreover, since 1990, Hispanic and Asian suburbanites’ exposure to whites also decreased (Lichter et al. 2023). These findings imply is that people of color are moving to those areas—specifically suburbs—from which white people are moving (Lichter et al. 2023). Indeed, Parisi et al. (2019) find that white suburbanites who move do so from suburbs with more racially-diverse populations to suburbs that are predominantly white.

The peripheralization of segregation is exemplified in metropolitan regions of California, where scholars have also disproportionately studied and conceptualized this racial-spatial phenomenon. As Schafran (2018) explains in his analysis of Northern California (specifically the San Francisco Bay Area), while communities of color “may no longer be exclusively trapped in underserved and disinvested inner cities” (2018:7), as people of color have moved outward,

metro regions are experiencing a type of “resegregation.” Such resegregation includes both older and more emergent forms of segregation—across, between, and within different parts of regions. And in the contemporary context of resegregation, scholars have unearthed interconnected processes of racial exclusion (i.e., creating and maintaining white space) and racial containment (i.e., spatially confining communities of color to the less desirable areas) *within* suburban geographies.

In her study of Southern California, Carpio (2019) examines these interconnected processes in the context of the relatively early suburbanization of Black and Latina/o households—particularly in the Inland Empire comprised of the largely suburban counties of Riverside and San Bernardino to the east of Los Angeles County. Carpio finds that uniquely expansive fair housing efforts in the 1950s and 1960s opened up the potential for “unsegregated living in spacious modern homes” for Black and Latino/a families in the Los Angeles suburbs, particularly in the Inland Empire. Yet, as Carpio finds, “[Despite] the promise of integration based on shared class status, seemingly blank-slate post-fair housing suburbs soon reproduced disparities” (Carpio 2019:200). Specifically, the increasing presence of people of color in the Inland Empire was met with the familiar practices of racial real estate steering, discriminatory lending, and physical violence, allowing whites to re-create exclusive residential, commercial, and educational spaces in the eastern parts of the vast suburban landscape. This, in turn, led to a process of “suburban ghettoization” in Black and Latina/o areas in the western parts of the Inland Empire (Carpio 2019).

As the Inland Empire has rapidly expanded in terms of both population and land development over the last several decades (Collins et al. 2024)—associated largely with the massive logistics industry that has taken over the region—segregation has intensified as well (De

Lara 2018). De Lara (2018) finds that much of the region's Latinx and immigrant communities serve as the workforce for the logistics industry, where they face exploitative conditions. But they also live next to the polluting infrastructure associated with the logistics industry, confining them to toxic parts of suburbs where they must bear the environmental and health brunt of industrial activity. Meanwhile, white communities continue to carve out exclusive spaces away from such toxic activity; this allows them to benefit from the logistics industry without bearing the negative externalities associated with it.

In these ways, racial-suburban formation still contributes to the “possessive investment in whiteness” (Lipsitz 1995, 2018)—it just no longer falls so neatly along the city-suburb divide. Moreover, as both Pulido (2000) and De Lara (2018) explain, the interconnected processes of racial exclusion and racial containment between cities and suburbs (Pulido 2000)—and now between suburbs and suburbs (De Lara 2018)—is dictated by white privilege, which is about benefitting white people *at the expense of* people of color. And, particularly in the case of the Inland Empire, in addition to facing environmental injustices, another critical consequence of the peripheralization of segregation is that suburbanites of color, particularly those who are low-income, are denied spatial access to the benefits of living in suburbs, such as employment opportunities and well-resourced public services, like schools (Covington 2015; Orfield and Luce 2013).

In conceptual and empirical understandings of the more recent increases of people of color residing in suburbs as well as the peripheralization of segregation, scholars have largely focused on the role of housing. Empirical research shows that in addition to traditional draws of suburban living—such as more living space, “better” schools, and “less” crime than in cities—a dominant explanation of the move of people of color, particularly those with moderate or lower

incomes, to the suburbs is housing costs. Specifically, increased housing costs in cities has rendered the suburbs as relatively affordable, including providing homeownership opportunities that are otherwise out of reach for many in more urban areas (Covington 2015; Howell and Timberlake 2013; Schafran and Wegmann 2012). Moreover, to explain contemporary forms of segregation *within* suburbs, as I mention above, research points to tried-and-true methods like racial real estate steering and physical violence, but also predatory lending and NIMBYism (Covington 2015), including discrimination against housing voucher holders (Covington, Freeman, and Stoll 2011; Kirkpatrick and Gallagher 2013). In these ways, scholars have explored the role of housing in both the increase of people of color in suburbs and “resegregation” of regions, including in suburbs.

But what about the role of physical mobility—or the ability to move through space in the way(s) one wants and needs to move? Diverging from much of the scholarship examining racial-suburban formation, Carpio (2019) draws on the academic field of mobilities (Urry 2007), which focuses largely on “people’s experiences and associated meanings of travel and of immobility” (Hanson 2015:8). Coming out of mobilities as well as on-the-ground organizing and theorizing, the more recent concept of mobility justice centers the idea of state-led or state-sanctioned “mobility control” as critical in maintaining spatial inequalities (Sheller 2018; The Untokening Collective 2017). To explain the racial-spatial evolution of the suburban Inland Empire, in particular, Carpio (2019) argues that, over time, various forms of restrictions on the mobility of people of color—from discriminatory bicycle ordinances to racist immigrant policy to targeted traffic checkpoints—allowed for the creation and management of racialized spatial arrangements in suburban geographies toward upholding white supremacy.

Such conceptual frameworks beg the following question: How do restrictions on people's mobility shape processes of racial exclusion and racial containment in *today's* segregating suburbs? Scholars have yet to adequately explore this question.

Examining the Role of Mobility in Racial-Spatial Isolation in Suburbs

In transportation planning, scholars have typically focused on disparities in mobility and access² of low-income people of color in dense urban areas. This makes sense, as cities, particularly dense inner cities, are the traditional sites of disinvestment by the state and private capital (rooted largely in early- to mid-20th century redlining that fueled white homeownership in the suburbs). Overall, such scholars have found that low-income people of color have less access to affordable and quality transportation options than higher-income communities and white people—and so less mobility and access to opportunities as a result. U.S.-based research on disparities in mobility and access largely focuses on transportation mode, job access, and residential location of households within metropolitan regions—specifically, the *spatial isolation* of and so diminished opportunities for low-income people of color confined to central cities who disproportionately do not have access to an automobile.³

But as people of color, particularly low-income people of color, increasingly locate in suburbs—have these transportation disparities held, changed, or worsened? A distinguishing

² In transportation planning, mobility and access are related but distinct concepts. Transportation planning scholars largely agree that mobility is "the ability to move between different activity sites" and access is "the ease of reaching potential destinations" (Giuliano and Hanson 2017:4). The fields of mobilities (Urry 2007) and mobility justice (Sheller 2018; The Untokening Collective 2017) push scholars to expand this narrow understanding of mobility—a project to which this dissertation contributes.

³ See Blumenberg's chapter "Social Equity and Urban Transportation" (2017) in *The Geography of Urban Transportation* for an overview of this body of work—as well as the literature review chapter of this dissertation (Chapter 2).

feature of suburbs—and one that is particularly relevant to transportation planning—is their dispersed urban form, which places origins and destinations farther apart from each other than they are in cities. Such dispersion further diminishes *spatial* access to opportunities and amenities, particularly for those who lack access to an automobile. Cities’ higher levels of density are also more conducive to diverse transportation infrastructures and services, such as transit and other alternatives to the private automobile (Ewing and Cervero 2001). But research shows that even in cities—which have much more public transit, walking, and biking infrastructure than suburbs—a lack of car access hinders people from reaching places, particularly jobs, within reasonable travel times (Blumenberg and Ong 2001; Grengs 2010; Shen 1998, 2001; Taylor and Ong 1995). And if low-income people of color living in transit-rich cities face issues of spatial isolation—as much of the transportation equity research suggests—then this presumably becomes an even bigger problem for those living in dispersed suburbs with much thinner transit safety nets.

Scholars have started to examine income-based transportation disparities in the context of the “suburbanization of poverty.” This body of scholarship shows that while cities still have higher rates of poverty, since 2000, suburbs bypassed cities in terms of both number and pace of growth (Kneebone 2017; Kneebone and Garr 2010); and now, U.S. suburbs house more people living below poverty than do central cities (Parker et al. 2018). And indeed, transportation research shows that low-income people living in suburbs, particularly those who cannot afford a car and so are reliant on other forms of transportation, face barriers to mobility (Allen et al. 2022; Benediktsson 2017; Kramer 2018; Liu and Bardaka 2021; Pan, Deakin, and Shaheen 2023). But—as my literature review in the next chapter shows—scholars have yet to examine racialized disparities in mobility and access in the context of the peripheralization of segregation.

My hypothesis, and my concern, is that the spatial isolation of people of color in increasingly segregated and dispersed suburban landscapes is diminishing their spatial access to resources and opportunities—and that mobility constraints are a contributing factor to racial-suburban isolation. Figure 2 illustrates these hypothesized relationships and outcomes.

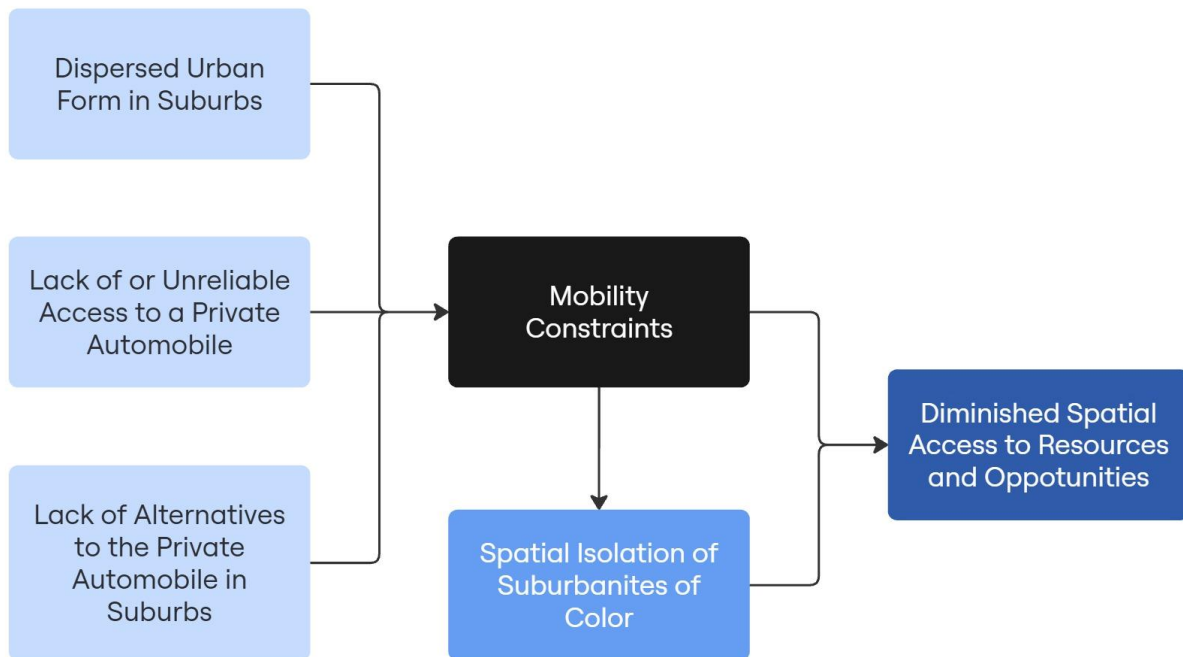


Figure 2 – Schematic Illustrating Hypothesized Relationships and Outcomes

And so, in this dissertation project, I examine the relationship between mobility and racial-spatial isolation in suburbs. Specifically, my research questions are as follows:

- How does mobility affect racial-spatial isolation in suburbs (compared to urban areas)?
- How does the relationship between mobility and racial-spatial isolation operate in suburbs—and how does this relationship shape the mobility experiences and economic outcomes of low-income suburbanites of color?

These questions call for both quantitative and qualitative data and methods to answer them, so in this dissertation project, I used a mixed-methods approach. In my quantitative analysis, I use spatial data for California to examine how mobility varies by race and residential neighborhood type and the degree to which mobility affects (or does not affect) levels of racial-spatial isolation in suburbs—which sets my analysis apart from previous work on this topic. This quantitative analysis allows me to understand the association between mobility and racial-spatial isolation in suburbs, compared to cities, but it does not show causation. The qualitative component of my dissertation—in which I use data from in-depth interviews and cognitive mapping exercises with 30 low-income suburbanites of color in the Inland Empire—unearths the daily mobility experiences of low-income suburbanites of color. Indeed, suburbanites of color who are low income are more likely to lack car access, which I hypothesize plays a significant role in racial-spatial isolation via imposing constraints on mobility (see Figure 2). The qualitative component of my analysis also shows how (i.e., in what ways) such experiences relate to racial isolation in suburbs—and the outcomes of such isolation.

Using a mixed-methods approach to answer this set of questions illuminates both the role of transportation in shaping racialized suburban geographies as well as the ways such racialized geographies (re)produce differentiated levels of mobility. Such research is imperative not only to understand emergent transportation conditions with which planners must contend—indeed, interventions to improve mobility and access are surely quite different in dispersed suburban environments than in dense urban ones—but also to provide an understanding of suburbs as newer, and quite possibly larger, terrains of transportation and racial (in)justice with which social movements are starting to grapple.

Dissertation Roadmap

In the next chapter of this dissertation (Chapter 2), I review relevant empirical research in the areas of: 1) The racial-spatial evolution of U.S. suburbs; 2) Disparities in mobility and access across race and space in the U.S.; and 3) Mobility and access concerns in the context of “the suburbanization of poverty” in the U.S. Throughout, I emphasize Southern California—not only because a significant share amount of research focuses on this region, but also to provide background and context for my analysis. Through my review of the literature, as I mention above, I find that while scholars have started to examine the mobility and access consequences of the “suburbanization of poverty,” scholars have yet to relate mobility and racial-spatial isolation in the context of the peripheralization of segregation in U.S. regions.

In Chapter 3, I detail my mixed-methods approach that allows me to more wholly examine the relationship between mobility and racial-suburban isolation than a quantitative or qualitative method alone could do. I start by explaining my quantitative analysis, which uses both publicly-available and confidential spatial data from the National Household Travel Survey and the American Community Survey to measure my key variables of interest—mobility, racial-spatial isolation, and suburbs—and to produce both descriptive statistics and regression models. I then turn to my qualitative analysis, in which I detail the interview instrument I developed and the thematic analysis I used to make meaning of interview and cognitive mapping data. I also include a detailed description of individual and household characteristics of interviewees. In both my quantitative and qualitative analysis sections, I discuss limitations of each of the approaches.

Following these three opening chapters of my dissertation, the next three chapters present my empirical findings and analysis. In Chapter 4, I present quantitative findings from: 1) Descriptive statistical analyses of variations in car access (my proxy for mobility) by

race/ethnicity and neighborhood type of working-age adults in California; 2) Descriptive statistical analyses of variations in racial-spatial isolation in activity spaces by race/ethnicity and neighborhood type of working-age adults in California; and 3) Inferential statistical analyses (i.e., regression models) predicting the level of racial-spatial isolation in the daily activity spaces of working-age adults in suburbs (versus cities) as a function of car access. In Chapter 5, I present qualitative findings and analysis illustrating the multitude of mobility constraints that face low-income suburbanites of color in Southern California's Inland Empire—including and beyond car access. And in Chapter 6, I continue with my qualitative analysis and findings by examining the ways that mobility constraints facing low-income suburbanites of color shape racial-spatial isolation in suburbs, and the consequences of spatial confinement—specifically regarding spatial access to opportunities, namely employment.

Finally, in Chapter 7, I conclude this dissertation by synthesizing and making meaning of my key findings. I explain the implications of my findings for planning practice, largely focusing on the somewhat controversial yet critical role of the automobile in the lives of low-income people of color in suburbs. As part of the implications of this work, I name the car-versus-environment-related-tensions that emerge from my dissertation research. I then highlight contributions of this work to both research (including methods) and theory. And I end this last chapter with ideas for future research related to mobility justice in suburbs.

Chapter 2: Literature Review and Context

In the U.S., urban planning scholars have long documented disparities in mobility and access along the lines of race and space (e.g., Bullard, Johnson, and Torres 2004; Golub, Marcantonio, and Sanchez 2013; Kain 1968; Taylor and Ong 1995). In general, research shows that people of color have less access to affordable and quality transportation options than white people—and so less mobility and access to opportunities. U.S.-based research on disparities in mobility and access largely focuses on transportation mode, job access, and residential location of households within metropolitan regions—specifically, the spatial isolation of and so diminished opportunities for people of color confined to central cities who do not have access to a car (see reviews in Barajas 2021; Blumenberg 2017). While much research has studied these relationships along the traditional city-suburb divide, far less has examined the relationships among mobility, access, and racial isolation in today’s suburbs. Some scholars have started to examine transportation disparities in the context of the “suburbanization of poverty,” largely finding that low-income suburbanites often struggle to find alternative modes to the automobile, which can impede both their mobility and access to destinations within suburbs, between suburbs, and between suburbs and cities. But almost all of this (relatively small) body of research does not consider race or the racial dimensions of low-income travel.

In this chapter, I review relevant literature to inform and justify my examination of the relationship between mobility and racial-spatial isolation in increasingly segregated and dispersed suburbs. I start with both empirical research and conceptual frameworks exploring the racial-spatial evolution of suburbs, which help explain the inter-connected processes of racial containment and racial exclusion in today’s suburbs. In this section, I emphasize Southern California—not only because a disproportionate share of the literature focuses on this region, but

also to provide background and context for my qualitative analysis, as I recruited interviewees from Southern California’s largely suburban Inland Empire. I then turn to research on disparities in mobility and access across race and space, which, in the field of urban planning, has largely centered around the “spatial mismatch” versus “modal mismatch” debate. I close with a review of the aforementioned growing body of research on transportation disparities in the context of the “suburbanization of poverty.” This final body of work focuses on transportation disparities in the context of poor people moving from cities to suburbs, but largely neglects putting transportation disparities in relation to the increasing racial segregation—within and between suburbs—that accompanies such movement.

The Racial-Spatial Evolution of Suburbs

Since mass suburbanization commenced at the turn of the last century and accelerated substantially following the end of WWII in the mid-20th century (Jackson 1985), U.S. suburbs have continued to grow. Today, nearly two-thirds of those living in U.S. metropolitan regions live in suburbs. In recent decades, such suburban growth has been fueled by people of color, low-income populations, and immigrants (Farrell 2016; Frey 2011, 2022; Howell and Timberlake 2013; Kneebone 2017; Kneebone and Garr 2010; Lichter et al. 2023; Nicolaides 2024; Parker et al. 2018; Schafran and Wegmann 2012; Schouten 2021; Suro, Wilson, and Singer 2011). In addition to traditional draws of suburban living—such as more living space, employment opportunities, “better schools,” and “less crime”—a dominant explanation of the move of low-income people and people of color to suburbs is that they often offer more affordable housing than cities, particularly in terms of homeownership opportunities. Research

shows this to be largely true for Black and Latino households (Covington 2015; Howell and Timberlake 2013; Pan et al. 2023; Pfeiffer 2012, 2013; Schafran and Wegmann 2012).

But as U.S. suburbs have experienced increased racial and economic diversity, they also have experienced increased segregation (Covington 2015; De Lara 2018; Denton and Gibbons 2013; Farrell 2016; Lichter et al. 2010, 2015, 2023; powell and Reece 2013; Schafran 2018; Schafran and Wegmann 2012). Research has suggested that racial residential segregation—specifically Black-white segregation—has declined in large U.S. metros (Logan and Stults 2011; Rugh and Massey 2014). Lichter et al. (2015) argue, however, that such studies have focused on racial segregation *within* places rather than *between* places that comprise metropolitan regions. Using the Theil index (a measure of inequality), Lichter et al. (2015) separately examine changes in within-place and between-place segregation between 1990 and 2010 in 222 U.S. metropolitan regions. They find that while within-place (or within-neighborhood) racial segregation decreased, *between*-place racial segregation—including in suburbs—increased. Over the next decade, 2010-2020, Lichter et al. (2023) find that Black-white segregation in suburbs decreased (albeit only slightly), but Black-white *exposure* in suburbs also decreased. This means that Black suburbanites became less likely to have white neighbors during this period of time. Moreover, since 1990, Hispanic and Asian suburbanites’ exposure to whites also decreased—particularly in older, inner-ring suburbs (Lichter et al. 2023).

These findings imply that as people of color have moved to suburbs, they moved to those areas where the white population is declining (Lichter et al. 2023). Using data from the 1989 to 2009 Panel Study of Income Dynamics to examine white residential mobility within and between suburbs, Parisi et al. (2019) conclude that “minority suburbanization has been countered demographically by white population shifts between suburban places, to outlying exurban areas,

and back to the city.” Specifically, not only do white suburbanites live next to other white suburbanites, as opposed to suburbanites of color, but white suburbanites are more likely to move out of racially-diverse suburbs rather than predominantly white suburbs. And when they do move, they tend to locate in predominantly white places with mostly white neighbors; in particular, they actively avoid suburban places where Black residents predominate (Parisi et al. 2019). This is how U.S. suburbs are both diversifying and segregating.

Suburbs as Landscapes of Racial Exclusion

Today’s diverse yet segregated suburban landscapes are in stark contrast to suburbs of the early- and mid-20th century, which largely operated as monolithic spaces of racial exclusion associated with “white flight.” Scholars argue that, during this period, suburbanization involved an outward exodus of white households from the urban core leading to intensified levels of racial residential segregation and uneven distribution of resources between “chocolate cities and vanilla suburbs”⁴ (Avila 2004; Jackson 1985; Lipsitz 1995, 2018; Pulido 2000; Self 2003).

As Jackson (1985) explains, coming out of the Great Depression and as part of the New Deal, President Franklin D. Roosevelt established the Home Owners Loan Corporation (HOLC) in 1933 to both protect homeowners from foreclosure and encourage new home buying. In addition to re-financing mortgages, the HOLC established the appraisal method now infamously known as redlining, which used socioeconomic characteristics of neighborhoods—namely race—rather than structural characteristics of the housing stock to appraise home values and so loan risks and feasibility. Established one year later in 1934, the Federal Housing Administration

⁴ This quote, in particular, is from Eric Avila’s book *Popular Culture in the Age of White Flight: Fear and Fantasy in Suburban Los Angeles* (2004).

(FHA) used the HOLC maps to decide whether or not to insure mortgages, leading to the grave disinvestment in urban areas, where people of color disproportionately lived, and the skyrocketing investment in suburban areas, to which white households flocked. Further, the FHA insured long-term home loans from private lenders, allowing for minimal down payments. As a result, home buying—predominantly that of cheap, detached, single-family structures in the suburbs—became more affordable than renting.

Moreover, and perhaps more importantly, FHA officials feared that suburbs would lose their values, or their “stability” (1985:208), with the in-migration of African Americans. In actual FHA underwriting manuals of the 1930s and 40s, the agency recommended that deeds for suburban homes include (racially) restrictive housing covenants, solidifying the exclusion of people of color from the suburbs—and so their containment in inner cities starved for resources (Jackson 1985). Lipsitz describes “the racial discrimination codified by the policies of the FHA” as having “the most damaging long-term effects” of any New Deal program in terms of widening the resource gap between whites and racialized others (1995:372). Moreover, such sanctioned and subsidized suburban development while effectively blocking urban investment allowed for, as Jackson argues, the “social control of ethnic and racial minorities” in cities (1985:191).

Moving into the mid-20th century, following WWII, the practice of private lenders channeling home loans away from inner cities to white home buyers in suburbs only ramped up (Lipsitz 2018; Rothstein 2017). Together with urban renewal and the massive build-out of highways during the 1950s and 60s, these practices destroyed urban neighborhoods and accelerated the funneling of European Americans into the exclusive suburbs with wealth-building opportunities unavailable to communities of color. And while *de jure* segregation ended with the Civil Rights Act of 1964, as housing prices increased, homeownership became that

much more unattainable for people of color—who continued (and continue) to be disproportionately denied for loans—while white homeowners’ equity increased (Lipsitz 2018). Indeed, this is a case in point of what Lipsitz (1995, 2018) conceptualizes as the “possessive investment in whiteness,” or the “organizing principle in social and cultural relations” that ensures the continual bestowing of advantage upon the “imagined community” of (ethnically-diverse, European) whites at the expense of people of color.

While the Fair Housing Act of 1968 rendered racially restrictive housing covenants and redlining illegal, it did little to lessen segregation since, as Massey and Denton (1993) argue, it relies on individual rather than systemic enforcement of fair housing practices. To further keep suburbs white, white communities institutionalized systematic barriers to Black residential mobility, in particular, through discrimination by real estate agents and landlords as well as violence against Black people who moved into white neighborhoods (Massey and Denton 1993). And so, homeownership, particularly in the suburbs, remained a racially-exclusive activity. And along with policy mechanisms like the mortgage interest tax deduction, homeownership directly facilitated an enormous racial-wealth gap that persists today—in which, as of 2019, the typical white household had median net assets of \$188,200, while the typical Black household had median net assets of \$24,100 (Bhutta et al. 2020; Thomas 2021).

Early urban development and homeownership patterns of the Los Angeles region epitomize “chocolate cities and vanilla suburbs” (Avila 2004). Beginning in the 1920s, Pulido (2000) explains, Los Angeles enforced racial residential segregation to confine people of color, primarily African Americans and Latinos, to South and East Los Angeles and, simultaneously, created zoning to confine toxic industrial land uses in the same areas. Nearby, racially-exclusive white working-class suburbs, what became known as the Gateway Cities, cropped up and

supplied labor for the burgeoning factory districts. In this way, people of color living in and adjacent to Los Angeles' industrial zones not only bore the brunt of the associated environmental and health burdens, but were largely excluded from reaping benefits in the form of factory jobs, with some exceptions for Latinos (Pulido 2000).

It was not long, however, before the white working class moved outward to join, or at least live closer to, the region's middle-class and more affluent white communities (Pulido 2000). In addition to the lure of suburbia as a way to escape the perceived problems (and people) of the city, a key driver pulling white workers to the outer suburbs of the Los Angeles region was the defense industry, such as aerospace, which "leapfrogged" to the periphery in search of more space than it could acquire in densely developed urban areas (Pulido 2000:30) and proximity to military bases (De Lara 2018). Suburbanization continued well through the post-war era and "what were once the near suburbs became the inner city" (Pulido 2000:27). As Pastor describes, "Throughout the Gateway Cities, particularly the more tired suburbs closest to the Alameda Corridor, white people left, [B]lack people tip-toed in, and Latinos, including immigrants, moved in *en masse*" (2013:142). Redlining and suburban city incorporation solidified outer suburbs as exclusive white spaces, confining people of color to the inner areas and depriving them of resources, particularly in the form of tax revenue for services. To add insult to injury, L.A.'s notorious freeways further facilitated white flight while violently severing and polluting the already burdened neighborhoods of color (Avila 2004; Pulido 2000). Building on the work of Lipsitz (1995), Pulido explains that such urban, and suburban, development was dictated by

white privilege—which she later amended to be white supremacy⁵—toward benefitting white people at the expense of people of color.

Suburbs as Landscapes of Racial Exclusion and Racial Containment

Even with the significant increase of people of color living in suburbs, in the U.S., overall, suburbs remain majority white, while cities are a majority people of color (Denton and Gibbons 2013; Lichter et al. 2015; Parker et al. 2018). However, in California, particularly Southern California, it is a different picture. As Carpio explains, the “new” trend of people of color (and immigrants) moving to the suburbs by which analysts are so struck at the national level is “an old story here” (2019:9). Southern California (defined as Los Angeles, Orange, Riverside, and San Bernardino Counties) experienced shifts in racial composition starting before the 1980s, accelerating in the 1990s, and stabilizing in the 2000s. Today, the Southern California region—which is home to over 17.6 million people—is nearly 47 percent Latino (up from 24 percent in 1980), 28 percent white (down from 60 percent in 1980), 14 percent Asian American and Pacific Islander (up from 5 percent in 1980), and 6 percent Black (down from 9 percent in 1980).⁶

⁵ In a 2015 auto-critique of her 2000 article, Pulido asserts that white supremacy is more aggressive form of racism than white privilege, which can further our understanding of urban (and suburban) development. She argues that because white privilege allows those who benefit from racialized spatial arrangements to remain unaware, it takes the onus off white actors to address such inequalities, or more precisely, the exploitation and sacrifice from which they benefit. White supremacy, on the other hand, is “predicated on the belief that whites are entitled to more, which, in turn, is predicated on the belief that they are more deserving, or ‘better’ than other groups” (2015:812). And so, it forces us to ask questions about *who* is facilitating spatial developments that benefit whites at the expense of people of color.

⁶ These numbers are based on my analysis of 2023 American Community Survey 5-year estimates (Social Explorer, Inc. 2025) and Manuel Pastor’s analysis of 1980-2010 Decennial Census data (2013).

But Pastor (2013) finds that the region's most significant demographic changes happened in the largely suburban Inland Empire (Riverside and San Bernardino Counties) with whites going from three quarters of the population in 1980 to one third in 2010 and Latinos from one fifth to nearly half (2013). Indeed, during this 30-year period, 1.7 million Latinxs moved to the Inland Empire (De Lara 2018:147). Yet, research shows that the Inland Empire's multi-racial composition did not, and has not, translated into integration in the suburbs (Carpio 2019; De Lara 2018; Tilton et al. 2025). How did we get here?

After defense-related manufacturing migrated from Los Angeles to the outer suburbs, including the Inland Empire, both industrial and residential development took off (Carpio 2019; De Lara 2018; Pulido 2000). Consequently, the region experienced a population and an economic boom. While job and housing opportunities drew mostly whites, people of color also contributed to regional growth during this time (Carpio 2019; De Lara 2018). Carpio (2019) explains how these seemingly anomalous multiracial suburbs came to be: Black families, mostly migrating from South Central Los Angeles, were drawn to the Inland Empire, particularly Pomona, by the promise of more space and home buying opportunities created by some large-scaled residential developers who were uniquely committed to fair housing. Carpio (2019) reports that many of the Inland Empire's new Black residents kept their jobs, particularly well-paying and stable government jobs, in Los Angeles, and so commuted 50 miles or more daily.

But it was different for Latinas/os, many of whom watched the suburbs grow up around them. Specifically, developers transformed agricultural land to large-scale residential developments, ultimately leading to the "mass destruction" of the citrus industry and rural communities, called *colonias*, that housed its predominantly Latina/o workers (Carpio 2019). This was not unique to the Inland Empire: In the San Jose region of Northern California,

developers enacted similar mechanisms of erasure of the Mexican-American community of Alviso (Cavin 2013). What was unique to the Inland Empire, as Carpio (2019) uncovers, were the region's "racial brokers," or realtors of color who fought their way into the real estate industry. These racial brokers were key to helping Latinas/os become suburban homeowners, many of whom were children of citrus workers from the *colonias* as well as other Latinas/os families who had been earlier barred from buying homes in the area due to racially restrictive housing covenants in earlier times. Racial brokers, to certain extent, also helped African Americans and a smaller number of immigrants moving directly from Central America.

But as more and more Black and Latina/o households moved in, white suburbanites essentially replicated practices that led to the city-suburb divide to establish a suburb-suburb divide. Such practices included racial real estate steering and discriminatory banking to carve out exclusive residential, commercial, and educational spaces in the eastern parts of the Inland Empire, leading to a process of "suburban ghettoization" in Black and Latina/o areas in the western parts of the region (Carpio 2019). As whites moved eastward, they took their tax bases with them, facilitating economic decline in the region's western areas—not dissimilar to practices in American cities during this time. As Carpio (2019:208) concludes: "The very same benefits that white residents had earlier enjoyed upon moving to suburbia—unrestricted access to neighborhoods, well-resourced schools, and a rich commercial area—were swiftly undermined as African Americans and Latinas/os occupied suburbs in greater numbers." National-level research shows similar trends in other U.S. metros, with people of color increasingly residing in inner-ring suburbs, and, consequently, whites moving even farther from the inner city to the suburban fringes (Hall and Lee 2010).

Nonetheless, the 1980s brought an “inland shift” that was “decidedly different” from prior ones: with more growth in Latinx, Black, Asian, and immigrant populations came a *decrease* in the white population (De Lara 2018:115). During this period, like many places throughout the U.S., deindustrialization led to decline, as the Inland Empire’s economy became heavily reliant on industrial manufacturing sectors. In its place came the logistics economy centered on commodity imports—an industry that still dominates, shaping the region’s labor market (Barnard et al. 2025) and racial-spatial arrangements (De Lara 2018). Driven by proximity to the ports of Los Angeles and Long Beach, the Inland Empire’s logistics industry is a sector highly dependent on low-wage, mostly Latinx labor for warehousing and distributing goods to the rest of the country (Barnard et al. 2025; De Lara 2018). Similar to racial-spatial arrangements in Los Angeles (Pulido 2000), much of the Inland Empire’s Latinx and immigrant logistics workers are confined to neighborhoods near the toxic infrastructure associated with logistics, such as massive warehouses, freeways, and railroads—and so they once again bear the environmental and health brunt of industrial activity (De Lara 2018). De Lara concludes that “new modes of global capitalist production and distribution” (2018:2) have combined with demographic change to create a segregated suburban landscape to resolve the “paradox” of whites needing to “erase racially marked bodies while needing their labor” (2018:14).

And so, while the Inland Empire may have, for a moment, held promise as a multiracial suburb, it quickly transformed into a landscape of segregated suburban spaces centered on racial exclusion (to maintain white space) and racial containment (toward “suburban ghettoization”) (Carpio 2019; De Lara 2018).

In more recent years, the Inland Empire has become one of the nation’s most popular entry points for Latinx immigrants (De Lara 2018; Johnson, Reed, and Hayes 2008). Research

shows that not only are immigrants moving from cities to suburbs, but immigrants are increasingly moving directly to suburbs from their home countries (Singer 2004; Singer, Hardwick, and Brettell 2008; Walker 2018). In the Inland Empire, in response, perpetrators of anti-Black and anti-Brown racism have expanded their purview to include palpable anti-immigrant sentiments. Such racism is spatialized through white residents who continue to carve out exclusive white space via gated communities on the outskirts. And indeed, scholars studying what Schafran calls “the peripheralization of segregation” (2018) in other parts of California have found that contemporary forms of segregation within suburbs happen through racial steering and predatory lending (Schafran and Wegmann 2012) as well as NIMBYism⁷ in higher-income suburbs (Covington 2015), including discrimination against housing voucher holders (Covington et al. 2011; Kirkpatrick and Gallagher 2013). Moreover, Schafran and Wegmann (2012) find that the exurban areas in the San Francisco Bay Area to which people of color, and particularly Black people, moved between 1970 and 2009 lost value both absolutely as well as relative to the urban / inner suburban core. And when the foreclosure crisis hit, the Bay Area’s “resegregation” became apparent as suburbs of color like Antioch experienced far higher foreclosure rates and loss of value relative to other suburbs as well as the region overall.

Outside of the housing market, the state systematically unleashes militaristic forces on Latinx communities—whether it be through ICE raids in warehouses or police checkpoints in Latinx neighborhoods (Carpio 2019; De Lara 2018). Moreover, in places like Redlands, in the eastern Inland Empire, where the shrinking white and disproportionately senior population does not “see” themselves reflected in the expanding Latinx youth population, officials are

⁷ NIMBY stands for “Not in my backyard,” a colloquialism to describe when residents resist or fight some sort of change in their residential neighborhoods.

systematically cutting funding for parks and schools, rendering them among the worst in the state (De Lara 2018:152). Finally, the Inland Empire has undertaken a massive expansion of California's prison industrial complex, disproportionately caging Black and Brown men (Carpio 2019). It is hard to think of a more literal form of racial containment than spatial arrangements of the carceral state. This largely state-led violence makes evident that while the most recent demographic shift has been "decidedly different" in that the Inland Empire became majority people of color, it was not that different in that its white interests continue to find ways to contain racialized others—in economically-distressed neighborhoods, in exploitative warehouses, in inadequate schools, in traffic checkpoints, in prisons (Carpio 2019; De Lara 2018).

Disparities in Mobility and Access Across Race and Space

Because my project examines transportation disparities in the context of the growth of people of color and of racial segregation in suburbs, in this section, I review empirical research exploring such disparities across race and space, focusing particularly in U.S. metropolitan regions.

In 1968, Kain argued that racial segregation in the housing market—which I describe above in my overview of white flight—had shaped the distribution of Black employment by reducing job opportunities for Black workers who were stuck in the city as jobs moved to the suburbs. Since his initial publication (Kain 1968) positing what has now become known as the spatial mismatch hypothesis, many others have shown that distance from jobs helps explain poor employment outcomes for African Americans (e.g., Ihlanfeldt and Sjoquist 1989; Raphael 1998; Stoll 2006). Over time, scholars have expanded the spatial mismatch hypothesis to other

marginalized groups. For example, Stoll (1998) found that job decentralization negatively affects employment rates among both Black *and* Latino male youth in the United States. Looking at Los Angeles, Ong and Blumenberg (1998) found that welfare recipients with greater access to local, low-wage jobs have a higher likelihood of finding local employment—and those who must commute farther have diminished earnings. Overall, however, spatial mismatch studies have tended to be premised on the outdated city-suburb dichotomy as well as neglected issues of mobility and access *within* suburbs.

Scholars have challenged the spatial mismatch hypothesis. One such group argues that racial differences in travel mode, more so than spatial location, explain poor employment outcomes among Black and other marginalized communities. What has become known as the *modal* mismatch body of research points to the disadvantage of not having car access, being reliant on relatively slow and limited public transit, and so being hindered from reaching opportunities (i.e., jobs) in a reasonable travel time. Taylor and Ong (1995) found that in the 1970s and 1980s, contrary the spatial mismatch hypothesis, average commute times and distances for workers of color in U.S. metros stabilized or declined. Among those whose commutes increased, this trend was explained by slower travel speeds as compared to whites, not farther distances. Taylor and Ong (1995) showed that slower commute times were attributable to a greater reliance on public transit, which averaged 75 percent longer than driving alone; this was particularly true for Black workers, who were three times as likely as white workers to commute on transit. More recent research shows that while Black car ownership has increased over time, Black households still have the lowest rates of car ownership among racial/ethnic groups—and so still disproportionately use transit and have longer travel times (bunten et al. 2024; Klein and Smart 2017).

Also weighing in on the modal mismatch argument, Shen (1998, 2001) found that compared to those living farther out, low-wage and less-educated inner-city job seekers live closer to job opportunities—which, in spite of decades of employment decentralization, are still disproportionately concentrated in cities. However, such job seekers still have relatively low job access because a comparatively large portion do not own a car. Grengs (2010) found similar results regarding African American job access in Detroit. Likewise, Ong and Blumenberg (1998) found that in the neighborhood of Pico Union located near downtown Los Angeles, the number of low-wage jobs that were accessible in a 30-minute transit trip was 77 percent lower than that by car; in Watts, south of and farther away from downtown, it was 97 percent lower. And in another study focusing on Los Angeles, Blumenberg and Ong (2001) found that while many welfare participants live in job-rich neighborhoods in which they can reach jobs by car or transit, for those living in job-poor neighborhoods, a reliance on transit significantly reduces their job access. And more recently, Covington (2018) confirmed that Black-white gaps in car access are associated with Black-white gaps in unemployment across U.S. metropolitan regions. In short, the modal mismatch literature argues that racial and income discrepancies in employment rates can be explained more by uneven access to a car than by being disproportionately farther from employment opportunities.

A particularly important note, in light of the focus of this study, is that modal mismatch research does not negate the effects of racial residential segregation. Rather, it elevates the importance of car access as a key component of mobility in accessing opportunities, namely jobs (Blumenberg and Pierce 2014). Increasing car ownership among workers of color is associated with reduced racial disparities in employment rates (Gautier and Zenou 2010; Raphael and Stoll 2001). Moreover, both cross-sectional (Gurley and Bruce 2005; Lucas and Nicholson 2003;

Raphael and Rice 2002) and longitudinal research (Smart and Klein 2015, 2020) shows that car access is not only associated with higher employment rates, but higher earnings as well. And of course, the job access benefits of car access are related to the transportation benefits of car access, which include the ability travel farther, quicker—compared modes like walking and transit—and with more flexibility in terms of where and when one travels (Blumenberg 2004; Rosenbloom 1992; Roy, Tubbs, and Burton 2004).

But the costs associated with purchasing, operating, and maintaining a car are high and volatile, posing financial difficulty for some low-income households (Brown 2017; King, Smart, and Manville 2019; Klein and Smart 2017). Some households feel “forced” into car ownership because they live in places where they would otherwise not be able to access opportunities, which comes at a high price (Curl, Clark, and Kearns 2018). But it also makes sense that low-income people are far more likely to use alternatives to the automobile, namely the bus, than higher-income people (Taylor and Morris 2015). And as income and race are highly correlated, racialized disparities in car access persist: In the U.S. while only six percent of white households lack car access, for households headed by people of color, this number jumps to 13 percent—and, further, 17 percent among Black households (PolicyLink and USC Equity Research Institute 2024).

Glaeser, Kahn, and Rappaport (2008) go as far as to claim that the concentration of public transit in city centers is a key reason why poor people disproportionately live there. Yet, as mentioned above, research shows that those low-income riders who rely on transit, which has limited availability and quality, have the lowest levels of mobility (Giuliano 2005) and so have lower access to opportunities than travelers with access to automobiles. Some scholars assert that, despite its comparative disadvantage to driving, public transit can overcome spatial barriers

and connect low-income people and people of color to jobs. In Portland and Atlanta, two places with relatively good public transit systems, Sanchez finds a correlation (but not a causal relationship) between transit access and labor force participation among non-white workers. In Los Angeles, San Francisco, and Boston, Kawabata (2003) finds that transit-based job accessibility increases the probability that workers without cars will be employed. And in Los Angeles County, Ong and Houston (2002) find that the level of transit service near a single, carless woman's home correlates with employment, yet only moderately. On the other hand, Sanchez, Shen, and Peng (2004) find that in six U.S. metros, access to fixed-route transit *and* employment concentrations are not correlated with positive employment outcomes for low-income people. As Smart and Klein find in a more recent study (2020), only those living in places with “truly excellent” (i.e., high frequency and reliable) transit service fare the same as those with cars in terms of both employment and earnings outcomes. However, only 5 percent of all families and 8 percent of low-income families in the U.S. live in such places (Smart and Klein 2020).

Recent qualitative research in transportation planning has enhanced our understanding of conditions facing those dependent on transit. For example, Coren, Lowe, and Barajas (2022) held focus groups with carless Black job seekers in Chicago to uncover “lived—rather than solely modeled—job accessibility,” and found the following: transit schedules and routes do not align with work hours and locations; employers discriminate against those without cars; those who depend on transit must buffer their travel times due to the unreliability of transit; and that many participants have foregone opportunities due to lack of car access. In another qualitative study, Lowe and Mosby (2016) find that travel time models generally underestimate the health and well-being associated with low-income travel patterns, such as uncertainty about the reliability of

transit on a given day and the strained social relations associated with unpredictable ride giving. And in their qualitative study of how low-income households manage their transportation costs, Blumenberg and Agrawal (2014) find that even though many people live in transit-rich neighborhoods, because of the aforementioned advantages of cars and challenges with transit, many of them figure out ways to secure auto access, often at great cost and sacrifice.

Mobility and Access Concerns Amidst the “Suburbanization of Poverty”

In light of the changing demographics of suburbs, research on socio-spatial disparities in mobility and access has certainly evolved beyond the now outdated city-suburb dichotomy. Such research has been almost solely in the context of what many scholars call “the suburbanization of poverty,” rather than in the context of the growth of suburbanites of color and the “peripheralization of segregation.”

The suburbanization of poverty literature points to the fact that, between 2000 and 2008, suburbs in the largest U.S. metropolitan regions experienced the fastest growth in low-income populations than cities and smaller metros. Specifically, during this time period, the suburban poor population increased by 25 percent, which was five times the growth of urban poor. In terms of numbers, this means that more than 2.5 million low-income people emerged in suburbs, making up nearly half of the total increase in the U.S. poor population during this time (Kneebone and Garr 2010). So while cities still have higher rates of poverty, after 2000, suburbs bypassed cities in terms of both number and pace of growth (Kneebone 2017; Kneebone and Garr 2010). Indeed, U.S. suburbs now house more people living below poverty than do our central cities (Parker et al. 2018).

In the context of the suburbanization of poverty, transportation equity scholars have grown concerned that low-income people will have less mobility and access to destinations/opportunities than they did in more central, urban environments. One of the reasons is that suburbs' low-density and dispersed built environments are less conducive to travel by modes other than the automobile (e.g., transit, walking, biking), as such modes work best (i.e., deliver people to their desired destinations in a reasonable amount of time) in dense environments where origins and destinations are closer together (Guerra and Cervero 2011; Smart and Klein 2020). This means, as Allen and Farber (2021) argue, that the suburbanization of poverty will exacerbate the transportation disadvantage that low-income people already face. Research shows that the more affordable suburbs are for the most part poorly served by transit, which limits the accessibility and mobility of those living in households without a vehicle (Kramer 2018; Pan et al. 2023).

A study in the Research Triangle Region of North Carolina finds that while suburban bus access has increased over time, low-income inner-suburban residents still have less than half of the level of access to transit as those living in city centers—and low-income outer suburban residents have only one-tenth the bus access (Liu and Bardaka 2021). In addition to insufficient spatial coverage, suburban transit tends to have long headways, particularly during off-peak periods when lower-income workers are more likely to commute to work (Pan et al. 2023). In one of the few studies examining racial disparities in transportation in suburban contexts, Woldeamanuel and Covington (2014) find that, in Los Angeles' largely suburban San Fernando Valley, areas with higher proportions people of color are correlated with less transit capacity, lower frequency, and less service coverage than those with lower proportions people of color. Finally, in terms of active transportation—particularly, walking—Benediktsson (2017) finds that

high suburban poverty rates coincide with high levels of suburban sprawl, which leads to high pedestrian risk. This is what Benediktsson terms a “material mismatch” between the autocentric built environment of the suburbs and the transportation needs of suburbs’ growing poor populations.

And so, as Pan et al. (2023) find, car access for low- to moderate-income households in suburbs is necessary. However, aligning with previous research (Klein and Smart 2017), Pan et al. (2023) find that maintenance issues with used cars or an inability to make car payments often leads to a loss of car access among low- to moderate-income suburbanites. In these situations, households rely on either social networks or public transit to get around, but in some cases, forgo trips altogether. As Kramer (2018) writes, for those who cannot afford a car in the suburbs, “an auto-dependent urban form imposes a barrier” (2018:3).

Research in this area has also focused on implications for the commute (i.e., the journey to and from work). Here, it is critical to note that jobs, along with people, have also decentralized in recent decades (Raphael and Stoll 2010). However, because U.S. regions have become more spread out over time (Blumenberg and King 2021)—meaning that jobs and housing are just generally farther away from each other than they used to be—job accessibility among both urban and suburban residents has fallen (Kneebone and Holmes 2015). Specifically, Hu (2015) tests the spatial mismatch hypothesis in the context of the suburbanization of the poor, and finds that because jobs concentrate in the inner city, poor inner-city job seekers have greater job accessibility than their suburban counterparts. However, increased suburbanization of both people and jobs has reduced the employment-related spatial advantage of living in central cities.

And so, in terms of the journey to work, Allen and Farber (2021) find that Toronto’s suburbs have experienced decreased socioeconomic status in conjunction with increased

commute times compared to urban neighborhoods. Additionally, Blumenberg and King (2019) find that commute distances of all U.S. workers increased over time. But moreover, they find a positive relationship between living in a low-density neighborhood and commute distance, a relationship that appears strongest for low-income workers. Blumenberg and Wander (2023) argue that these dynamics are particularly acute in higher-cost coastal regions like Los Angeles and Orange Counties. Specifically, we find that a worse “fit” between affordable housing and low-wage jobs is associated with longer commute distances for low-wage workers who live in more suburban areas far from dense urban job centers.

Clearly, there is growing scholarly interest in the implications of changing suburbs on disparities in mobility and access. This work, however, has been almost entirely in the context of the suburbanization of poverty rather than the growth of suburban residents of color and the consequent peripheralization of segregation. Unsurprisingly, these trends are related: Recent research shows that the increase in suburban poverty rates is attributable to both the increase in poverty among residents *and* population growth of people of color (Terbeck 2023). Nonetheless, transportation scholars looking at changing suburbs have focused on income-related spatial inequality, rather than racial-spatial inequality. Moreover, almost all the work in this area of research has involved quantitative data and analysis, very little of which has been paired with qualitative data and analysis (with the clear exception of Pan et al. 2023).

Because scholars have yet to adequately relate mobility (and so access) and racial isolation in segregated suburbs, this is what my project seeks to do. Unpacking this relationship is critical to understanding how such dynamics affect economic and social outcomes for low-income suburbanites of color. Further, my mixed-methods approach allows me to add insights that previous (quantitative-only) studies may have missed.

Chapter 3: Data and Methodology

In this chapter, I detail the methodology and data I used to answer different dimensions of my guiding research question: What is the relationship between mobility and racial-spatial isolation in suburbs? To understand how mobility varies by race and residential neighborhood type and the degree to which mobility affects (or does not affect) levels of racial-spatial isolation in suburbs, I conducted both quantitative and qualitative analyses. For the quantitative analysis, I used publicly-available and confidential spatial data for California to produce descriptive statistics and regression analyses. While this quantitative analysis allows me to understand the association (or lack thereof) between mobility and racial-spatial isolation in suburbs, it does not show causation. To understand how (i.e., in what ways) mobility affects racial-spatial isolation in suburbs (or not), I also conducted a qualitative analysis. A key part of this latter analysis is understanding how low-income suburbanites of color experience mobility/immobility on a daily basis—and if/how such experiences affect spatial access to opportunities, such as employment. For this analysis, I collected data from interviews and cognitive mapping exercises with 30 low-income people of color living in Southern California suburbs, specifically in the Inland Empire.

I start with the quantitative data and methodology: After describing the secondary data sources I use, I explain how I define and measure my key variables of interest—mobility and racial-spatial isolation—as well as how I define a suburb compared to an urban area (as this is a key point of comparison in this study). I then define my sample and detail the regression models. The second half of this chapter then explains my qualitative data and methodology. I start this section by describing the development of my interview instrument and cognitive mapping exercise and my use of thematic analysis to make meaning of the qualitative data. I then explain how I recruited my interviewees and provide an overview of interviewee characteristics.

Quantitative Analysis

To understand how mobility/immobility varies by race and residential neighborhood type, and if mobility affects racial-spatial isolation in suburbs (versus cities), I conducted a quantitative analysis drawing on data from the 2017 National Household Travel Survey (NHTS) California Add-on and the 2019 5-year American Community Survey (ACS).

Data Sources

Administered by the U.S. Federal Highway Administration, the NHTS is a daily travel inventory, which, for this study, provides the following: 1) trip-level data, like travel distance and mode; 2) person-level data on individual characteristics, like race/ethnicity; and 3) household-level data on household characteristics, like annual household income and car access. The California “add-on” is an additional or over-sample of individuals and households in California that the California Department of Transportation commissioned in order to be able to do California-specific analyses. Along with additional observations, the California add-on contains confidential spatial data—specifically, the latitudes and longitudes of each trip’s origin and destination. These confidential data are housed at the National Renewable Energy Laboratory’s Transportation Secure Data Center (to which I applied and gained access). I use the person-level NHTS file as the foundation to which I add other data to assemble the dataset that I use to produce descriptive statistics and regression models. While there is a more recent 2022 NHTS, unfortunately, Caltrans opted out of purchasing an “add on” for California for the 2022 release. This means there are no spatial data for California in the 2022 NHTS. Because I need spatial data to conduct my analysis—as I explain below—I have to use the 2017 NHTS data.

Administered by the U.S. Census Bureau, the 5-year ACS provides (most relevant for this study) neighborhood-level demographic data like percent of specific racial/ethnic groups that reside in specific geographies and the percent of people living in poverty. The 5-year ACS is labeled as such because it contains population estimates based on data collected over a five-year period. This larger sample size—compared to a 1-year survey, for instance—allows for more reliable estimates in smaller geographic areas. For this analysis, I used the 2019 5-year ACS data, rather than the more recent 2022 or 2023 5-year estimates, to temporally align the place-based demographic data with the 2017 NHTS data (as 2017 is midpoint in the 2019 5-year ACS estimates).

Defining and Measuring Variables of Interest

Mobility

Mobility—or, as urban planners typically understand it, "the ability to move between different activity sites" (Giuliano and Hanson 2017:4)—is the key independent variable of interest in this analysis. As much of the aforementioned research shows, automobiles significantly increase an individual's mobility and so increase their spatial access to opportunities (Blumenberg and Manville 2004; Blumenberg and Pierce 2014; Ong and Miller 2005; Taylor and Ong 1995). And, as I have so far argued, if a lack of car access poses problems for low-income people of color living in dense, transit-rich cities—as the modal mismatch literature suggests—this presumably becomes an even bigger problem for those living in dispersed, autocentric suburbs. But it is also important to note that car access is not simply about whether or not one owns a car. Of course, living in a zero-car household severely limits mobility. But for people living in households with more adults than cars—what we call car-deficit

households—they are often forced to share the car with someone else in the household, and so likely do not have access to it whenever they need it (Blumenberg 2017), which also hinders mobility.

Therefore, using person- and household-level data from the NHTS, in both my descriptive statistics and my regression models, I examine three categories of access to an automobile, my proxy for mobility: 1) living in a zero-car household; 2) living in a car-deficit household (i.e., ratio of adults to cars is less than one); and 3) living in a fully-equipped household (i.e., ratio of adults to cars is greater than or equal to one).

Racial-Spatial Isolation

Defining and operationalizing racial-spatial isolation—the dependent variable in this analysis—is complex. In essence, racial-spatial isolation occurs when individuals generally do not encounter racial groups other than their own as they move through space.⁸ But, first, what *is* the appropriate spatial unit of analysis for examining individuals' level of racial-spatial isolation, in suburbs or otherwise?

Among scholars, particularly transportation geographers and spatial sociologists, there is increasing skepticism about conducting spatial assessments of individual's opportunities and outcomes based solely on where they reside. Indeed, those over the age of 14 in the U.S. spend an average of nearly five hours per day at out-of-home activities (including travel)—even though this is the significant decline (from 7 hours per day) since the COVID-19 pandemic (Morris,

⁸ I built this definition off the work of Jones and Pebley (2014), in which they also examine level of isolation that individuals experience in activity spaces, specifically in Los Angeles.

Speroni, and Taylor 2023, 2025). Nonetheless, while residential location is of course relevant, as much of the literature shows, more scholars (Athey et al. 2021; Cagney et al. 2020; Kwan 2012) are calling on researchers to examine broader spatial contexts of where people spend their time when assessing how area-based attributes affect individual outcomes, including racial segregation.

Moreover, in Schafran's analysis of "resegregation" in Northern California, he argues that while working-class people and people of color move across the far reaches of regions for residential and/or employment opportunities, they only have access to certain areas, as racial exclusion in parts of suburbia persists. Further, because working-class people and people of color maintain social and economic connections across space, Schafran implies that today's segregation includes separate spheres of circulation that crisscross neighborhoods and regions rather than being singularly defined by the urban-suburban residential divide. (It is important to note that Schafran (2018:24) insists that the newer form of "mobile" segregation does not replace the older "ghettoized" form, but rather, as dialectic forms of "spatial separation," they "operate together.") This is further justification that using only residential location is not enough to understand the extent to which people of color experience racial isolation in the suburban context.

Following the lead of Jones and Pebley (2014), I examine racial-spatial isolation within individuals' *activity spaces*—which encompass all locations (e.g., home, work, school) that an individual visits as part of their daily activities and travel (Kwan 2012)—rather than just their residential locations. In their comparison of residential neighborhoods and activity spaces in Los Angeles County, Jones and Pebley (2014) find that activity spaces are more heterogeneous than residential neighborhoods. Yet the characteristics of both closely align with individual

characteristics, suggesting that most people experience segregation across the multiple spaces they traverse in their daily lives, not just in their residential neighborhoods. Also examining racial isolation in terms of activity spaces, Wang et al. (2018) analyze big data (specifically, 650 million geocoded Twitter messages to estimate home locations and travel patterns of nearly 400,000 people across the 50 largest cities in the U.S.). They find that while urban residents across races have similar levels of mobility (in terms of travel distances and number of neighborhoods visited), residents of Black and Hispanic neighborhoods are far less exposed to higher-income people or white people in the neighborhoods they visit—meaning they are relatively isolated even in the neighborhoods they traverse.⁹ Such research suggests that activity spaces, in addition to residential locations, are a critical unit of analysis in examining racial isolation in space.

There are several ways to define an activity space for analytical purposes. For this quantitative analysis, I continue to draw on the work of Jones and Pebley (2014), in which they compare two approaches to defining activity spaces: nodes and polygons. Nodes-based activity spaces are defined as the group of neighborhoods or districts—in this case, Census block groups¹⁰—containing individuals' destinations. For example, in the schematic in Figure 3, this person's home is in Block Group 7, their job is in Block Group 1, and their school is in Block Group 6. Using a nodes-based definition, this person's activity space is comprised of Block Groups 1, 6, and 7.

⁹ It is noteworthy that Wang et al. (2018:7736), who focus on mobility and racial isolation in activity spaces across the 50 largest cities in the U.S., explicitly state: "...we leave for future research the analysis of mobility patterns of suburban and exurban users."

¹⁰ Census block groups are U.S. Census-designated spatial units, consisting of clusters of blocks and generally contain between 600 to 3,000 residents (U.S. Census Bureau 2022).

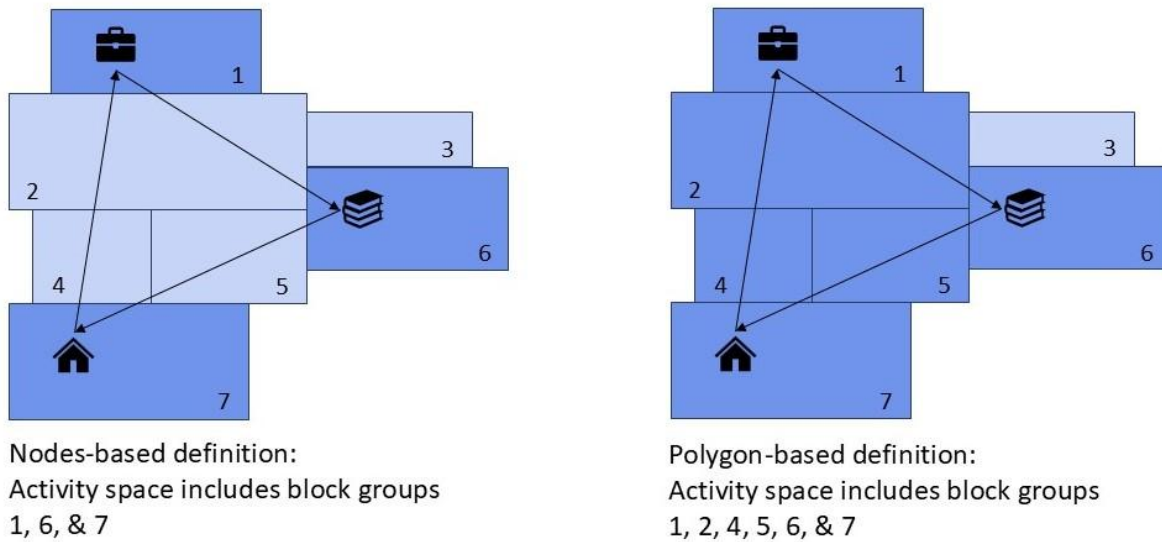


Figure 3 – Schematic Comparing Nodes-Based and Polygon-Based Definitions of Activity Spaces

Polygon-based activity spaces are defined as the convex polygons formed by using the neighborhoods containing individuals' destinations as the corners. As Figure 3 shows, using a polygon-based definition, this person's activity space is not only comprised of those block groups that the person travels *to* (1, 6, and 7), but also those block groups that they pass *through* (2, 4, and 5).

As Jones and Pebley (2014) explain, a nodes-based definition assumes that an individual will encounter the socioeconomic conditions within each node, but will not interact with the contexts in between each node. For example, someone traveling in a car on a freeway is physically separated from and so does not interact with the neighborhoods through which they pass. The polygon-based definition, in contrast, assumes that people are exposed to both the neighborhood contexts of their destinations *and* the places they traverse. An example of this might be traveling on foot, in which a person interacts with other pedestrians and/or people engaging in other street-level activities (e.g., food vending).

As Chapter 4 details, I find that the dominant mode—or the mode that accounts for the most person miles traveled (PMT) in the daily activity spaces of working-age adults in California—is, by far, the automobile. Specifically, 87 percent of working-age adults’ dominant mode is the car. Indeed, this varies by race/ethnicity and neighborhood type; in particular, Black working-age adults, especially those living in urban areas, have the lowest rate of cars as their dominant mode. However, across race/ethnicity and neighborhood type, the automobile is the dominant mode for a majority of working-age adults in California. Since a majority of my sample of working-age adults travel by automobile in their activity spaces, and so, presumably, do not interact with their surroundings while traveling, I used a nodes-based approach to define and construct individual’s activity spaces. Specifically, the confidential data from the NHTS California “add-on” contains the Census block group identifiers¹¹ of the block groups containing the destinations of a respondent’s daily trips. I combined these block groups to comprise a respondent’s activity space. (For a visual schematic, see the “Nodes-based definition” of activity spaces on the left in Figure 3.)

Turning back to measuring racial-spatial isolation in activity spaces, there are several, imperfect measures of segregation.¹² The most common segregation measure is the dissimilarity index, which shows the level of segregation between two racial/ethnic groups by indicating the percentage of either racial group that would have to move to a different part of the overall study area to achieve perfect integration in the study areas. (In the calculation, each racial group’s

¹¹ The 2017 NHTS California Add-on contains Census block group identifiers of shapes from the 2010 TIGER/Line Shapefiles: <https://www.census.gov/geographies/mapping-files/2010/geo/tiger-line-file.html>. This aligns with the shapes used in the 2019 5-year ACS.

¹² See the Technical Appendix of *The Roots of Structural Racism: Twenty-First Century Racial Residential Segregation in the United States* (Menendian, Gailes, and Gambhir 2021) for a particularly helpful explanation of various measures of segregation: <https://belonging.berkeley.edu/technical-appendix>.

proportion in the smaller geography is relative to their proportion in the larger geography. And the higher the value of the dissimilarity index, the higher the level of segregation between the two racial/ethnic groups being measured). But the dissimilarity index, like all measures of segregation, is flawed. As Menendian et al. (2021) explain, the dissimilarity index can obscure overall patterns of segregation by focusing on just one racial/ethnic pairing, which is particularly problematic in racially diverse places like California (the geographic focus of this quantitative analysis). Moreover, the dissimilarity index does not tell us much about the average or typical case, or experience, of individuals in certain racial/ethnic groups. Since I am interested in measuring the extent to which people do or do not encounter those of other races in the places to which they travel in their day-to-day lives, including but beyond their residential locations, the dissimilarity index is not a good fit for this analysis.

Instead, I use the isolation index, which measures the level of isolation experienced by the average member of a particular racial group in a particular geographic area—in this case, activity spaces. The isolation index is a binary metric, meaning it measures the isolation of one racial group relative to everyone else. Using the block group-level 2019 5-year ACS data, which I attached to the block groups that comprise respondents' activity spaces, I calculated the isolation index for each of the four most populous racial groups¹³ in California—white, Latino,¹⁴

¹³ Because the “other race” category contains a diverse mix of different racial/ethnic groups, I excluded this category from the racial-spatial isolation analysis, as findings would be difficult to interpret and largely meaningless. This is one of the limitations of quantitative analyses examining racial/ethnic differences and disparities (Chaiyachati, Peña, and Montoya-Williams 2022).

¹⁴ Using “Latino” to describe everyone in this group is problematic as it is a masculine configuration of the word and so exclusive. This is why many analyses use the more gender-neutral and so inclusive terms “Latinx” or “Latine.” However, because both the 2017 NHTS and 2019 5-year ACS only offered “Hispanic or Latino Origin” when asking respondents to identify their ethnicity, it would technically be inaccurate to report a different descriptor. Therefore, in the quantitative analysis of this dissertation, I use the word “Latino.”

Asian American and Pacific Islander (AAPI), and Black¹⁵—for all activity spaces. The equation is defined as follows:

$$Isolation\ Index = \sum_i^n \left(\frac{x_{im}}{X_m} \right) \left(\frac{x_{im}}{t_i} \right)$$

where x_{im} is the population of racial group m within block group i ; X_m is population of racial group m within the entire activity space; and t_i is the total population of block group i . The index ranges from zero to one, with zero representing no isolation and one representing perfect isolation; this means the higher the value, the more isolation the average member of racial group m experiences in the activity space.

Defining Suburbs

As this study focuses on suburbs—in the context of the growth of residents of color and increased racial segregation therein—I must distinguish between suburban places and other place types for both my quantitative and qualitative analyses. To do so, I use a place typology developed by researchers in the Department of Civil and Environmental Engineering at Portland State University for the California Department of Transportation, which is included in the confidential 2017 NHTS California Add-on.

To develop the place typology, the researchers combined “community design” metrics (including density of residents and jobs, proportion of single-family homes, and number of street intersections) and “regional accessibility” measures (including proportion of jobs in proximity to

¹⁵ Here, and throughout this dissertation, I list the four most populous groups in California by population size (which I show in the next chapter).

transit and number of jobs within a 45-minute car trip of home) to designate neighborhoods (in this case, Census block groups) as various place types. They position these place types along a spectrum of “location efficiency,” which they define as the “fit” between the physical environment and the transportation system. Along the spectrum from strong to weak location efficiency, the place types include: urban core, urban district, urban neighborhood, suburban neighborhood, and non-urban (see Howell et al. 2018 for published results using this place typology). This study uses the “suburban neighborhood” type to define a suburb and, because of my concerns regarding too small of sample sizes (see the sub-section on limitations of my quantitative analysis), combines “urban core,” “urban district,” and “urban neighborhood” to create a single urban category. Specifically, I designate a respondent as a suburbanite if their home address is located in a block group that is designated as a suburban neighborhood.

Nearly three quarters (74%) of block groups in California are suburban neighborhoods, nearly 18 percent are urban, and the rest (about 8%) are non-urban. By way of example, Figure 4 and Figure 5 show maps illustrating the spatial distribution of place types in the Los Angeles region and the San Francisco Bay Area, respectively. As the maps show, urban areas tend to cluster near the “downtown” parts of larger cities and suburban neighborhoods cluster around and emanate from major freeways and highways.

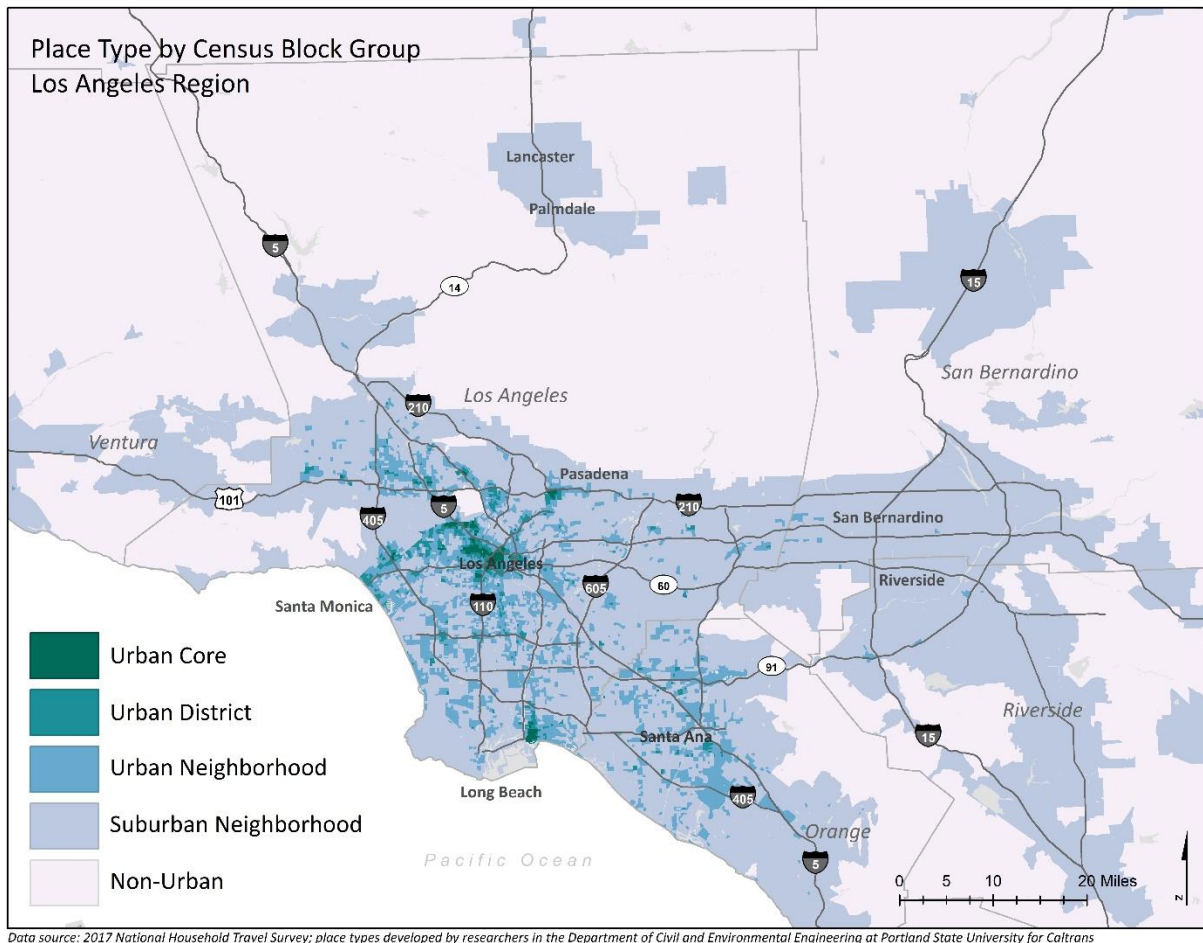


Figure 4 – Map of Place Type by Census Block Group in the Greater Los Angeles Region

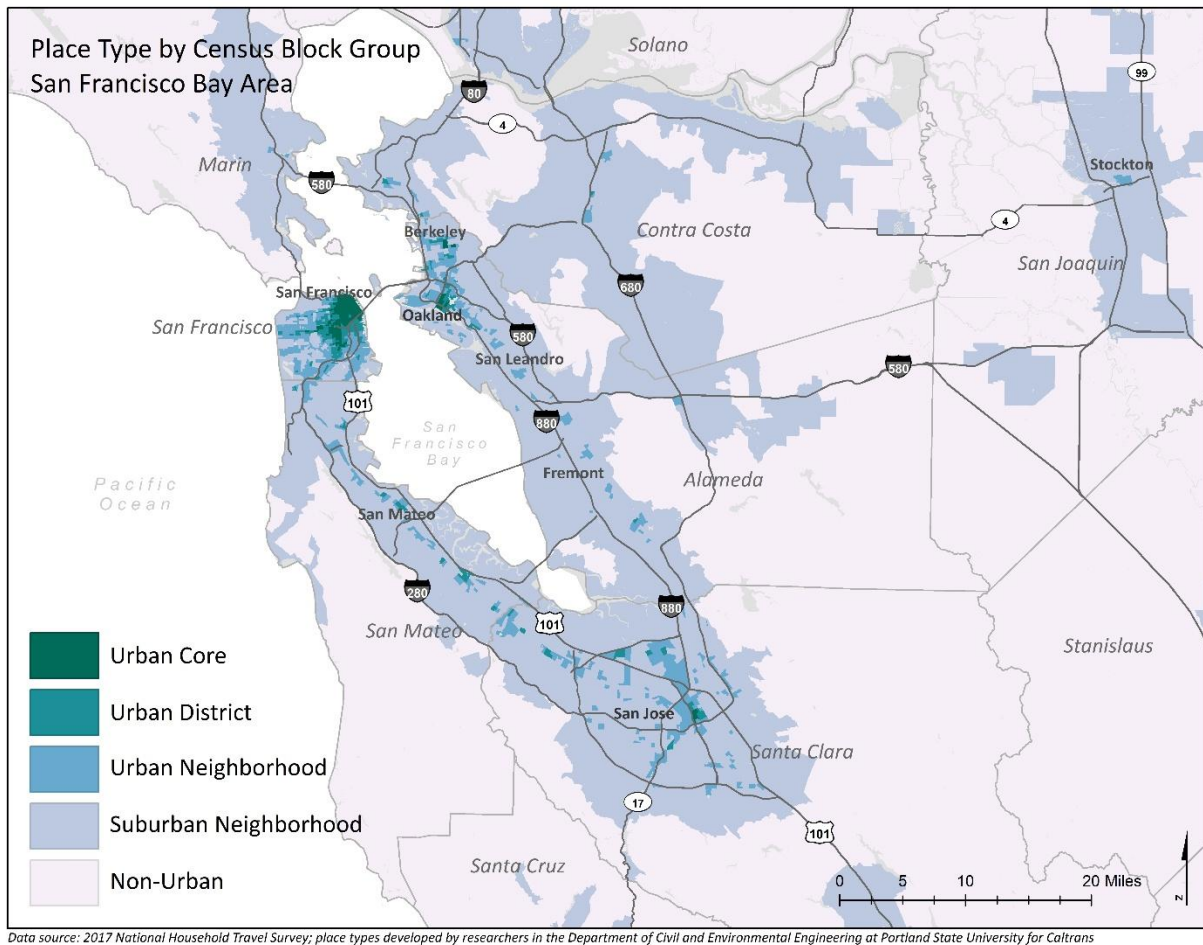


Figure 5 – Map of Place Type by Census Block Group in the San Francisco Bay Area

Model Form and Specification

To understand the effect of mobility on racial-spatial isolation in increasingly segregated suburbs, I developed regression models predicting the value of the isolation index of individuals' activity spaces as a function of level of car access (while controlling for other relevant independent variables, on which I elaborate below).

Using the NHTS-based person-level dataset that I assembled, I selected a sample of respondents who:

- Are working-age adults (i.e., aged between 18 and 64), as youth and older adults tend to have unique or “non-typical” travel behavior, including lower levels of car access due to age restrictions and/or ability (Blumenberg et al. 2012; Buehler et al. 2024);
- Reside in California (the confidential 2017 NHTS California Add-on contains some respondents whose residential addresses are located outside of California);
- Traveled less than 200 miles on the travel day, as those who traveled more than 200 miles are outliers;
- Traveled within California and/or to an adjacent state (Arizona, Nevada, or Oregon) on the travel day, as this includes those living, working, and traveling near a California border (such as in Crescent City, Lake Tahoe, or Needles) and it removes those who happened to do some sort of atypical long-distance travel on the travel day; and
- Started and ended their travel on the travel day at their home location; otherwise, I would not have their home address, as the NHTS California Add-on assigns latitudes and longitudes to the destination of a trip, but not the origin.

Applying this set of five criteria to the person-level dataset yielded a sample of 23,015 working-age adults in California—with 2,170 living in urban areas and 17,903 living in suburban neighborhoods (since a majority of block groups are—and, as the next chapter shows, a majority of working-age adults live in—suburbs). Applying the person weights (including the replicate weights) provided by the NHTS for the 2017 data yielded a weighted sample of 17,952,087

working-age adults in California—with 3,435,403 living in urban areas and 13,510,939 living in suburban neighborhoods.¹⁶

Turning to the model form, recall that my dependent variable, the isolation index, yields a continuous value bounded by zero to one for activity spaces of each observation (person) in the dataset. As Ferrari and Cribari-Neto (2004) explain, a linear regression may not be suitable when the dependent variable is measured continuously on the standard unit interval (0,1) since it might predict values that are less than zero or greater than one. A possible solution to dealing with this problem is transforming the dependent variable to fall on a real number line and then running a linear regression model on the transformed variable. However, among other shortcomings, the results are often difficult to interpret. In response, Ferrari and Cribari-Neto (2004) designed the beta regression approach to perform a regression analysis on an outcome variable that is restricted to the interval (0,1)—such as a rate, a proportion, or, in this case, a concentration index.

The beta regression approach, however, does not consider zero and one values of the dependent variable, and so drops observations with either of those values from the model. Therefore, in the cases in which the dependent variable contains a “non-negligible” number of zeros and/or ones, Ospina and Ferrari (2010, 2012) suggest using what they call a zero-or-one inflated beta regression. This model form has multiple parts: a logistic regression model to predict whether or not the proportion equals zero; a logistic regression model to predict whether

¹⁶ Note that the unweighted and weighted urban and suburban samples do not sum to the total because the total also includes working-age adults living in non-urban (or rural) areas. In this study, I do not specifically examine those living in rural areas—with the primary spatial focus of this dissertation is suburbs (in comparison to cities). Nonetheless, rural areas are certainly an important geographic context in which to examine issues of mobility and isolation for future research.

or not the proportion equals one; and a beta regression model to predict the proportions between zero and one.

Recall that because the isolation index measures the isolation of one racial group relative to everyone else, I calculated a separate isolation index for each of the four most populous racial groups in California (white, Latino, AAPI, and Black). Because there are a non-negligible number of observations with zero values for the Black, AAPI, and Latino isolation indices, I developed a zero-inflated beta regression model to predict the levels of Black, AAPI, and Latino isolation in activity spaces as a function of individual characteristics, focusing specifically on the role of mobility.¹⁷ Conversely, because there are a negligible number of observations with zero values for the white isolation index, I developed a beta regression model to predict the level of white isolation in activity spaces.¹⁸

To estimate the effect of my key independent variable of interest—mobility—on racial isolation values, I created a categorical variable for car access with the following mutually-exclusive categories: 1) living in a zero-car household, 2) living in a car-deficit household, or 3) living in a fully-equipped household (which acts as the reference category, or the category to which the other two are compared in the interpretation of model results).

My models control for several other relevant individual- and household-level characteristics. First, I included a categorical variable for the individual's race/ethnicity consisting of white, Latino, AAPI, Black, and other race/ethnicity. Based on the racial

¹⁷ Eighteen observations have a zero value for the Latino isolation index, 406 observations have a zero value for the AAPI isolation index, and 1,704 observations have a zero value for the Black isolation index. These differences are at least in part due to the fact that AAPI and Black individuals make up smaller proportions of the overall population than white and Latino individuals (as the next chapter shows).

¹⁸ Only five observations in the sample of 23,015 have a zero value for the white isolation index; to run the beta regression, I transformed the five zero values into values of 0.0001.

segregation literature, it is likely that an individual's own race/ethnicity is associated with the level of isolation of that same racial/ethnic group. Indeed, in their examination of socioeconomic characteristics of activity spaces of individuals in Los Angeles, Jones and Pebley (2014) find a strong association between an individual's own race/ethnicity and racial/ethnic composition of their activity space.

Of course, income also plays a critical role in segregation and isolation (Reardon and Bischoff 2011). Therefore, my models control for whether or not a working-age adult lives in a low-income household. I determine if a person lives in a low-income household by using the federal poverty income threshold. The federal poverty rate, however, is not adapted to different geographies, even though the cost of living and income vary greatly across states (and metropolitan regions). California has among the highest costs of living (with its residents ranking fourth most housing burdened in the U.S.¹⁹) as well as greater income inequality than most states.²⁰ Consequently, analysts studying California often double the federal poverty rate threshold to determine a more accurate picture of those who are struggling economically.²¹ In terms of what this means for income, a household of four living below twice the federal poverty level in 2017 earned less than \$49,200 per year (which is about \$64,360 per year in 2025 dollars) (U.S. Department of Health & Human Services 2017). Therefore, I define a household as low-

¹⁹ Housing burden is defined as the share of owner- and renter-occupied households that spend more than 30 percent of their income on housing costs. In California, 54 percent of renters are housing burdened. The only states with higher levels of housing burden than California are Florida (58% housing burdened), Hawaii (56%), and Louisiana (55%) (PolicyLink and USC Equity Research Institute 2024).

²⁰ Here, the measure for income inequality is the ratio of the 95th percentile of annual household incomes to the 20th percentile. California's 95/20 ratio is 10.4, behind only New York (11.9), Massachusetts (10.7), Louisiana (10.6), and Connecticut (10.5) (PolicyLink and USC Equity Research Institute 2024).

²¹ For example, see the poverty indicator for California—200% of the federal poverty threshold—on the National Equity Atlas (PolicyLink and USC Equity Research Institute 2024): <https://nationalequityatlas.org/indicators/poverty?geo=02000000000006000&povlev01=99>.

income if the annual income is less than \$50,000 (I could not set it at exactly \$49,200 because the household income data in the NHTS are reported as a single categorical variable, with \$49,999 as an upper bound of a category).

Research shows that immigrants are increasingly moving from cities to suburbs as well as increasingly landing directly in suburbs when they arrive in the U.S. (Carrillo et al. 2016; Singer 2004; Singer et al. 2008; Walker 2018). But with this increasing suburbanization of immigrants, immigrants are also experiencing increasing segregation in suburban environments (Farrell 2016). Therefore, I also include working-age adults' immigration status in my models predicting levels of racial-spatial isolation. I also control for the employment status of the working-age adult—as commutes tend to be longer than other types of daily trips (Hanson 2017), and so workers potentially have larger activity spaces and so may be exposed to more diverse populations on a day-to-day basis.

Finally, because of my focus on suburbs (in comparison to urban areas), my models control for residential neighborhood type, based on the aforementioned place typology designating the block groups where working-age adults live as urban, suburban, or non-urban (or rural). And indeed, Jones and Pebley (2014) found that population density—which is related to place types (in that urban areas are far denser in terms of both people and land uses than suburbs)—to significantly affect the racial/ethnic composition of activity spaces. To further understand what is happening *in* suburbs (versus urban areas), I ran separate models for working-age adults living in suburbs and those living in urban areas.

Limitations

My quantitative analysis, of course, has limitations. First, slicing up datasets in the way that I did—namely, disaggregating the person-level NHTS dataset by race *and* neighborhood type—results in relatively small sample sizes for some racial groups. This is particularly true for working-age adults living in urban areas, since urban neighborhoods make up a much smaller proportion of California block groups than suburban neighborhoods. As Figure 6 shows, sample sizes for working-age adults who are people of color are relatively low in urban areas—particularly for Black working-age adults (112) and working-age adults of a race/ethnicity other than white, Latino, AAPI, or Black (98).

To resolve this issue, as I describe above, I applied the person weights (including the replicate weights) provided by the NHTS to produce by the descriptive statistics and regression models. Applying these weights yields an urban population of 236,012 Black working-age adults and 134,668 working-age adults of a race/ethnicity other than white, Latino, AAPI, and Black (see Figure 9 in the next chapter). Weighting is also necessary as the 2017 NHTS California Add-on over sampled white individuals and under sampled people of color, particularly Latino individuals.

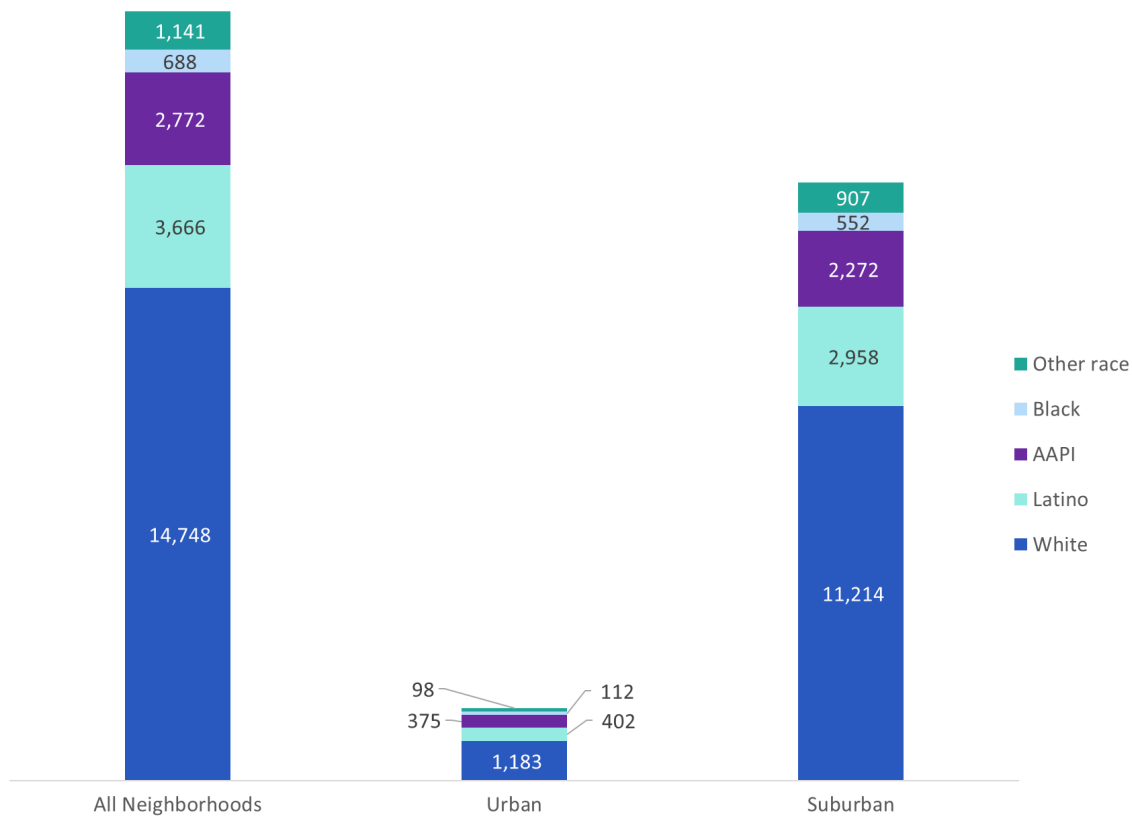


Figure 6 – Number of Working-age Adults by Race/Ethnicity and Residential Neighborhood Type in the 2017 National Household Travel Survey California Add-on (unweighted)

Another limitation of my quantitative analysis is that the 2017 NHTS California Add-on contains relatively old data. As I explain above, there is a more recent 2022 NHTS. Because Caltrans opted out of purchasing a California “add on” for that release, there are no spatial data for California in the 2022 NHTS. Therefore, I have to use the 2017 NHTS data. Because of this, I may not be capturing more contemporary trends, particularly travel behavior changes that may have happened after the COVID-19 pandemic. Indeed, a flurry of research has recently emerged examining the effect of the COVID-19 pandemic on travel behavior, particularly focused on the rise of telecommuting and the decline in transit use (e.g., Burris et al. 2023; McNally, Rafiq, and Uddin 2023). However, research also shows that low-income people of color were less likely to

have jobs that accommodated telecommuting, and many still rely on transit, so the effects of the pandemic on travel behavior for low-income groups and people of color was more mediated (e.g., Brough, Freedman, and Phillips 2021; Paul and Taylor 2024; Wilbur et al. 2023).²²

A third potential limitation is that my measure of racial-spatial isolation, the isolation index, largely reflects the demographic composition of geographic areas. While the isolation index is a powerful indicator as it tells us about the typical or average experience of members of different racial/ethnic groups, rather than overall patterns (which is what the dissimilarity index does), a criticism of the isolation index is that relatively lower isolation values might be a result of a smaller racial/ethnic group population rather than a sign of integration. Specifically, as Menendian et al. (2021) explain, low isolation values may indicate that a racial/ethnic group is too small to make up a majority of a community, even if that group is relatively isolated. And so, it is important to interpret low isolation index values as showing that the average member of a racial/ethnic group is more likely to encounter someone of a different race/ethnicity in their day-to-day lives, not that they are necessarily integrated. This is why it is important to present the isolation index in context (Menendian et al. 2021)—particularly in terms of the racial/ethnic compositions of the geographic units of analysis—which I do in Chapter 4.

Finally, as many mobilities scholars argue, quantitative transportation analyses miss critical elements such as the meaning and experience of movement through space as well as the social, economic, and cultural forces that shape mobility and access (Cresswell 2010; Sheller

²² Indeed, in my quantitative analysis—which I detail in the next section—I asked interviewees, who are all low-income people of color living in and traveling around Southern California suburbs, in the summer of 2024 if any anything about how they get around on a day-to-day basis has changed since the pandemic, and they largely responded “no.” Notably, one interviewee, a 27-year-old Latinx woman living in Jurupa Valley, California, said that she missed Riverside Transit Agency’s “Fare Free Fridays,” which ended in June 2024 (see <https://www.riversidetransit.com/index.php/news-a-publications/latest-news/787-free-ride-fridays>).

2018; Sheller and Urry 2006; Urry 2007). Further, quantitative analyses do not consider people's own beliefs related to what even constitutes mobility and accessibility in their daily lives. As

Cresswell (2010) writes:

“[Transport researchers] have not been so good at telling us about the representations and meanings of mobility either at the individual level or at a societal level. Neither have they told us how mobility is actually embodied and practised. Real bodies moving have never been at the top of the agenda in transport studies” (2010:19).

This is where my qualitative analysis comes in.

Qualitative Analysis

While my quantitative analysis reveals the association (or the lack thereof) between mobility and racial-spatial isolation in suburbs, it does not explain how the relationship operates or how it affects people's outcomes and opportunities. To explore these questions, I use a qualitative methodology that centers the experiences and knowledge of those from marginalized communities who are most affected by transportation disparities but who are typically excluded from transportation planning research (Lowe 2021; The Untokening Collective 2018). In this section, I detail my collection and analysis of primary data on peoples' lived experiences of mobility/immobility and racial isolation in suburban neighborhoods.

Data Collection and Thematic Analysis

For my qualitative analysis, I collected data through semi-structured interviews and cognitive mapping exercises with 30 low-income people of color whose activity spaces, including their residences, largely span economically-distressed suburbs in Southern California's Inland Empire. (See the previous chapter in which I draw on scholarship examining the growth of people of color in the largely suburban Inland Empire and evolving dynamics of racial

segregation therein (Carpio 2019; De Lara 2018; Tilton et al. 2025). For the purposes of this research, I define the Inland Empire as Riverside and San Bernardino counties as well as the cities of Pomona and Claremont in eastern Los Angeles County (Collins et al. 2024).

To develop my interview instrument for this project, I built off of an instrument I wrote and used as part of a 2022 UCLA Graduate Summer Research Mentorship project, in which I examined the transportation needs of and challenges facing low-income people living in Los Angeles suburbs (primarily in the Pacoima neighborhood of Los Angeles' San Fernando Valley). For this project, my instrument focused on questions about peoples' daily experiences of mobility/immobility, experiences (or lack thereof) of racial-spatial isolation, and access to opportunities (mainly employment) in the context of dispersed suburban environments. I also broadened the focus of the conversation about space/place and mobility/immobility from peoples' residential neighborhoods to their activity spaces, as activity spaces are the spatial unit of interest for this project. See Appendix A for my interview instrument.

A key piece of both transportation experiences and experiences of isolation is peoples' individual perceptions of space. Since I am trying to get a sense of what comprises peoples' activity spaces and the extent to which their mobility/immobility shape these spaces, I included a cognitive mapping exercise as part of the interview instrument. A cognitive map is “a construct which encompasses those cognitive processes which enable people to acquire, code, store, recall, and manipulate information about the nature of their spatial environment” (Downs and Stea 1973:xiv). Cognitive maps are distinct from cartographic representations of space—and in fact, cognitive maps often depart from such cartographic representations, which are almost always planner-imposed and cartesian. People form cognitive maps based on knowledge that they obtain from interactions with environments, and others in those environments, which happens when

people move through space “as part of the everyday process of living” (Golledge and Stimson 1997:251). In this way, experiences of travel help formulate cognitive maps (Downs and Stea 1973), and, as research has shown, cognitive maps, in turn, influence how people travel (e.g., distances, destinations, and modes) (Weston and Handy 2004).

Further, research has shown that an individual’s cognitive map is also related to their socioeconomic attributes, including race. For example, Banerjee and Baer (1984) observed that while upper-class whites often draw maps at broad extents encompassing large areas, lower-income people of color draw maps focused on much smaller scales. They find that such perceptions are related, at least in part, to varied levels of mobility among different racial/ethnic groups. Indeed, this is the very relationship that I am testing—particularly in the context of increasingly segregated and dispersed suburbs—which further justifies the use of a cognitive mapping exercise in this project. Such an exercise allowed interviewees to center their own knowledge and memories of their activity space, the way they move through such space, and the way they relate (or do not relate) to other spaces.

In the cognitive mapping exercise, I asked interviewees to draw “sketch maps” of their activity spaces, and then I suggested that they could reference their sketches throughout the interview. For this exercise, I provided pieces of blank white paper, colored pencils, and graphite pencils. I assured interviewees that drawing ability was not important—that the objective of the exercise was not about illustrating an attractive picture. I said: “Just sketch how you think about going through your day; there is absolutely no right or wrong answer.” I observed that this assurance helped many interviewees feel more at ease with the sketch map portion of the exercise. I developed this prompt after conducting a test interview, in which I “tested” my interview instrument with an individual (who I compensated with a \$50 gift card) before using it

in interviews for this project. In the test interview, the participant provided feedback that the drawing aspect of the exercise was initially intimidating and could perhaps hinder full participation in the exercise. She suggested that providing a disclaimer about drawing ability could help dispel the intimidation, if present.

I obtained approval from UCLA's Institutional Review Board (IRB) for this project in May 2024 and conducted interviews between July and September 2024. My research assistant and I conducted all interviews in person at a site of the interviewee's choosing.²³ Compared to video conferencing or using the phone, conducting interviews in person enhanced our relationality and ability to build trust, which was important when talking about often sensitive issues, such as feeling immobile, losing a job, dealing with health problems, or experiencing racism. Being in person was also important for the cognitive mapping exercise, so we could provide supplies for the sketch mapping and the interviewee could reference and add to their sketch map throughout our conversation. The average interview length was 45.5 minutes.²⁴ (We promised that the interview would take no longer than an hour.) Each interviewee received a \$50 gift card for a vendor of their choice for participating in the interview. We provided the gift card at the beginning of the interview. My research assistant conducted 10 interviews in Spanish (as I, unfortunately, do not speak Spanish) and I conducted the rest of the interviews (20) in English, with my research assistant taking notes during most of them and asking follow-up questions if necessary. We debriefed directly following each interview, during which we took notes

²³ Interview locations included: fast-food restaurants (10), interviewees' homes (8), public libraries (6), coffee shops (4), and public parks (2).

²⁴ This does not include the preamble that we gave to each interviewee before the interview started, including a description of the project, reviewing the consent form for participating in the interview, and asking for permission to record for note-taking and transcription purposes. Also, two interviewees did not want to be recorded (meaning I do not have the exact length of the interview on record), so this calculation is based on 28 of the 30 interviews.

documenting key take-aways and recurring themes that were starting to arise during the data collection process.

To analyze interview data, I used an iterative thematic analysis based on the work of Braun and Clark (2006, 2021). To start, I read through the interview notes, debriefing notes, and transcripts several times to inductively identify recurrent themes and to develop a codebook. I then used the qualitative analysis software Nvivo (version 15) to code the interview transcripts to deductively connect interview data to the themes that I identified in my inductive analysis as well as to identify additional themes. I then pulled interview excerpts by theme to write detailed memos, formulating the bases for my qualitative chapters (Chapters 5 and 6).

Interviewee Recruitment

To recruit interviewees, I started with a geo-spatial analysis (using ArcGIS Pro) to identify economically-distressed suburban neighborhoods in the Inland Empire. To define an economically-distressed suburb, I used the aforementioned place typology that comes with the confidential 2017 NHTS California Add-on and the 2019 5-year American Community Survey estimates²⁵ of the percent living below twice the federal poverty line at the block group level. Specifically, I define a suburban neighborhood as economically distressed if the percent of its population living below 200 percent of (or twice) the federal poverty rate²⁶ is within the top two

²⁵ I had to use the 2019 5-year ACS, instead of more recent data, to align the block group shapes with that in the place typology (which uses 2010 block group shapes from TIGER/Line).

²⁶ In the ACS, this variable is described as the ratio of income to poverty level; the number of people living below 200 percent of the federal poverty level is equal to the number living below a ratio value of two or less.

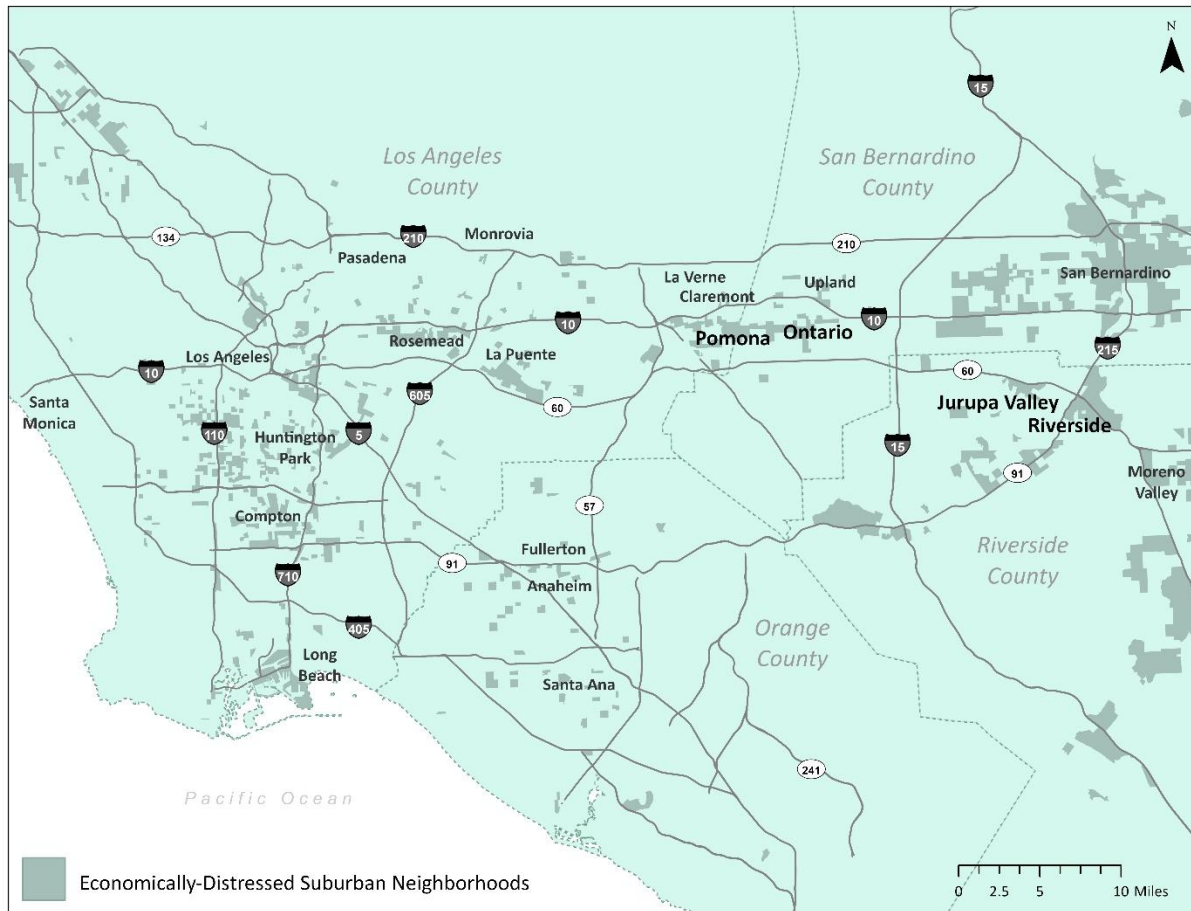


Figure 7 – Map of Interviewee Recruitment Sites, Interviewees’ Residential Locations, and Surrounding Areas in Southern California

I then used Google Maps to identify grocery stores in economically-distressed suburbs in the Inland Empire. I chose to recruit interviewees from grocery stores because, compared to other sites, grocery stores attract a diverse range of people. Other types of potential recruitment sites—such as public libraries, public parks, and social service providers—are less universally visited and attract similar types of people, which could potentially bias my sample toward a

certain type of interviewee. Certainly, research shows that women disproportionately do the household grocery shopping (Taylor, Ralph, and Smart 2015), and so there is a possibility that my recruitment pool had a gender bias; indeed, 19 out of my 30 interviewees (see Table 1) ended up identifying as women. But compared to other potential recruitment sites, grocery stores provide relatively diverse and less biased recruitment pools—as the next sub-section on interviewee characteristics shows.

Overall, my research assistant and I visited 10 grocery stores over eight (non-consecutive) days in a three-month period (July-September 2024). We started recruitment at grocery stores in the Pomona area (which is on the border of Los Angeles and San Bernardino counties), then moved east to Ontario, then farther east to Riverside, then west to Jurupa Valley (see the labels in bold on the map in Figure 7). To mitigate bias in our sample, we varied the times of day and the days of the week of our visits (as similar types of people may visit grocery stores at the same times/days). To eliminate our own biases in who we approached for recruitment, we stood at the entrances of grocery stores and approached every N^{th} person who walked by us as they entered the store. We chose an N at the beginning of each site visit based on our own judgement about how busy the store was (the busier the store, the larger the N ; on average, $N = 3$). We asked potential interviewees screening questions to ensure they met the following criteria: 1) They live in the Inland Empire (which, for purposes of this study, includes Pomona); 2) They identify as a person of color; 3) They are between the ages of 18 and 64; and 4) They live in a low-income household.²⁷ Across the 10 recruitment site visits, we approached

²⁷ The California Department of Housing and Community Development releases State Income Limits annually, in which it lists the area median income (AMI) and household income levels for a range of income categories classifying households for all the state's counties, including low-income. Low-income is typically calculated as 80

155 people, 36 of whom met the eligibility criteria and agreed to meet at a later time and date for an in-person interview; 14 of these recruits later cancelled or did not show up for the interview.

So, our second method of recruitment was through snowball sampling, in which we asked interviewees at the end of interviews if they had ideas of others who we could interview (who met the eligibility criteria). Through snowball sampling, we recruited an additional 11 interviewees, eight of whom showed up for the interview. I originally planned to go north of Riverside to recruit interviewees from the San Bernardino area, which has clusters of economically-distressed suburbs (see Figure 7), but snowball sampling took us to Jurupa Valley instead—at which point I had reached saturation with 30 in-depth interviews.

Interviewee Characteristics

Table 1 provides a snapshot of interviewee characteristics as an overview of their varying identities and circumstances, which help shape their experiences of mobility/immobility and their suburban activity spaces (as Chapters 5 and 6 discuss in depth).

Race/Ethnicity & Gender Identity

As Table 1 shows, all interviewees identify as people of color (as this was one of the eligibility criteria for this study): Over two thirds (70%) of interviewees identify as Latina/o/x/e or Hispanic (some used the terms “Mexican” or “Mexican American”) and about one third (30%)

percent of the AMI for the county (with some exceptions). In 2024, in Los Angeles County, a household was low-income if it earned less than \$110,950/year. In both Riverside and San Bernardino counties, the low-income threshold was less than \$82,000/year (California Department of Housing and Community Development 2024). As the next section of this chapter shows, my interviewees largely lived in households earning far less than these thresholds, often putting them in the acutely low- or extremely low-income categories, which I specify in the next section on interviewee characteristics.

identify as Black or African American. In terms of gender, a bit less than two thirds (63%) of interviewees identify as female and about one third (37%) identify as male; no interviewee identifies as non-binary.

Table 1 – Characteristics of Interviewees

	Count	Percent
<i>TOTAL</i>	30	100%
Race/Ethnicity		
Latino/a/x/e or Hispanic	21	70%
Black or African American	9	30%
Age (mean)	43	
Gender Identity		
Female	19	63%
Male	11	37%
Non-binary	0	0%
Immigration Status		
U.S.-born	18	60%
Immigrant	12	40%
<i>U.S. Citizen</i>	4	13%
<i>LPR or DACA Recipient</i>	2	7%
<i>Undocumented</i>	3	10%
<i>Status Unknown</i>	3	10%
Employment Status		
Employed	14	47%
Full-time	10	33%
Part-time	4	13%
Unemployed or Not Employed	16	53%
Annual Household Income (median)	\$24,000	n/a
Housing Status		
Lives in Non-Subsidized Housing	21	70%
Lives in Subsidized Housing	7	23%
Unhoused	2	7%
Car Access		
Has Car Access	24	80%
No Car Access	6	20%
Parental Status		
Has Children	22	73%
Does Not Have Children	8	27%

Age

In the sample of working-age adults, interviewees range from 20 to 64 years old, with a mean age of 43 years old; this aligns with the sample of working-age adults living in California suburbs from the 2017 NHTS that I used in my quantitative analysis, in which the mean age is 41. As Figure 8 shows, the sample of interviewees represents a range of life phases, with a cluster of interviewees in their late 20s and early 30s and another cluster in their mid-50s.

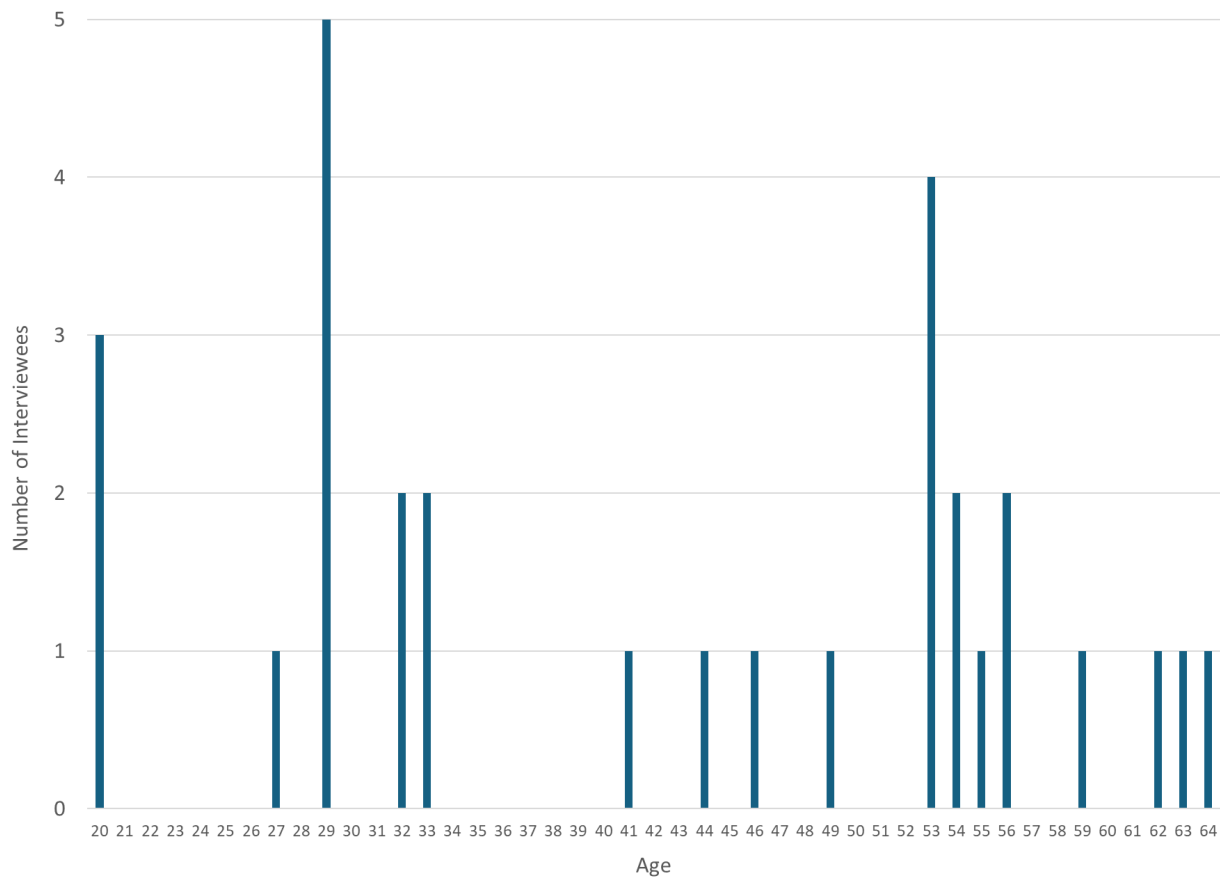


Figure 8 – Histogram of Number of Interviewees by Age

Parental and/or Caretaking Status

Almost three quarters (73%) of interviewees are parents; among the parents, the number of children ranges from one to seven, with a median of three children. Caretaking

responsibilities, however, do not necessarily fall just on parents. Some interviewees who are parents do not live with their children—either because their children are older and live elsewhere or, in two cases, because their children are currently in foster care. Others live with younger siblings or grandchildren, for whom they care.

Immigration & Citizenship Status

Sixty percent of interviewees were born in the U.S., while 40 percent are immigrants, primarily from Mexico. Among interviewees who are immigrants, at the time of our meetings, four had U.S. citizenship, one was a legal permanent resident, one was a Deferred Action for Childhood Arrivals (DACA) recipient, three were undocumented, and three did not share their citizenship status. Because a large proportion of the sample are immigrants, many were able to compare their transportation experiences in the Inland Empire to that in their hometowns and regions, yielding critical perspectives on new ways to improve mobility in their current contexts.

Income & Employment Status

While annual household incomes of interviewees range from zero to about \$83,000/year, the median is \$24,000/year.²⁸ In Los Angeles County, a household of four is considered extremely low income if its annual household income is below \$41,600; in Riverside County and San Bernardino County, the number is \$31,200 (California Department of Housing and Community Development 2024). Using these income limits—although, of course, household

²⁸ Due to unstable or sporadic employment, several interviewees could not specify an annual amount, but rather provided a monthly average, from which I derived an annual number.

sizes vary—the median annual household income among interviewees is generally in the extremely low-income category.

Relatedly, only about half (47%) of interviewees are employed, most of whom (10) have full-time jobs, but some (4) have part-time jobs. The most common full-time jobs among interviewees are in the region's logistics industry, including warehouses, as well as landscaping and construction, and the most common part-time job among interviewees is professional caregiving, specifically elder care. Among those who are not employed (53%), there are a variety of reasons they are without jobs: While some are actively looking for and having difficulty securing a job (a finding I discuss in much more detail in Chapter 6), others are not employed due to familial caregiving responsibilities (for their children and/or grandchildren), health issues that make it difficult for them to work, or, in one case, being a full-time college student.

Car Access

Finally, four fifths (80%) of interviewees have car access. As a reminder, in my quantitative analysis, I define car access within three categories: living in a zero-car household, living in a car-deficit household (i.e., having less cars than adults), or living in a fully-equipped household (i.e., having at least one vehicle per adult). For my qualitative analysis, however, I define car access differently, taking the lead from interviewees. For most, car access does not necessarily mean owning or even always having exclusive access to a vehicle; rather, it means having access to a vehicle when they need it, most of the time, even if it is a vehicle they share with someone else (most commonly a family member).

In this sense, the definition of mobility, based on car access, for my qualitative analysis is more expansive than for my quantitative analysis. But even so, I find that six out of 30

interviewees (20%) have no car access. Given the advantage of using a car to get around dispersed suburban environments, this may be a larger proportion than some might anticipate. However, research shows that low incomes significantly hinder car access (Klein, Basu, and Smart 2023a; Klein and Smart 2017). For interviewees, having no car access might mean that someone else in the household has almost exclusive access to the household vehicle (usually for work), so it is unavailable for them to use most of the time. It can also mean not being able to drive—even if there is a household vehicle available—because they do not know how to drive, they do not have a driver’s license, or they have health issues that prevent them from being able to drive.

Place Demographics

As context for various place references in the findings sections that follow, here I briefly present racial/ethnic and income demographics of the places in which interviewees live and travel to/through, as well as some nearby places they commonly discuss, usually in comparison to their own residential locations—all of which are in the Inland Empire.

As I explain above, I recruited interviewees outside of a variety of different grocery stores in economically-distressed suburban neighborhoods in the Inland Empire. Combined with snowball sampling, I recruited interviewees from the following places, which are in bold on the map in Figure 7: Pomona (13), Riverside (9), Jurupa Valley (4), and Ontario (3).²⁹ Figure 7 also shows three nearby places that interviewees repeatedly reference: Claremont, La Verne, and

²⁹ One interviewee is from Pomona but recently moved to an apartment in Claremont; since she is an outlier, I do not consider Claremont as one of the primary places interviewees live and travel within and so did not bold it on the map in Figure 7.

Upland, which are north of the 10 freeway, in the foothills of the San Gabriel mountains, and contain far less economically-distressed neighborhoods.

Table 2 (Social Explorer, Inc. 2025) shows the racial/ethnic composition and income metrics for the four primary places that interviews live and travel to/through (Jurupa Valley, Ontario, Pomona, and Riverside) as well as three nearby places that interviewees repeatedly reference (Claremont, La Verne, and Upland). As the chart shows, the four residential locations of interviewees (highlighted in grey) are predominantly home to people of color, with particularly high proportions of Latino or Hispanic (as labeled by the U.S. Census) residents and relatively low proportions of white residents. This is in stark contrast to Claremont, La Verne, and Upland, which have much lower proportions of people of color and so higher proportions white residents. In terms of income, about one third of residents in the four residential locations live below twice the federal poverty rate, with no location having a median annual household income exceeding \$100,000. Again, in contrast, the three nearby areas have far lower rates of poverty, and all median annual household incomes are more than \$100,000.

Table 2 – Racial/Ethnic & Income of Interviewee Recruitment Sites and Nearby Places

	Residential Location of Interviewees				Nearby Place that Interviewees Reference		
	<i>Jurupa Valley</i>	<i>Ontario</i>	<i>Pomona</i>	<i>Riverside</i>	<i>Claremont</i>	<i>La Verne</i>	<i>Upland</i>
Race/ethnicity							
White	18.3%	13.8%	10.0%	27.5%	46.3%	44.1%	35.7%
Latino or Hispanic	71.4%	68.3%	71.5%	54.6%	26.8%	36.0%	43.2%
AAPI	5.0%	8.6%	11.1%	8.4%	14.7%	10.3%	10.1%
Black or African American	3.7%	6.0%	5.0%	5.7%	5.6%	3.3%	6.0%
Median Annual Household Income							
	\$96,190	\$82,806	\$78,869	\$88,575	\$122,127	\$104,565	\$101,407

In sum, the four places where interviewees live and travel to/through are predominantly low-income and include high percentages of people of color. This, of course, makes sense, since I intentionally chose economically-distressed neighborhoods from which to recruit interviewees. However, the three places that interviewees reference are whiter and more affluent. I refer back to these data in Chapters 5 and 6, when interviewees reference these places in their descriptions of mobility, isolation, and access to opportunities in dispersed suburban landscapes.

Limitations

A potential limitation of my qualitative approach is the small sample size—relative to that of my quantitative analysis—based on participant recruitment from a specific region (the Inland Empire). This means that my findings cannot be generalized. However, my qualitative analysis offers unique insights into my examination of the relationship between mobility and racial-spatial isolation in suburbs that cannot be gleaned from my quantitative analysis. Indeed,

my qualitative approach addresses many of the aforementioned limitations of quantitative analyses. In particular, through interviews and cognitive mapping exercises, I am able to analyze mobility as not just “the ability to move between different activity sites” (transportation planning’s technical definition), but also as an embodied experience that shapes life outcomes (Urry 2007).

Another limitation of my quantitative analysis is that my sample does not include low-income white suburbanites, higher-income suburbanites, or urban residents across race/ethnicity and income. This means that while I can examine and illustrate the experience of mobility and racial-spatial isolation among low-income suburbanites of color—as well as the associated outcomes—I cannot directly compare my findings to the experiences and outcomes of those in these other groups. This is an important task for future research.

Chapter 4: Car Access and Racial-Spatial Isolation in California Suburbs

The increase of people of color in suburbs has been accompanied by an increase in racial residential segregation in suburbs (Carpio 2019; De Lara 2018; Denton and Gibbons 2013; Farrell 2016; Lichter et al. 2015, 2023; powell and Reece 2013). Scholars point to racial steering, predatory lending, and NIMBYism—specifically, discrimination against housing voucher holders—to explain contemporary racial segregation in suburbs; this has been particularly well-documented in California (Covington 2015; Covington et al. 2011; Kirkpatrick and Gallagher 2013; Schafran 2018; Schafran and Wegmann 2012; Teaford 2020). However, much less is known about the role of physical mobility in facilitating, or alleviating, racial segregation in suburbs. In the context of increased segregation, transportation has the potential to widen spatial access to opportunities—but barriers to transportation have the potential the further hinder such access.

Moreover, while scholars have long-studied racial segregation in U.S. metro regions—and its harms to people of color—most studies have considered racial *residential* segregation. Of course, where one lives is critically important, but what about people’s broader spatial environments? Specifically, what about the places that people travel to and through in their day-to-day lives? Scholars are increasingly encouraging each other to expand such spatial scopes to consider where people spend time outside of their homes (Athey et al. 2021; Cagney et al. 2020; Jones and Pebley 2014; Kwan 2012). This is a difficult task, as most secondary data are structured in a way that makes it much easier to pinpoint where one resides rather than where one travels. However, using confidential spatial data from the 2017 National Household Travel Survey (NHTS) California Add-on sample, I construct and examine individual’s activity spaces, which encompass all locations (e.g., home, work, school) that an individual visits as part of their

daily activities and travel (Kwan 2012). In this way, my analysis conceives of and measures segregation more holistically than much of the previous research on this topic.

Thinking beyond residential location, this chapter examines the effect of physical mobility on racial-spatial isolation in people's activity spaces in California suburbs (compared its urban areas). I start by presenting detailed information on the demographic characteristics of my sample: working-age adults in California. I then describe and compare working-age adults' mobility patterns—focused specifically on car access—by race/ethnicity and neighborhood type (suburban vs. urban). Next, I present descriptive statistics on my dependent variable of interest: racial-spatial isolation in activity spaces of working-age adults in California. Finally, I present results from regression models estimating the effect of mobility (measured by level of car access) on racial-spatial isolation (of people's activity spaces), controlling for other factors that I hypothesize shape such racial-spatial isolation. For these analyses, I draw not just on the 2017 NHTS California Add-on sample, which includes confidential spatial data housed at the Transportation Secure Data Center at the National Renewable Energy Lab, but also the 2019 5-year American Community Survey (ACS). (For a detailed explanation of data and methodology, see Chapter 3). I close with a discussion about the implications of my findings.

Demographics of Working-Age Adults in California

Table 3 and Table 4 show weighted descriptive statistics for this study's sample of working-age adults (ages 18-64) living in California from the 2017 National Household Travel Survey California Add-on; many of these individual- and household-level characteristics influence people's travel behavior, including socio-demographic characteristics, levels of

mobility—in this case, car access, or lack thereof—and neighborhood type (Ewing and Cervero 2010; Giuliano 2003, 2005; Klein and Smart 2017; Taylor and Ong 1995).

In terms of residential neighborhood type, 75 percent of the working-age adults in the sample live in a suburban neighborhood, 19 percent live in an urban area, and six percent live in a non-urban (or a rural) area—confirming the well-documented and long-standing trend of a majority of U.S. residents, including Californians, living in suburbs (Baldassare 1992; Johnson and Shifferd 2016; Schouten 2021).

As Table 3 shows, the racial/ethnic make-up of working-age adults in California suburbs and neighborhoods overall is almost exactly the same. Specifically, overall and in suburbs, white and Latino working-age adults make up about 38 percent, while AAPI working-age adults make up about 15 percent and Black working-age adults make up a much smaller proportion of about 5 percent. In urban areas, the racial/ethnic composition is only slightly different, with Latino working-age adults accounting for about 37 percent and white working-age adults comprising closer to 36 percent. AAPI and Black working-age adults account for slightly larger proportions in urban areas—17 percent and 7 percent, respectively—than in suburbs, but are still very much in the minority. Those who are some other race account for 4 percent across both suburbs and urban areas (and so neighborhoods overall). Such similar racial/ethnic proportions across urban and suburban areas may seem surprising, but these findings reflect how the “new” trend of people of color locating in the suburbs as actually “an old story here” in California (Carpio 2019:9). Indeed, many scholars have documented the relatively early suburbanization of people of color in both Northern and Southern California (Carpio 2019; Cavin 2013; Cheng 2013; Nicolaides 2024; Pastor 2013; Pfeiffer 2012; Pulido 2000; Pulido and Pastor 2013; Schafran

2018)—one of the many ways in which the Golden State is “America fast forward” (Pastor 2018).

Table 3 – Individual-level Characteristics of Sample by Residential Neighborhood Type (weighted)

	All	Urban	Suburban
Race/Ethnicity (%)^a			
White	38.5%	35.9%	38.4%
Latino or Hispanic	37.6%	36.5%	37.9%
Asian American or Pacific Islander (AAPI)	14.8%	16.8%	14.9%
Black or African American	5.0%	6.9%	4.7%
Other Race	4.2%	3.9%	4.2%
Age (mean)	41	39	41
Sex (%)			
Female	50.1%	47.6%	50.8%
Male	49.9%	52.4%	49.2%
Immigration Status (%)			
U.S.-born	70.9%	64.5%	71.8%
Immigrant	29.1%	35.5%	28.2%
Employment Status (%)^b			
Employed	74.8%	79.1%	74.3%
Full-time	56.3%	59.7%	55.9%
Part-time	15.8%	17.2%	15.6%
Not Employed or Unemployed	25.2%	20.9%	25.7%
Sample Size (unweighted)^c	23,015	2,170	17,903
Population Size (weighted sample)	17,952,087	3,435,403	13,510,939

^a Notes about the construction of these racial/ethnic categories (in addition to naming race itself as a social construct): 1.) The language for ethnicity in the NHTS is “Hispanic or Latino Origin,” which is why I label this category “Latino” rather than “Latinx” or “Latine.” 2.) To construct categories from the NHTS data, I placed all those who marked “Yes, Hispanic or Latino” into that ethnic category. Then, I placed all those who marked “No, Not Hispanic or Latino” into whichever racial category they marked. The other racial categories, therefore, can be interpreted as “non-Hispanic” ethnicity. 3.) The AAPI category collapses the NHTS categories of “Asian” and “Native Hawaiian or other Pacific Islander.” 4.) The “Other race” category collapses the NHTS categories of “American Indian or Alaska Native,” “Some other race,” or “Multiple responses selected.” 5.) Here, and in tables/charts throughout this chapter, I order the racial/ethnic groups by population size, from largest to smallest: white, Latino, AAPI, Black, and other race.

^b Notes about employment status: 1.) The “Full-time” and “Part-time” percentages do not add up to the corresponding “Employed” percentage because, in the 2017 NHTS, for my sample of working-age adults, about 3.3% of those who identified as employed did not provide information about whether their employment is full-time or part-time. 2.) “Not employed,” also called “Not in labor force,” means the person does not have a job and is not looking for one; “Unemployed” means the person does not have a job but is actively looking for one (U.S. Census Bureau n.d.).

^c The urban and suburban samples do not sum to the total because the total also includes those living in non-urban areas. Throughout this chapter, “all neighborhoods” includes non-urban in addition to urban and suburban.

While there are similar racial/ethnic compositions of working-age adults across urban and suburban areas, it is critical to note that the scalar difference is stark; this makes sense, as, again, most individuals live in suburbs. To illustrate this, Figure 9 shows the number—rather than the percent—of working-age adults in California by race/ethnicity and residential neighborhood type. While the proportions are similar (as Table 3 shows), a majority of working-age adults across each racial/ethnic group lives in a suburban neighborhood (as Figure 9 shows). This is, at least in part, why neighborhoods overall so closely resemble the racial/ethnic compositions of suburban areas, in particular.

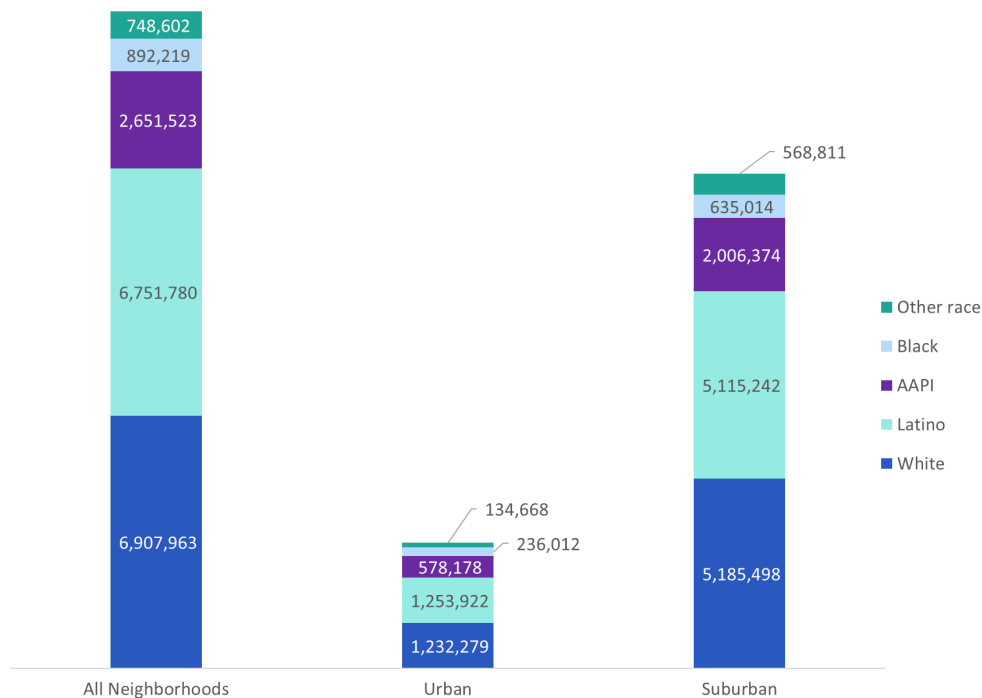


Figure 9 – Number of Working-age Adults by Race/Ethnicity and Residential Neighborhood Type in California (weighted)

Turning to income, as Table 4 shows, 16 percent of working-age adults live in a household earning less than \$25,000 per year, which is about the federal poverty income threshold for a household of four in 2017 (U.S. Department of Health & Human Services 2017)³⁰ (this is equivalent to about \$32,700 per year in 2025 dollars³¹). As I explain in Chapter 3, however, the federal poverty rate is not adapted to different states (let alone, different metropolitan regions), in spite of the extreme differences in cost of living. California has among the highest costs of living, with its residents ranking fourth most housing burdened among U.S. states (PolicyLink and USC Equity Research Institute 2024). Because of California’s relatively high cost of living, it is appropriate to double the federal poverty rate threshold to determine what proportion of the population is struggling financially in the California context.

In terms of what this means for income, a household of four living below twice the federal poverty level in 2017 earned less than \$49,200 per year (which is about \$64,360 per year in 2025 dollars). As Table 4 shows, about one third (34%) of working-age adults live in a household earning less than \$50,000 per year (which is about \$65,400 per year in 2025 dollars). While households, of course, vary by size and composition—indeed, the average number of people per household for working-age adults in California is 3.4—this provides a rough estimate of the proportion of working-age adults living below twice the federal poverty line. In urban areas, this proportion increases to 40 percent; in suburban areas, it drops to 33 percent—although this is still a relatively substantial proportion (one third) of working-age adults.

³⁰ The precise federal poverty income threshold for a family of four in 2017 was \$24,600 per year (U.S. Department of Health & Human Services 2017), which is about \$32,180 per year in 2025 dollars.

³¹ Recall that I have to use the 2017 NHTS, rather than the 2022 NHTS, because only the 2017 NHTS California Add-on sample provides the spatial data that I need to do my analysis. But to provide a sense of 2017 income thresholds and costs in today’s terms—particularly since the U.S. has experienced significant inflation since 2017—I used the U.S. Bureau of Labor Statistics CPI (Consumer Price Index) Calculator (https://www.bls.gov/data/inflation_calculator.htm) to convert 2017 dollars to 2025 dollars throughout this chapter.

On the other end of the income spectrum, about one fifth (19%) of working-age adults live in households earning more than \$150,000 per year (which is about \$196,200 per year in 2025 dollars). This proportion drops to 17 percent in urban areas and increases slightly to 20 percent in suburban areas, but these differences are fairly marginal. These income-related findings align with recent research that shows that people across the income spectrum—as well as simply a majority of people—live in suburbs (Schouten 2021).

Table 4 – Household-level Characteristics of Sample by Residential Neighborhood Type (weighted)

	All	Urban	Suburban
Household Income (%)			
Less than \$15,000	9%	12%	8%
\$15,000 to \$24,999	7%	9%	7%
\$25,000 to \$34,999	8%	9%	8%
\$35,000 to \$49,999	10%	10%	10%
\$50,000 to \$74,999	15%	14%	15%
\$75,000 to \$99,999	13%	13%	13%
\$100,000 to \$149,999	19%	17%	19%
\$150,000 to \$199,999	9%	7%	9%
\$200,000 or more	10%	10%	11%
Household Size (mean number of people)	3.4	2.7	3.5
Sample Size (unweighted)	23,015	2,170	17,903
Population Size (weighted sample)	17,952,087	3,435,403	13,510,939

Table 5 shows variation in household income by race/ethnicity: Across all residential neighborhood types, white and AAPI working-age adults tend to have higher household incomes than Latino and Black working-age adults. About one quarter of white and AAPI working-age adults (24 percent and 27 percent, respectively) live in households earning below twice the federal poverty threshold (about \$50,000 per year for a family of four [which is about 65,400 per year in 2025 dollars]). But nearly half of Latino and Black working-age adults (46 percent and

47 percent, respectively) live in such households. These trends are very similar for those in suburban neighborhoods, with racial/ethnic differences only slightly muted. Conversely, in urban areas, racial/ethnic differences are a bit more heightened (see Appendix B for charts on household income by race/ethnicity and residential neighborhood type).

Table 5 – Household Income by Race/Ethnicity of Working-Age Adults in California (weighted)

	White	Latino	AAPI	Black
Household Income (%)				
Less than \$15,000	6%	11%	8%	18%
\$15,000 to \$24,999	5%	10%	6%	12%
\$25,000 to \$34,999	6%	12%	5%	6%
\$35,000 to \$49,999	7%	13%	8%	11%
\$50,000 to \$74,999	13%	17%	13%	15%
\$75,000 to \$99,999	13%	13%	14%	14%
\$100,000 to \$149,999	23%	14%	20%	14%
\$150,000 to \$199,999	12%	5%	10%	6%
\$200,000 or more	15%	5%	15%	5%
Sample Size (unweighted)	14,748	3,666	2,772	688
Population Size (weighted sample)	6,920,690	6,752,966	2,651,777	891,466

In terms of immigration status, as Table 3 shows, nearly one third (29 percent) of working-age adults are immigrants, with a higher proportion (36 percent) in urban areas than in suburban ones (28 percent). But again, because a majority of people live in suburbs, much larger numbers of immigrants live in suburbs than in urban areas. This aligns with the body of scholarship pointing to suburbs as the “new” immigrant “gateways” as well as immigrants—in addition to low-income people and people of color—increasingly moving from central cities to the suburbs (Carrillo et al. 2016; Singer 2004; Singer et al. 2008; Walker 2018), particularly in Southern California (Marcelli 2004).

Finally, as also shown in Table 3, three-quarters of working-age adults in California are employed. The proportion employed is slightly higher in urban areas (79 percent) than in suburban ones (74 percent)—and across the board, of those who are employed, most (about 78 percent) work full-time.

Car Access and Use by Race/Ethnicity and Neighborhood Type

Research shows that automobile access is a key determinant of both physical and economic mobility (Blumenberg and Manville 2004; Blumenberg and Pierce 2014; Ong and Miller 2005; Taylor and Ong 1995). Therefore, I base my (quantitative) measurement of mobility on car access. Such access, as I explain in Chapter 3, is not simply a binary of whether or not someone has a car. For people living in households with cars, but with more adults than cars—what we call car-deficit households—they are often unable to use a car when they need one because it is being used by someone else (Blumenberg 2017). But, these individuals still have access to an automobile, sometimes, granting them more mobility than those who live in households with no car. And indeed, Blumenberg, Brown, and Schouten (2020) find that individuals living in zero-car and car-deficit households tend to have different individual/household characteristics as well as travel behavior.

I, therefore, examine three categories of car access by race/ethnicity and residential neighborhood type: 1) living in a zero-car household; 2) living in a car-deficit household (i.e., ratio of adults to cars is less than one); and 3) living in a fully-equipped household (i.e., ratio of adults to cars is greater than or equal to one). As Table 6 shows, based on the aforementioned research of the importance of car access to mobility, I consider those living in zero-car households to be the most, or severely, mobility constrained; those living in car-deficit

households to be mobility constrained, but not severely; and those living in fully-equipped households to be mobility enabled.

Table 6 – Level of Mobility by Level and Metric of Car Access

Level of Mobility	Level of Car Access	Metric
Severely constrained	Lives in a zero-car household	No household vehicle
Constrained	Lives in a car-deficit household	$0 < \text{Ratio of adults in the household to household vehicles} < 1$
Enabled	Lives in a fully-equipped household	Ratio of adults in the household to household vehicles is ≥ 1

Figure 10 shows the percentage of working-age adults living in a zero-car household by race/ethnicity and residential neighborhood type in California; in other words, those who experience the most severe constraints on their mobility.

Overall, only four percent of working-age adults live in zero-car households; this proportion increases to 10 percent in urban areas and drops to just two percent in suburban neighborhoods. This difference between urban and suburban is to be expected, as urban areas tend to have much more robust services and infrastructure that support traveling by alternative modes, mainly walking and public transit (Ewing and Cervero 2010). Indeed, because origins and destinations are closer together in urban areas than in suburban areas, walking, in particular, is more feasible, and so more frequent, in urban areas. And so those with lower levels of car access self-select into neighborhoods where they have access to such alternatives (Glaeser et al. 2008). On the flip side, those who have higher levels of car access may self-select into lower-density suburban areas, where there is less congestion and it is easier to both drive and store their

household vehicles. But also, people who move to / live in suburbs away from dense urban areas presumably know that they need a vehicle to access opportunities.

In terms of differences by race/ethnicity, across all neighborhoods, the proportions of white, Latino, and AAPI working-age adults living in a zero-car household hover between 3-4 percent; Black working-age adults, however, are much more likely to live in a zero-car household, with 10 percent doing so. When I examine differences by both race/ethnicity and residential neighborhood type, there is a similar pattern: In urban areas, 9-10 percent of white, Latino, and AAPI working-age adults live in a zero-car household, while nearly one quarter (23 percent) of Black working-age adults do. And in suburbs, while 1-3 percent of white, Latino, and AAPI working-age adults live in a zero-car household, five percent of Black working-age adults do. While this five percent may not seem like a very high proportion in suburbs, it is still 2-4 percentage points higher than other racial/ethnic groups.³² This means that Black working-age adults experience the most severe constraints on their mobility compared to those in any other racial/ethnic group.

³² Independent group z-tests (or proportion tests, in Stata) show that the differences in proportions of working-age adults living in a zero-car household by race/ethnicity and residential neighborhood type are statistically significant for white and Black working-age adults, but not for Latino or AAPI working-age adults (at the .01 or the .001 level).

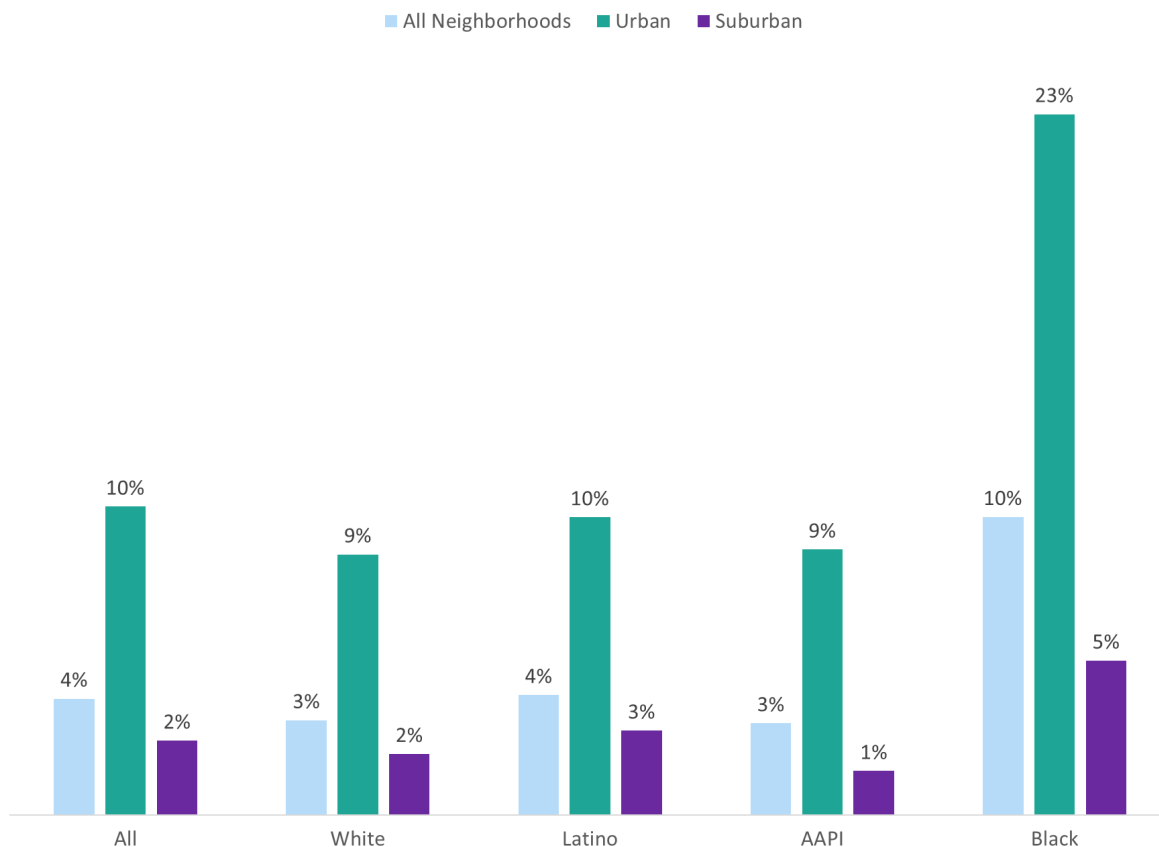


Figure 10 – Percent of Working-Age Adults Living in a Zero-Car Household Overall and by Race/Ethnicity and Residential Neighborhood Type in California (weighted)

Figure 11 shows the percentage of working-age adults living in a car-deficit household by race/ethnicity and residential neighborhood type in California; in other words, those who experience constraints on their mobility, but not as severe as those living in zero-car households. Overall, a much larger percentage of working-age adults live in a car-deficit household (28 percent) than in a zero-car household (4 percent, as Figure 10 shows). Similar to the spatial trend among those living in zero-car households, the proportion of working-age adults living in a car-deficit household increases to one third (33 percent) in urban areas and decreases to about a quarter (27 percent) in suburban areas.

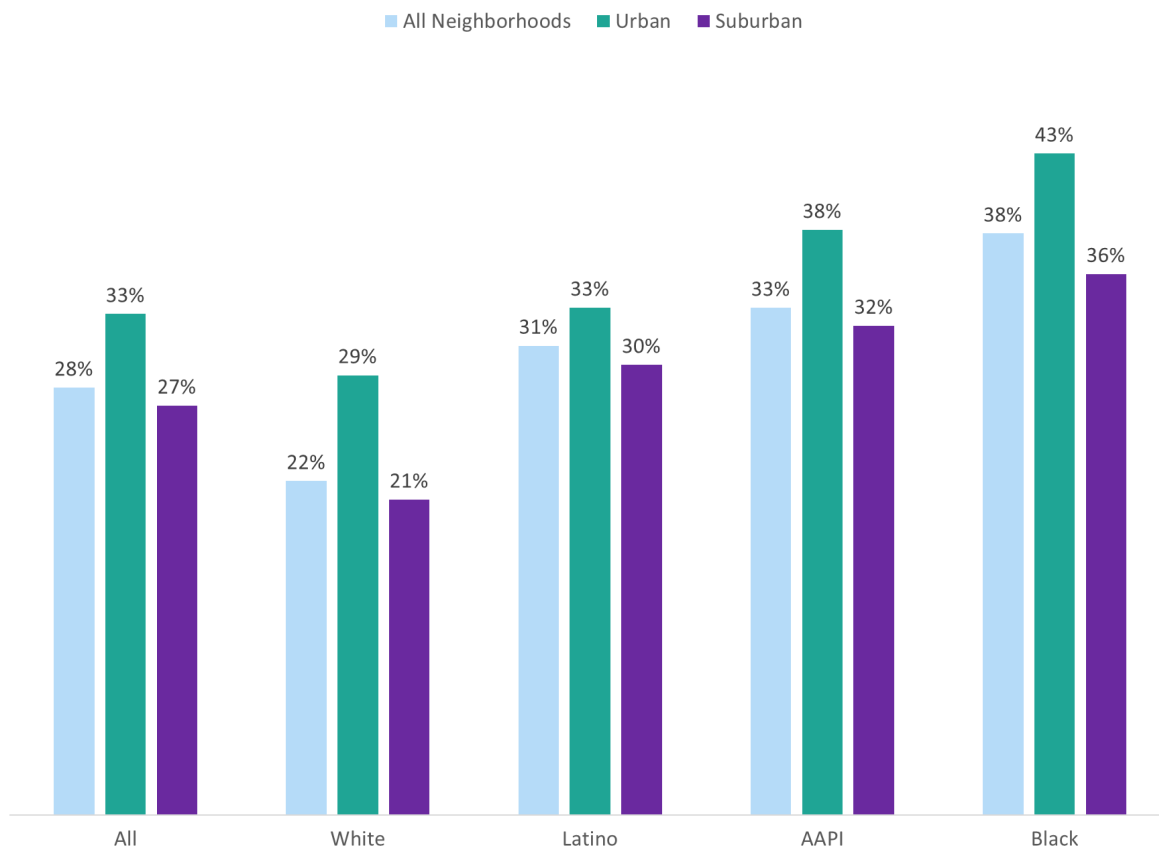


Figure 11 – Percent of Working-Age Adults Living in a Car-Deficit Household (i.e., 0 < ratio of adults to vehicles in household < 1) Overall and by Race/Ethnicity and Residential Neighborhood Type in California (weighted)

In terms of differences by race/ethnicity, similar to patterns of living in a zero-car household (Figure 10), Black working-age adults are the most likely to live in a car-deficit household (Figure 11). However, unlike patterns associated with living in a zero-car household (Figure 10), the other two groups of people of color—AAPI and Latino—are also more likely to live in a car-deficit household than white working-age adults (Figure 11). More precisely, while 22 percent of white working-age adults live in a car-deficit household, 38 percent of Black working-age adults, 33 percent of AAPI working-age adults, and 31 percent of Latino working-

age adults live in such a household.³³ Moreover, Figure 11 shows that such racial/ethnic disparities in living in a car-deficit household persist across residential neighborhood type. This means that it is not just working-age adults of color in urban areas, but also those in suburban neighborhoods, who disproportionately face constraints on their ability to get around as compared to white working-age adults.

Indeed, as Table 7 shows, white working-age adults are the only racial/ethnic group in which the mean vehicles per adult in the household is greater than one (1.04); for Latino working-age adults, it is 0.94; for AAPI working-age adults, it is 0.92; and for Black working-age adults, it is the lowest, at 0.81.³⁴ Moreover, white working-age adults are the only racial/ethnic group in the suburbs—not just overall—in which the mean vehicle per adult in the household is greater than one (Table 7).

Table 7 – Mean Number of Vehicles per Adult in Household by Race/Ethnicity and Residential Neighborhood Type of Working-Age Adults in California (weighted)

	All Neighborhoods	Urban	Suburban
<i>All Working-age Adults</i>	0.97	0.81	1.00
White	1.04	0.85	1.06
Latino	0.94	0.80	0.97
Asian American or Pacific Islander (AAPI)	0.92	0.80	0.95
Black	0.82	0.61	0.89

It makes sense, then, that white working-age adults are much more likely to live in fully-equipped households than others (since this is the inverse of living in a zero-car or a car-deficit

³³ Independent group z-tests (or proportion tests, in Stata) show that the differences in proportions of working-age adults living in a zero-car household by race/ethnicity and residential neighborhood type are statistically significant for all racial/ethnic groups (at the 0.05 level).

³⁴ Independent group t-tests show that the differences in mean vehicles per adult in a household by race/ethnicity and residential neighborhood type are all statistically significant (at the 0.001 level).

household). As Figure 12 shows, while 75 percent of white working-age adults live in fully-equipped households, this number drops to 65 percent of Latino working-age adults, to 64 percent of AAPI working-age adults, and to just 52 percent of Black working-age adults.

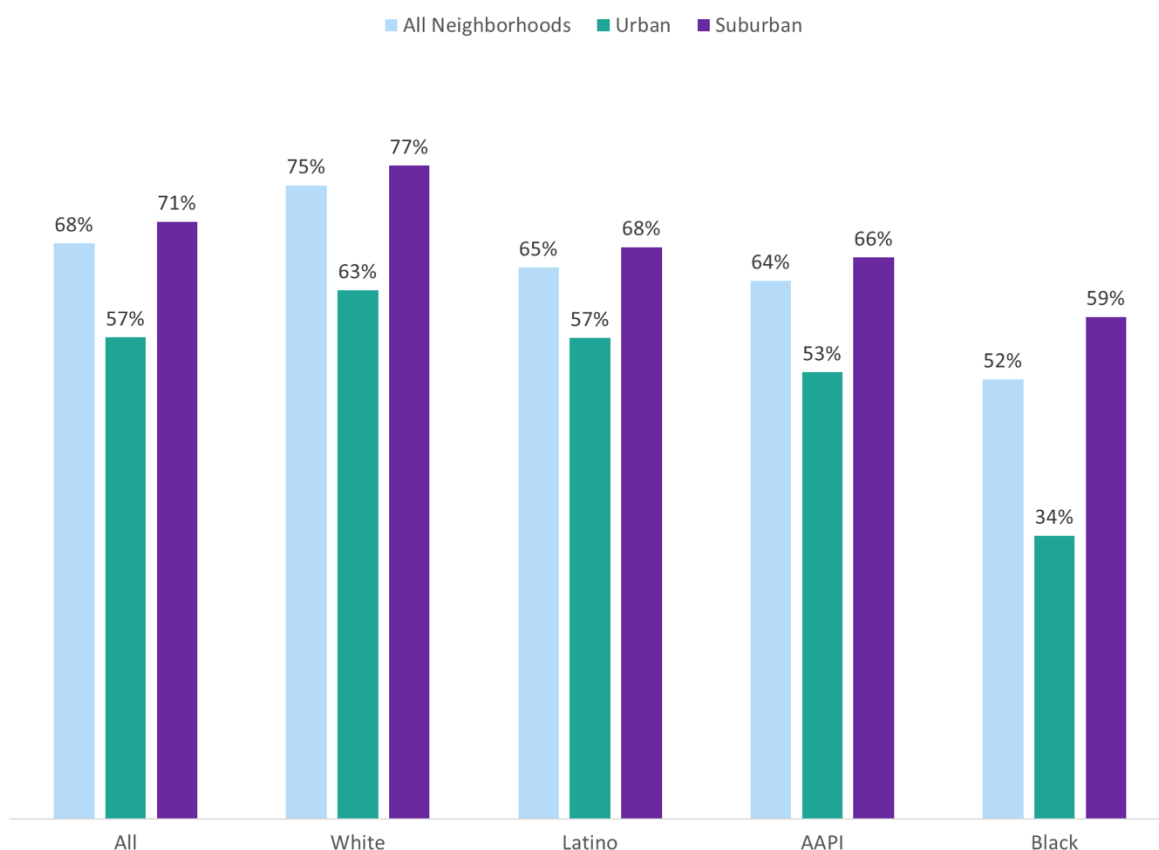


Figure 12 – Percent of Working-Age Adults Living in a Fully-Equipped Household (i.e., ratio of adults to vehicles in household ≥ 1) Overall and by Race/Ethnicity and Residential Neighborhood Type in California (weighted)

These differences are stark for those living in urban areas—but also exist for those living in suburban areas. More precisely, over three quarters (77 percent) of white working-age adults—but 68 percent of Latino working-age adults, 66 percent of AAPI working-age adults, and just 59 percent of Black working-age adults—live in fully-equipped households in California’s suburban neighborhoods. This means that, overall, white working-age adults are the most mobility-enabled racial/ethnic group and, to reiterate, Black working-age adults are the most severely mobility-

constrained group. These findings are consistent with prior research showing that Black households have the lowest rates of car ownership among racial/ethnic groups (Klein and Smart 2017).

How does level of car access—my metric of mobility (see Table 6)—translate into how working-age adults get around their activity spaces, or the areas they visit as part of their daily activities? Do we still see differences by race/ethnicity and neighborhood type? To investigate this question, I identified the mode that accounts for the most person miles traveled (PMT) in working-age adults’ daily activity spaces—what I call the “dominant mode.” Figure 13 shows the dominant mode by race/ethnicity across all neighborhood types and Figure 14 disaggregates the dominant mode by both race/ethnicity and neighborhood type.

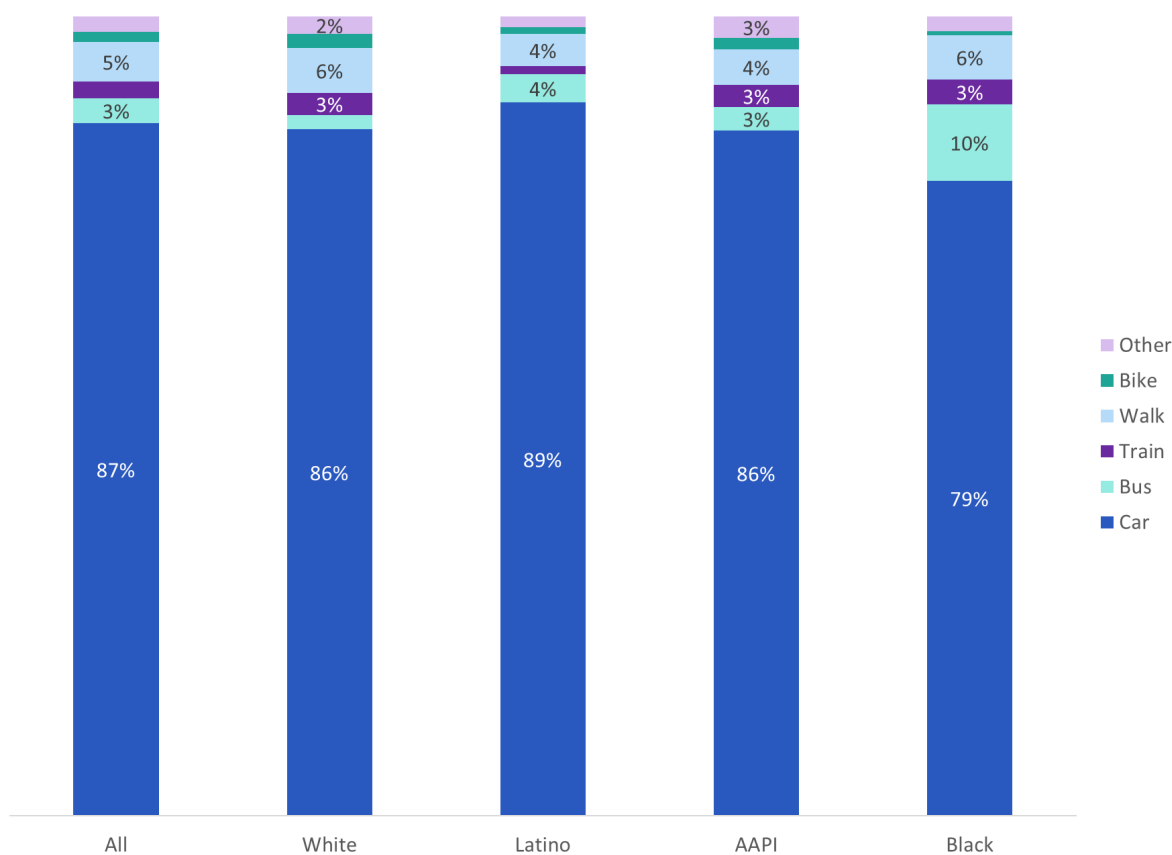


Figure 13 – Dominant Mode in Activity Spaces by Working-Age Adults' Race/Ethnicity in California (weighted)

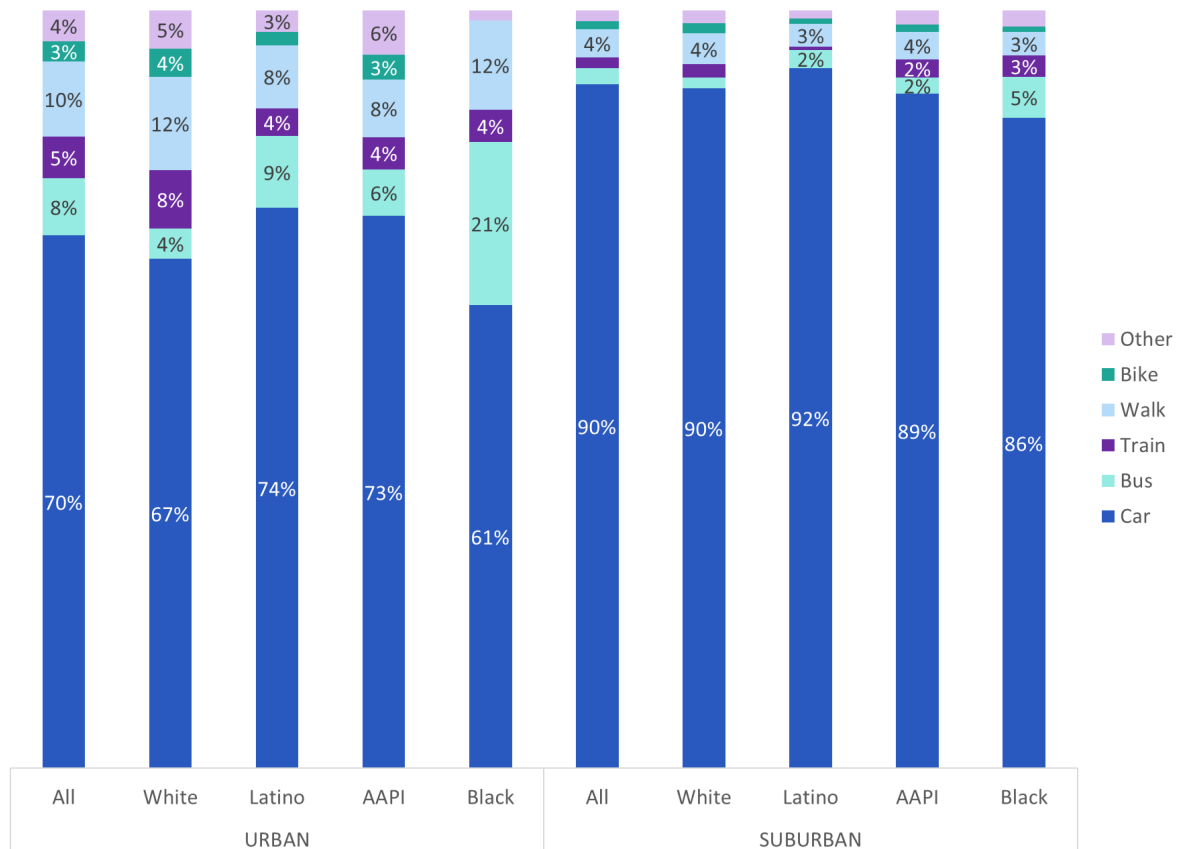


Figure 14 – Dominant Mode in Activity Spaces by Working-Age Adults' Race/Ethnicity and Residential Neighborhood Type in California (weighted)

Overall, as Figure 13 shows, 87 percent of working-age adults' dominant mode is the automobile. Not surprisingly, as Figure 14 shows, for those living in more transit-friendly and walkable urban neighborhoods, this number drops to 70 percent; for those living in the more autocentric suburbs, it jumps to 90 percent.

More surprising is that despite white working-age adults having the highest levels of car access—as they are most likely to live in a fully-equipped household (Figure 12) and their mean ratio of adults to cars in the household is highest (Table 7)—Figure 13 shows that a larger share of Latino working-age adults (89%) than white working-age adults (86%) use an automobile as their dominant mode within their activity spaces. Moreover, AAPI working-age adults use the

car at the same rate (86%) as white working-age adults. And in urban areas, AAPI working-age adults *and* Latino working-age adults use an automobile as their dominant mode at higher rates (74 percent and 73 percent, respectively) than white working-age adults (67 percent). In suburbs, these differences become much more marginal, resulting in white, Latino, and AAPI working-age adults using the car as their dominant mode at about the same rate (around 90 percent).

The fact that white working-age adults are more likely to live in a fully-equipped household yet use the automobile as their dominant mode at similar or even lower rates than Latino and AAPI working-age adults suggests that Latino and AAPI working-age adults use the car differently than their white counterparts. First, these findings suggest that Latino and AAPI working-age adults have to engage in more complex coordination and planning with others in their households about when they can use the household vehicle(s) than white working-age adults, who are more likely to have a vehicle available to them whenever they need or want it. Second, these findings perhaps confirm prior research showing higher rates of carpooling among people of color, particularly Latinos—and particularly those who are immigrants (Blumenberg and Smart 2014; Cline, Sparks, and Eschbach 2009).

In terms of Black working-age adults, Figure 13 shows that they use an automobile as their dominant mode at a much lower rate than other working-age adults. Figure 14 shows this to be the case across both urban and suburban areas—although, similar to above findings, the differences are much more marginal in suburbs. Further, as Figure 13 shows, Black working-age adults use the bus as their dominant mode at a much higher rate (10 percent) than others. This finding is not surprising, as much research has shown that, after controlling for other factors, Black individuals have higher rates of transit use compared to others (Giuliano 2003; Taylor and Ong 1995). As Figure 14 shows, this difference is most pronounced in urban areas, with over one

fifth (21 percent) of Black working-age adults using the bus as their dominant mode in their activity spaces. This difference also exists in suburbs, where overall transit usage is lower, but to a much lesser extent. These findings align with above findings on car access showing that Black working-age adults are less likely to live in a fully-equipped household than others (Figure 12).

Finally, it is noteworthy that walking is the second most common dominant mode (behind using an automobile) for all racial/ethnic groups except for Black working-age adults, for whom transit is the second most common dominant mode. Nonetheless, the rate of walking as the dominant mode is fairly consistent across all racial/ethnic groups, with larger proportions walking in urban areas (ranging from 8-12 percent) than in suburban neighborhoods (ranging from 3-4 percent), presumably for the reasons related to differences in the built environment and transportation infrastructure and services that I explained above (Ewing and Cervero 2010).

Racial-Spatial Isolation in Activity Spaces

In this section, I present descriptive statistics on my dependent variable of interest: racial-spatial isolation in activity spaces of working-age adults in California. As I detail in Chapter 3, building off of the work of Jones and Pebley (2014), I define racial-spatial isolation as generally not encountering racial/ethnic groups other than one's own in a geographic area. Because recent research suggests that people experience segregation across the multiple spaces that they traverse in their daily lives, not just in their residential neighborhoods (Athey et al. 2021; Cagney et al. 2020; Schafran 2018; Wang et al. 2018), I measure racial isolation in people's activity spaces instead of just in terms of where they live. As I explain in Chapter 3, I measure racial-spatial isolation using the isolation index, which shows the level of isolation experienced by the average member of a particular racial/ethnic group in a particular geographic area. The index is a binary

metric, meaning it measures the isolation of one racial/ethnic group relative to everyone else. I, therefore, calculated an isolation index for each of the four most populous racial/ethnic groups—white, Latino, AAPI, and Black—for activity spaces of working-age adults in California. The index ranges from zero to one; the higher the value, the more isolation the average member of the racial/ethnic group is likely to experience in an activity space.

Figure 15 shows the mean isolation index values for activity spaces of working-age adults in California. Recall that in terms of the isolation index, the higher the value, the more isolation the average member of the racial/ethnic group experiences in the activity space. To the left of the dotted line, the chart shows the mean isolation value for each racial/ethnic group across *all* activity spaces of working-age adults in California. Across all activity spaces, the average white person experiences the highest level of racial isolation (with an isolation value of 0.44)—meaning that white people, compared to everyone else, have the least exposure to or interactions with people of different racial/ethnic groups. Latino working-age adults experience similar levels of isolation (with an isolation value of 0.40), while AAPI and Black working-age adults experience far less isolation (with isolation values of 0.21 and 0.08, respectively). This means that, compared to white and Latino people, AAPI and Black people have more exposure to different racial/ethnic groups in their daily lives. This, of course, is tied to the fact that AAPI and Black people make up smaller shares of the population. Therefore, it is important to examine mean isolation values by race/ethnicity of working-age adults—not just overall—to understand if the average member of a racial/ethnic group tends to experience more isolation in activity spaces of people in their same racial/ethnic group.

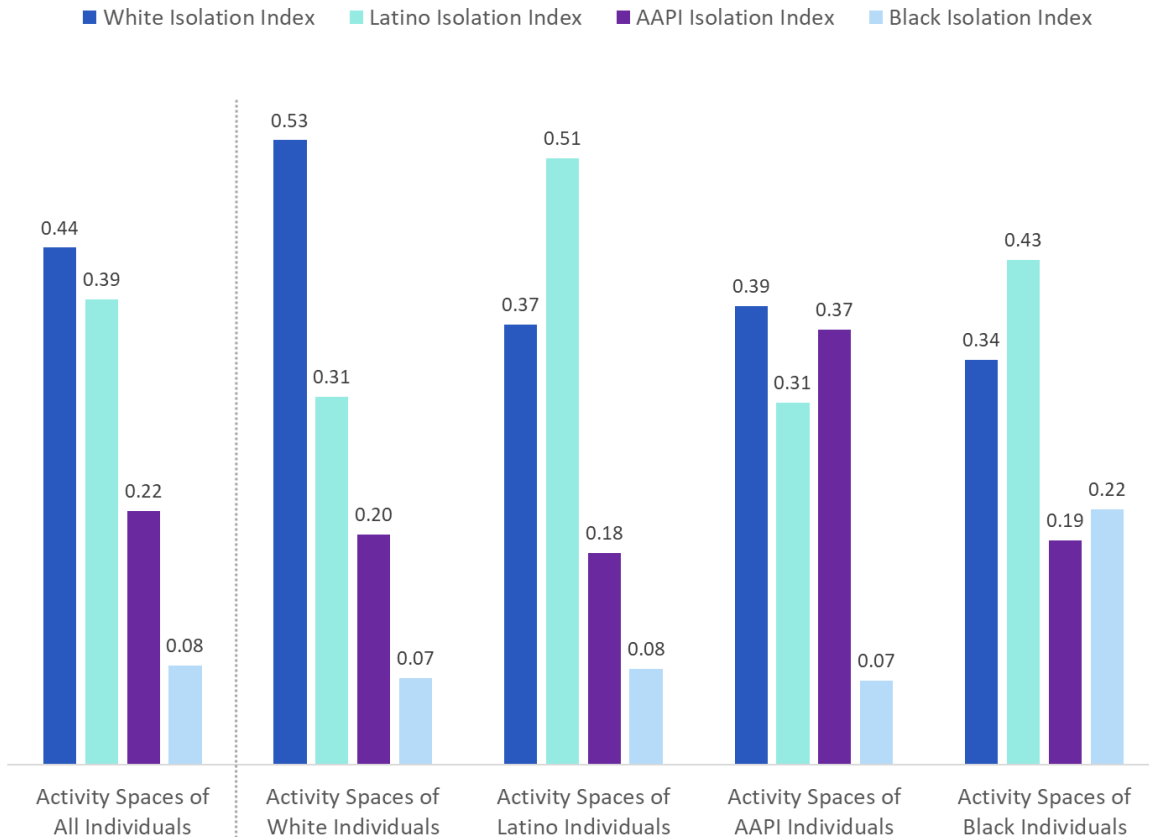


Figure 15 – Mean Isolation Index Values for Activity Spaces Overall and by Working-Age Adults' Race/Ethnicity in California (weighted)

As Figure 15 shows, this seems to be the case: The mean isolation values for working-age adults' activity spaces largely reflect their own racial/ethnic identities. In the activity spaces of white working-age adults, the white isolation value is the highest (0.53) compared to the white isolation values in the activity spaces of others. This means that the average white person is more likely to encounter other white people in the activity spaces of white working-age adults than in the activity spaces of others. Similarly, for activity spaces of Latino working-age adults, the Latino isolation value is the highest (0.51); for those of AAPI working-age adults, the AAPI isolation value is the highest (0.37); and for those of Black working-age adults, the Black isolation value is highest (0.22). And while the Black isolation value in Black working-age

adults' activity spaces may not appear absolutely high, it is important to note that it is *relatively* high, as the Black isolation value in others' activity spaces is 0.07 or 0.08. Again, this means that the average Black person is far more likely to encounter another Black person in the activity spaces of Black working-age adults than in others' activity spaces.

It is worth noting that Black individuals are the only group who are less isolated in their own activity spaces than those in all the other racial/ethnic groups (with one exception: white people are slightly more isolated than AAPI people in the activity spaces of AAPI individuals). This is because Black people make up a relatively small percentage of the population, even in places with relatively high percentages of Black people. In a recent study examining automobile debt by race/ethnicity at the neighborhood level in California, Blumenberg et al. (2024) classify borrowers by whether they reside in a Census tract in the top quintile of the share of residents of each of the following racial/ethnic groups: Asian, Black, Latino/a, and white. They do this because they find that there is much variation in the concentration of racial/ethnic groups in the top-quintile tracts. For instance, in the top-quintile Latino/a tracts, the mean percent Latino/a is almost 80 percent; in the top-quintile Black tracts, the mean percent Black is only 19 percent. And so, it makes sense the Black people encounter more people of other racial/ethnic groups in their neighborhoods—and in the case of this study, their activity spaces—than those in other racial/ethnic groups encounter in theirs.

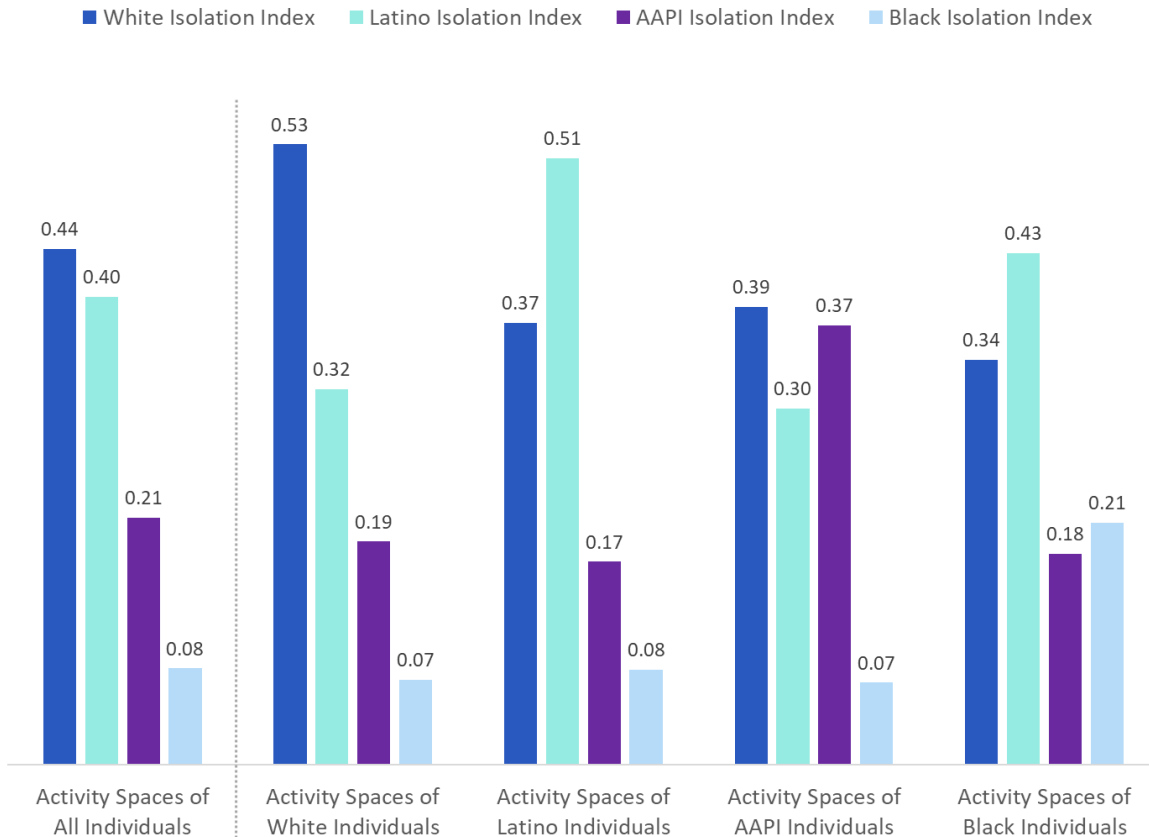


Figure 16 – Mean Isolation Index Values for Activity Spaces Overall and by Working-Age Adults' Race/Ethnicity in California Suburbs (weighted)

When I disaggregate the mean isolation index values by both race/ethnicity and residential neighborhood type of working-age adults, I observe extremely similar trends. Figure 16 shows the mean isolation values for activity spaces of working-age adults living in California suburbs, and Figure 17 shows the mean isolation values for those living in the state's urban areas. Like Figure 15, these charts show that the mean levels of racial isolation of working-age adults' activity spaces largely reflect their own racial/ethnic identities across both urban *and* suburban areas. This means that racial-spatial isolation is not just an urban phenomenon, but a suburban one as well.

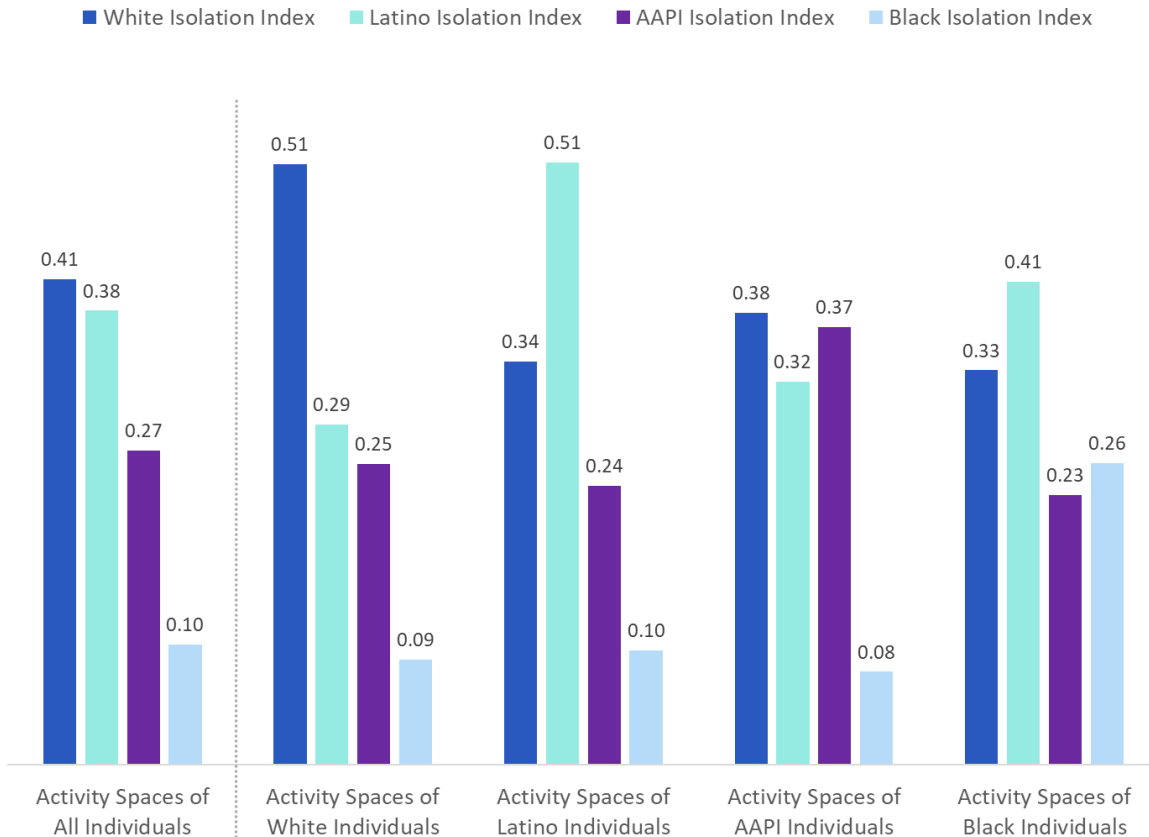


Figure 17 – Mean Isolation Index Values for Activity Spaces Overall and by Working-Age Adults' Race/Ethnicity in California Urban Areas (weighted)

These results are not surprising, as much of the racial residential segregation literature has shown similar trends: People are more likely to live next door to someone of their own race/ethnicity than someone of a different race/ethnicity. But by using travel survey and Census data, these findings show that racial isolation also exists in people's activity spaces. And by doing so, these findings align with recent empirical findings showing an increase in racial segregation in suburbs (De Lara 2018; Farrell 2016; Lichter et al. 2010, 2015, 2023; Schafran 2018; Schafran and Wegmann 2012).

The Effect of Car Access on Racial-Spatial Isolation

To understand the degree to which varying levels of mobility affect racial-spatial isolation in suburbs—the central research question driving this analysis—I developed regression models to predict the isolation index values of working-age adults’ activity spaces as a function of car access. Specifically, my regression models test the extent to which car access affects racial-spatial isolation in suburbs compared to urban areas—in which I hypothesize that car access has a bigger affect in suburbs than in urban areas.

As I detail in Chapter 3, I developed beta regression models, instead of linear regression models, as the outcome variable—the isolation index—is restricted to the interval (0,1) (Ferrari and Cribari-Neto 2004). However, beta regressions do not consider zero or one values. Therefore, if the outcome variable has a “non-negligible” number of zeros and/or ones, it is important to use a zero-or-one inflated beta regression model (Ospina and Ferrari 2012). Since almost no working-age adults’ activity spaces have a zero or one value for the white isolation index, I developed a beta regression to predict white isolation values. But since a “non-negligible” number of working-age adults’ activity spaces have zero values for the Latino, AAPI, and Black isolation indices—especially the latter two, as a result of AAPI and Black individuals making up a significantly lower shares of the population—I developed zero-inflated beta regression models to predict these three outcomes. (See Chapter 3 for a more detailed discussion of model forms.)

Table 8 presents the model results predicting white, Latino, AAPI, and Black isolation values for working-age adults’ activity spaces in California; Table 9 presents model results predicting isolation values for those in suburbs; and Table 10 presents model results predicting isolation values for those in urban areas. As I discussed in Chapter 3, the models control for

variables that might also affect the level of racial-spatial isolation in working-age adults' activity spaces, including individual characteristics (race/ethnicity, immigration status, employment status, and living in a low-income household [or not]) and residential neighborhood type.

Starting with the level of car access—the key independent variable of interest in this analysis—model results (in Table 8) show that, holding all else constant, living in a car-deficit household, as compared to living in a fully-equipped household, has a negative and statistically significant relationship with the level of white isolation in one's activity space. In other words, living in a fully-equipped household, compared to living in a car-deficit household, is associated with higher levels of white isolation. Or an even simpler way of interpreting it, being mobility enabled, compared to being mobility constrained, is associated with white isolation. And as Table 9 shows, this relationship is even stronger—in that it has a larger coefficient—in suburbs.³⁵ While we see a similar relationship in urban areas—except for living in zero-car household, which is positively associated with white isolation—neither is statistically significant at the 0.10 level (Table 10).

Why would being mobility-enabled increase white isolation in activity spaces, especially in the suburbs? Looking to the literature on the peripheralization of segregation might help explain these findings. As I detail in Chapters 1 and 2, recent research shows that most white suburbanites have predominantly white neighbors, “a pattern reinforced by white residential mobility” (Parisi et al. 2019:1). What Parisi et al. (2019) mean by this, and what they find, is white people tend to stay put in white suburbs, but tend to move out of more racially-diverse

³⁵ To further test the effect of car access on racial-spatial isolation in suburbs compared to urban areas, I included interaction terms between level of car access and neighborhood type in each of the four models in Table 8 (which includes all neighborhood types). However, the interaction terms were statistically insignificant.

places—and when they move, they chose predominantly white places with mostly white neighbors. Indeed, Carpio (2019) finds, historically, that in response to the increase of people of color in the Inland Empire suburbs, white households and power players worked to maintain the whiteness of their communities toward continuing to hoard wealth-building opportunities (like homeownership) and well-resourced public services (like schools and parks). Today, scholars find that whites continue to do this largely by carving out newly-exclusive suburban enclaves in the farther reaches of suburbs, often fortified by neighborhood “watchdogs” and gated communities (De Lara 2018; Kirkpatrick and Gallagher 2013). In this context, the finding that living in a fully-equipped household is associated with white isolation suggests that car access plays a role in both reaching and maintaining such white space, particularly in the suburbs.

Table 8 - Model Results: Isolation indices as functions of car access, residential neighborhood type, and other relevant individual characteristics of working-age adults in California (weighted)

	<i>Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>
	White Isolation Index	Latino Isolation Index	AAPI Isolation Index	Black Isolation Index
<i>Mobility</i>				
Lives in fully-equipped household	<i>reference</i>	<i>reference</i>	<i>reference</i>	<i>reference</i>
Lives in car-deficit household	-0.11*	0.03	0.05	0.03
Lives in zero-car household	-0.04	-0.09	0.04	0.01
<i>Individual Characteristics</i>				
Race/ethnicity				
White	<i>reference</i>	-0.70***	-0.76***	-0.91***
Latino	-0.60***	<i>reference</i>	-0.82***	-0.85***
AAPI	-0.47***	-0.81***	<i>reference</i>	-0.91***
Black	-0.72***	-0.31***	-0.76***	<i>reference</i>
Other race	-0.17***	-0.62***	-0.67***	-0.76***
Lives in Low-Income Household	-0.15***	0.34***	-0.32***	0.04
Immigrant	-0.09**	0.11***	0.04	-0.06*
Worker	0.09***	-0.04 [†]	0.06**	0.03
<i>Residential Neighborhood Type</i>				
Urban	<i>reference</i>	<i>reference</i>	<i>reference</i>	<i>reference</i>
Suburban	0.09**	0.06 [†]	-0.31***	-0.16***
Non-Urban	0.48***	0.02	-0.83***	-0.45***
<i>Constant</i>	-0.00	-0.16**	-0.32***	-1.38***
<i>N</i>	23,015			
<i>Weighted N</i>	17,952,087			

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [†] $p < 0.10$

Table 9 – Model Results: Isolation indices as functions of car access and other characteristics for working-age adults living in California suburbs (weighted)

	<i>Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>
	White Isolation Index	Latino Isolation Index	AAPI Isolation Index	Black Isolation Index
<i>Mobility</i>				
Lives in fully-equipped household	<i>reference</i>	<i>reference</i>	<i>reference</i>	<i>reference</i>
Lives in car-deficit household	-0.13*	0.07 [†]	0.02	0.05
Lives in zero-car household	-0.09	0.14	-0.20*	0.11
<i>Individual Characteristics</i>				
Race/ethnicity				
White	<i>reference</i>	-0.70***	-0.80***	-0.87***
Latino	-0.59***	<i>reference</i>	-0.88***	-0.80***
AAPI	-0.49***	-0.82***	<i>reference</i>	-0.86***
Black	-0.75***	-0.30***	-0.80***	<i>reference</i>
Other race	-0.17**	-0.63***	-0.73***	-0.74***
Lives in Low-Income Household	-0.13**	0.31***	-0.30***	0.02
Immigrant	-0.07 [†]	0.06 [†]	0.09**	-0.04
Worker	0.04 [†]	0.01	0.06*	0.03
<i>Constant</i>	<i>0.12***</i>	<i>-0.13**</i>	<i>-0.60***</i>	<i>-1.60***</i>
<i>N</i>	<i>17,903</i>	-	-	-
<i>Weighted N</i>	<i>13,510,939</i>	-	-	-

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [†] $p < 0.10$

Table 10 – Model Results: Isolation indices as functions of car access and other characteristics for working-age adults living in California urban areas (weighted)

	<i>Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>	<i>Zero-Inflated Beta Regression</i>
	White Isolation Index	Latino Isolation Index	AAPI Isolation Index	Black Isolation Index
<i>Mobility</i>				
Lives in fully-equipped household	<i>reference</i>	<i>reference</i>	<i>reference</i>	<i>reference</i>
Lives in car-deficit household	-0.11	-0.10	-0.03	0.12*
Lives in zero-car household	0.04	-0.35**	-0.12	0.29***
<i>Individual Characteristics</i>				
Race/ethnicity				
White	<i>reference</i>	-0.67***	-1.02***	-0.60***
Latino	-0.64***	<i>reference</i>	-0.98***	-0.61***
AAPI	-0.64***	-0.35*	<i>reference</i>	-0.68***
Black	-0.41***	-0.78***	-1.09***	<i>reference</i>
Other race	-0.22**	-0.62***	-0.84***	-0.45***
Lives in Low-Income Household	-0.26**	0.44***	0.15*	-0.34***
Immigrant	-0.11	0.26***	-0.10**	-0.14*
Worker	0.35***	-0.23***	0.07	0.05
<i>Constant</i>	-0.17*	-0.03	-1.25***	-0.44***
<i>N</i>	2,170			
<i>Weighted N</i>	3,435,403			

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.10$

The results look different in terms of the association between car access and levels of spatial isolation of people of color. Across all neighborhoods (Table 8) and in suburbs specifically (Table 9), living in a car-deficit household, compared to living in a fully-equipped household, is associated with Latino, AAPI, and Black isolation in one's activity space. However, these results are largely statistically insignificant.

Particularly noteworthy, though, is that for those in suburbs, living in a car-deficit household, as compared to living in a fully-equipped household, has a positive and statistically significant (at the $p < 0.10$ level) association with Latino isolation in activity spaces. This finding aligns with that of Jones and Pebley (2014), who find a positive and statistically significant correlation between living in a household with a person vehicle and the mean percent Latino of activity spaces in Los Angeles County, similarly controlling for other factors. Once again turning to the peripheralization of segregation literature to understand these results, scholars find that, in California specifically, the aforementioned efforts to maintain racially-exclusive (read, white) space in suburbs has, largely, relegated Latinx people to “less desirable” areas in suburbs (Carpio 2019). Such areas, for example, include those adjacent to toxic logistics infrastructure (like warehouses and railways) in the Inland Empire or flood-risk zones in the predominantly Mexican-American suburb of Alviso near San Jose (De Lara 2018; Kirkpatrick and Gallagher 2013). In this context, the finding that living in a car-deficit household is associated with Latino isolation suggests that a lack of car access plays a role in containing Latinos in specific spaces, via constraints on mobility, particularly in the suburbs.

Turning to the effect of one’s race/ethnicity on the level of racial-spatial isolation in their activity spaces, the previous section showed that the levels of racial isolation of working-age adults’ activity spaces largely reflect their own racial/ethnic identities (Figure 15 - Figure 17). Reinforcing these descriptive findings, the models overwhelmingly reveal a positive and statistically significant relationship between working-age adults’ race/ethnicity and the isolation value of that same racial/ethnic group in their activity spaces. In other words, similar to what Jones and Pebley (2014) find in their predictions of racial/ethnic characteristics of activity spaces in Los Angeles, I find that it is more likely that people encounter those of their own

race/ethnicity than others in their activity spaces—in both urban and suburban areas—than in others’ activity spaces.

What about the role of income? First, it is important to note that the above findings about the effect of car access on racial-spatial isolation holds constant for income—meaning, one should interpret the above findings as having to do with car access regardless of income level. Nonetheless, living in a low-income household,³⁶ independently, also plays a role in racial-spatial isolation. Specifically, living in a low-income household has a negative and statistically significant relationship with both white and AAPI isolation. Conversely, living in a low-income household is positively related to Latino and Black isolation (although it is not statistically significant at the 0.05 level in the Black isolation model, perhaps due to the small sample of Black working-age adults). These findings hold across all neighborhood types (Table 8) as well as in suburbs, specifically (Table 9). This is unsurprising since, per the descriptive findings above, white and AAPI working-age adults tend to have higher household incomes than Latino and Black working-age adults in both urban and suburban areas (see Table 5).³⁷

Finally, being an immigrant is negatively associated with white and Black isolation but positively associated with Latino and AAPI isolation overall, and in suburbs specifically (although it is statistically insignificant in the AAPI isolation model across all neighborhoods and the Black isolation model in suburbs). These findings, perhaps, speak to two phenomena: 1) A majority of immigrants to California are Latino, Asian, or Pacific Islander (PolicyLink and

³⁶ As I explain in Chapter 3, I define a low-income household as earning less than \$50,000 per year [about 65,400 per year in 2025 dollars] to align with living below twice the federal poverty threshold in 2017.

³⁷ While Table 5 certainly shows patterns with regard race/ethnicity and income, the highest correlation between the binary variable of living in a low-income household (or not) and the race/ethnicity of an individual is for Latino at 0.113. Therefore, I am not concerned about problems associated with multicollinearity in my regression models, which include both variables.

USC Equity Research Institute 2020); and 2) Largely due to community and familial connections, Latino and AAPI immigrants are moving to suburbs, and particularly certain areas of suburbs, creating what scholars have termed “ethnoburbs,” or a suburban area with a high concentration of a specific ethnic group (Kataure and Walton-Roberts 2015; Li 1999).

Discussion

In this chapter, I presented the results of my quantitative analysis testing my hypothesis that constraints on the mobility of people of color contribute to racial-spatial isolation in increasingly segregated suburbs. This matters because spatial isolation diminishes spatial access to resources and opportunities. As I have so far conjectured, if people of color living in transit-rich cities face issues of spatial isolation—as much of the transportation equity research suggests—then this presumably becomes an even bigger problem for those living in more autocentric suburbs with weaker transportation safety nets for those with limited or no access to an automobile.

My analysis shows that racial/ethnic disparities exist in working-age adults’ car access, and so mobility—and not just in California’s urban areas. White working-age adults are far more likely to live in a fully-equipped household in both urban areas (63 percent) and suburbs (77 percent) as compared to Latino, AAPI, and Black working-age adults. Indeed, white working-age adults are the only racial/ethnic group in which the mean number of vehicles per adult in the household, in both urban areas and suburbs, is greater than (or equal to) one.

While Latino, AAPI, and Black working-age all have lower levels of car access, and so more mobility constraints, than white working-age adults, it is important to note that Black working-age adults have particularly low levels of car access. In urban areas, only 34 percent of

Black working-age adults live in a fully-equipped household, and in more autocentric suburbs, only 59 percent live in such a household. Moreover, Black working-age adults have much higher rates than everyone else of living in a zero-car household—23 percent in urban areas and five percent in suburban areas—which severely restricts mobility. In addition to aligning with previous research on this topic (Klein and Smart 2017; Taylor and Ong 1995), this finding speaks to Brown’s concept of arrested mobility (2025)—or the ways that Black people are deprived freedom of movement through structural disinvestment and over-policing in their communities.

Turning to the other key variable in this analysis—racial-spatial isolation in working-age adults’ activity spaces—I find that across urban and suburban areas, mean levels of racial isolation largely reflect working-age adults’ own racial/ethnic identities. And indeed, similar to Jones and Pebley (2014), my regression results show extremely strong relationships between one’s own race/ethnicity and the level of racial isolation in their activity spaces. But while they examine just Los Angeles County, my results extend this conclusion to those living in both urban and suburban areas across the entire state. As Jones and Pebley (2014:727) write: “Our results suggest that most people experience substantial segregation across the range of spaces in their daily lives, not just at home.” In other words, while we know racial residential segregation exists—across regions as well as within suburbs (Lichter et al. 2015, 2023)—my findings show that racial segregation exists within people’s spheres of circulation, as well.

Finally, and most importantly in terms of answering my central research question, my regression results reveal relationships between car access and levels of racial-spatial isolation. Indeed, I find a positive relationship between living in a car-deficit household and Latino isolation. To understand these results, I draw on frameworks that conceptualize the

“resegregation” of metropolitan regions, particularly in California suburbs (Carpio 2019; De Lara 2018; Schafran 2018). In so doing, I understand my model results to suggest that mobility constraints contribute to processes of racial containment—which confines people of color to “less desirable” areas, diminishing spatial access to opportunities and resources. This, of course, is particularly dire for those living in suburbs, which are dispersed and extremely difficult to traverse without access to a car. But my models show an even stronger relationship between living in a fully-equipped household and white isolation in suburbs. Drawing on the aforementioned racial-spatial frameworks—as well as empirical evidence that white suburbanites move to maintain mostly white neighbors (Parisi et al. 2019)—my model results suggest that being mobility enabled via car access contributes to processes of racial exclusion, which maintains white (suburban) space.

Chapter 5: A Multitude of Mobility Constraints Facing Low-Income People of Color in Suburbs

The quantitative analysis in the previous chapter shows that immobility—or, specifically, a lack of car access—is associated with racial-spatial isolation in California suburbs. But how does the relationship between mobility and racial-spatial isolation in suburbs operate, and why does it matter? Before I can answer these questions, it is critical to understand what constitutes immobility in suburbs—including but also beyond a lack of car access—and how it shapes people’s daily lives. To do so, I draw on data from in-depth interviews with 30 low-income people of color living in economically-distressed suburbs in Southern California’s Inland Empire (see Chapter 3 for a detailed description of this project’s qualitative data and methodology). In this chapter, I detail the multitude of mobility constraints—which create a variety of pathways to immobility—facing low-income suburbanites of color.

While there is no clear “starting point” in describing and analyzing mobility constraints—as people experience different circumstances at various points in their lives—I begin by illuminating both the importance and instability of car access among interviewees. Automobiles play a critical role in enhancing mobility in suburbs, but unstable car access leads many to seek rides from others, rely on public transportation, resort to walking, or forgo travel altogether—all of which significantly restrict freedom of movement in and across dispersed, autocentric suburbs.

The Importance—Yet Instability—of Car Access

Car access is commonly defined as living in a zero-car household, living in a car-deficit household, or living a fully-equipped household (Blumenberg et al. 2020). Indeed, this is how I defined and measured car access in my quantitative analysis in the previous chapter. To low-

income suburbanites of color, however, car access is more complicated and nuanced. In short, such access is not just about owning a car or living in a household in which there is at least one car per adult; rather, it means being able to use a car when one needs to, which can include sharing a household vehicle with someone else—and often involves carpooling. However, some interviewees report feeling that even though they share a car with someone else in the household, it is not available to them most of the time. Interview data highlight that car access can take many forms. In this analysis, I define car access based on if the interviewee thought they had it, regardless of whether they had exclusive access or shared access to a household vehicle.

Aligning with previous research (Blumenberg and Pierce 2014; Ong and Miller 2005; Taylor and Ong 1995), interviewees describe car access, even if it means sharing a car with someone else, as a key mechanism to enhance their freedom of movement (i.e., their mobility)—but especially in dispersed suburbs in which origins and destinations are typically far apart from one another and public transit is sparse. While most interviewees (80%) have car access, I find that for low-income people of color living in Southern California suburbs, such access—even in its more expansive sense—is unstable. Building on previous research on “the ephemeral car” among low-income households, immigrants, and people of color (Klein, Basu, and Smart 2023b; Klein and Smart 2017), I find that this notion also applies to those in the suburbs. As interviewees described to me, it is common to transition into and out of having access to an automobile at different points in their lives, depending on their circumstances and unexpected events, such as losing a job or experiencing health problems. Many interviewees, therefore, were able to reflect on experiences and outcomes before and after having—or losing—car access. And so, they not only shed light on how car access enables mobility, but the ways it removes, or at least loosens, constraints on mobility, particularly in the suburbs. Moreover, since about one half

of interviewees moved to the suburbs from other places—due primarily to affordable housing opportunities and/or familial connections in the area (as I explain in the next this chapter)—they could also describe their transportation experiences in their suburban environments compared to other types of places.

For example, a 29-year-old man recently moved into an affordable (i.e., subsidized) housing development with his partner and daughter in Pomona. Before he and his family secured a subsidized unit, they were using almost all their resources to pay for motel rooms—and so they could not even imagine getting a car: “I wasn't even saving money. It's just like I knew the money I was getting wasn't going equal up to [a car].” But at one of the motels, in the laundry room, he saw a flyer to apply to live in an affordable housing development nearby. Fortunately, they secured a unit, through which they were able to start saving on housing costs. Additionally, because he and his partner provide full-time care for their daughter with autism, they started receiving monthly benefits through the Social Security Administration’s program Supplemental Security Income.³⁸ With the additional resources, he explained, they were able to finally purchase a car, which he found for sale on Instagram.

It is noteworthy that the first thing he purchased with his newfound resources was an automobile. Indeed, previous research has shown that car-related purchases tend to be among the most popular for those who receive refunds through the Earned Income Tax Credit program (Mendenhall et al. 2012; Smeeding, Phillips, and O’Connor 2000). He made this choice because before they had a car, he was dependent on the bus and walking—modes on which I elaborate

³⁸ The Supplemental Security Income program provides monthly support for lower-income families who provide care for their children with developmental and behavioral disabilities (Marvin 2023).

extensively below—and he described how a car increased his and his family’s independence and freedom of movement:

“I mean it is just way easier. You can just wake up, get in your car, and just go to wherever you need to go to and just get back [on] time. You don't got to get back late. You don't got to worry about, ‘Oh, I got to call to see what time the bus comes.’...So it’s a relief....it's way better. Way easier too...I can handle more stuff within a certain amount of time. As for a bus, you waiting on it...that was rough, getting around, before I had a car....grocery was the hardest....I had to carry my backpack, put the groceries on my back.”

Not only is this interviewee able to have more control over when he and his family travel—as well as accomplish more in a shorter amount of time—but the car also significantly expanded where they can travel, especially since his daughter with autism cannot walk far:

“Right when we got the car though, I mean we was going to L.A. almost every day, driving, taking my daughter out, going to little restaurants and stuff, church and stuff...the park, take her, run around....so she goes more. And also we have a wagon that we carry in the trunk.”

He also talked about the ability to now see family—specifically his mom and aunt—living about 50 miles northeast in the San Bernardino County town of Victorville.

This interviewee’s experience epitomizes the benefits that interviewees, and prior research, associate with automobile access: increased freedom of movement, decreased travel time, expanded geographic reach, as well as eased travel with children (Pan et al. 2023); recall that nearly three quarters of my interviewees are parents, and additionally, some are grandparents or siblings who provide care for grandchildren or younger siblings, respectively. For example, a 33-year-old mother of two living in affordable housing in Riverside said:

“...there was a time I didn't have a car, and I had to get on the bus, which was kind of hard because at that point, you're already used to having a car and you got the kids. So, I got to bring the stroller, the baby, her bag, my purse, and then the other kid...”

Her time without a car illuminated its importance, especially with respect to traveling with her children.

Additionally, a majority of interviewees with car access described the experience of driving in and around their suburban environments with words like: “easy,” “fine,” “smooth,” “calm,” “pleasant,” and “peaceful.” This is a notable distinction from those living in more urban areas, who often report driving in dense, congested environments as an extremely stressful experience. Some interviewees who moved to the Inland Empire from denser urban places like Long Beach describe their former residential locations as having much heavier local traffic, which made driving a more stressful experience there than in their current residential locations and activity spaces in the suburbs.

In spite of the benefits and relative ease of driving, however, access to an automobile for low-income people of color in suburbs, similar to those in cities, is far from permanent. At the root of such instability, of course, is cost—which Pan et al. (2023) similarly conclude in their analysis of transportation challenges facing low-income residents in the largely suburban Contra Costa County in the San Francisco Bay Area. Just as quickly as the aforementioned 29-year-old man living in affordable housing gained the resources to purchase a car, others lose such resources, and so car access. Among interviewees, this includes having insufficient funds to keep up with car payments after losing a job or to purchase a new car when the other is “totaled” (i.e., designated as a total loss) after a car accident. For example, a 29-year-old mother of five living in Riverside lost her job as a manager at a fast-food restaurant when she became pregnant with her youngest (who is now two). After her partner also lost his construction job, they could not afford to make their car payments, and the next month, “[the loan company] came and they repo'ed it.” She reminisced about the mobility and opportunities a car had afforded them:

“...we were doing really good. Job, a car. We were moving up. We were doing things. We were able to go out, travel different cities, get a motel room. Those dreams that we wanted to start doing with them, start going to do little adventures with them and stuff. Take my son to the zoo. He loves animals and dinosaurs, reptiles. He literally, at the age of three, could name all the big dinosaurs.”

Devastatingly, she and her partner are now unhoused, and their children are in foster care; they see their children once a week, on Saturday mornings at a local park in Riverside.

Another interviewee, a 27-year-old woman living in a mobile home park in Jurupa Valley (just west of the larger Inland Empire city of Riverside), got in a car accident on her way to her cashier checking job in the nearby, more affluent suburb of Upland. The accident destroyed her car, and she did not immediately have the resources to purchase a new vehicle. Moreover, there are simply no public transportation options between the two suburbs, which are about 15 miles apart (a major source of mobility constraints that I detail at length later in this chapter). She felt that she had no choice but to start using ridehail services, mostly Lyft, to get to work. But because she had morning shifts, she frequently had to travel during periods of surge pricing—times of the day in which ridehail prices rise due to higher demand—and so she was paying nearly \$300-\$400 per week. And so, she “was spending more on trying to get to work than what I was making at work. So, I couldn't, I had to let [the job] go.” And without “the proper income,” she explained, getting a new car is completely out of the question.

But losing car access is not just about losing a car: Even for those who can afford to purchase a car, and continue making payments to keep possession of the car, many of my interviewees reported that they often lack resources to operate the car, particularly in the form of purchasing gas and/or paying for both routine and unexpected maintenance, confirming prior research findings (Brown 2017; Klein and Smart 2017). Indeed, not being able to use a car is a more common scenario than losing a car or not being able to afford to purchase one in the first

place. But not being able to afford to *use* the car imposes major mobility constraints by limiting the places people go, arriving reliably when they do go, or leading many to forgo trips altogether.

A 64-year-old man living with his wife in an apartment in Pomona—an apartment which they have rented for 25 years—explained that they share one car and only drive it to fulfill “basic needs,” such as doctor’s appointments. “If I ain’t got to go nowhere to use extra gas, I’m not.” When I asked directly about any constraints on his mobility, he said none, “except for distance” related to gas consumption.

The 29-year-old mother of five who is currently unhoused recalled, when she had a car, having to choose between paying for gas and fulfilling other basic needs: “I had \$100 and I had a debate between gas and [my daughter’s] birth certificate and getting a meal for that.” The reason she needed her daughter’s birth certificate was to become eligible to be placed on the waitlist for affordable housing in Riverside County, which requires copies of birth certificates for all children who will live in the unit—but birth certificates cost money.³⁹

Even for those with slightly more resources, such as a 32-year-old woman living in Riverside with a full-time job at a third-party logistics company in a nearby suburb to which she drives: “...gas is everything. Everyday issue.” Specifically, she said: “...200 bucks every two weeks, a full tank. If I’m just going to work and coming back home, no side trips, will last me all week.” Since her rent recently increased, she often foregoes trips to avoid having to purchase more gas, including to the dentist, the gym, and other activities: “A lot of the things that make me happy, I’ve had to cut.” Likewise, a 44-year-old man living in Pomona said that since gas has

³⁹ In Los Angeles County, where this interviewee’s daughter was born, it costs \$32 to obtain a birth certificate. See the L.A. County Registrar-Recorder / County Clerk website: <https://www.lavote.gov/home/records/birth-records/birth-records-request/online-request>.

gone up in price, he and his family no longer travel to Los Angeles: “We used to go to markets, a restaurant called Los Cinco Puntos, and the parks I like there.” In short, due to the costs of operating an automobile, for low-income suburbanites of color, there is essentially no “extra” or excess driving.

In addition to limiting their travel, many interviewees with car access use other modes—namely, the bus and walking—as cheaper alternatives to driving. Before turning to these modes—and the significant constraints they impose on people’s mobility in and across suburbs—I close this section with yet another common alternative to driving oneself: getting rides from others.

Because cars enhance mobility to such a significant extent—especially in dispersed suburban environments in which transit service is far more sparse than in urban areas—when people lose automobile access, they tend to ask for rides from those with car access before turning to other modes, which Pan et al. (2023) also find. As a 53-year-old man living in Ontario explained: “...most of the people that I know, it's mostly, mostly driving car. Whether it's from a ride or it's from their own personal car....For us, it's more practical. It's less spending time waiting for the bus.”

For instance, after a 62-year-old mother of seven living in Pomona started experiencing chronic health issues related to brain tumors, she could no longer drive—and she also lost her warehouse job; indeed, health problems that inhibit the ability to drive and/or lead to job loss are another recurring reason interviewees lose car access. She explained that, at the time of our interview in late July, her youngest daughter was on summer break from high school, so her daughter could drive her wherever and whenever she needed—”but when school starts, by six in

the morning, I'll be alone until four in the afternoon." Only then, when there is no one home to give her a ride, will she take public transportation.

Building on prior research (Blumenberg and Smart 2014), I find carpooling—or more precisely, getting or giving rides—to be particularly common practice among immigrant suburbanites. A 53-year-old interviewee, whose family moved to Ontario from Mexico when he was six, explained that a large part of his daily travel involves giving rides to his family members, who live just a few blocks away:

"...my mom and dad don't drive...they never learned to drive...so I've been driving my dad around since I was 14 years old....pretty much they depend on their kids to take them wherever they need to go...and the neighbors sometimes...We take them to the doctor's appointments, to stores when they want to get something."

Similarly, a 32-year-old woman living with her father, child, and grandmother in Pomona described regularly chauffeuring her grandmother, an immigrant from Mexico:

"She's just scared to drive....I'm the one commuting her right now that my dad has changed his schedule...I give her rides to her doctor's office, if she needs to go run errands to the bank...I tell her like, 'Oh, come with me. I'm going to go to the market.'...And with this heat wave....I don't want her taking the bus or walking."

Finally, the aforementioned 27-year-old woman living in Jurupa Valley who lost her car in an accident, and then her job, sometimes gets rides with her brother, boyfriend, or mother-in-law, "but cars don't always work 100% or we don't have gas." This means that because those around her also experience unstable car access due to operating costs, she is often unable to get a ride. Additionally, when we asked her how it feels to request rides from others, she said:

"Uncomfortable, I try not to. That's why I rely on buses." And so, I now turn to the distinct experiences of riding and relying on public transportation in suburban environments—and how buses, in particular, provide some mobility benefits, but largely restrict freedom of movement.

Relying on Public Transportation

Due primarily to the precarity of car access among low-income people of color, more than half (57%) of interviewees use or have used public transportation in their suburban activity spaces on a regular basis (see Table 11). Of course, many interviewees (43%) have no experience with public transportation—such as the previously mentioned 53-year-old immigrant living in Ontario who said, “I’ve been here since I was six...I don’t remember ever using the bus.” Most interviewees, however, have some experience using transit the suburbs—specifically buses, since the only passenger trains in the Inland Empire are part of the commuter rail system Metrolink,⁴⁰ which is designed to transport people between downtown Los Angeles and outlying areas; as I will discuss, the suburb-to-city commute is an uncommon one for low-income suburbanites of color.

Table 11 – Interviewees’ Use of Public Transportation by Car Access

		Count	Percent of Total
Uses or has used public transit on a regular basis	Has car access	11	37%
	No car access	6	20%
Does not and has not used public transit on a regular basis	Has car access	13	43%
	No car access	0	0%

It is no surprise that all interviewees with no car access use public transit on a regular basis, but almost half (46%) of interviewees with car access use it or have used it as well—which is quite different from middle- or higher-income travelers (Giuliano 2005). Since the costs of maintaining and operating a vehicle can be so financially burdensome, a 55-year-old man living in Pomona with car access reported that he often uses the bus because “it’s cheaper. You save a little money. It helps. Everything helps.” Similarly, a 33-year-old mother living in Riverside said

⁴⁰ See Metrolink’s geographic coverage, here: <https://metrolinktrains.com/rider-info/general-info/maps/>.

when she has “low gas, pockets low,” she will use the bus to take her oldest daughter to school, which is just three bus stops away.

Similar to the experience of driving an automobile in suburban environments, most interviewees had no complaints about actually *riding* the bus. In more urban areas, transit riders often report feeling uncomfortable riding the bus because of overcrowding and safety issues (related to the potential for hostile interactions with others) that arise on transit itself (Brozen 2023). The same 33-year-old interviewee explained that in her hometown of Long Beach, she perceives that “[the bus is] commuting thousands of people. It's all day long, every minute,” which often leads to standing room only. Conversely, interviewees reported that riding the bus in suburban environments is a pleasant enough experience, using words like “comfortable,” “nice,” and even “relaxing.”

The 27-year-old woman living in Jurupa Valley who got in a car accident and lost her car, and who is now dependent on public transportation, described the buses as:

“...relatively empty. Not a lot of people use them. Not empty to the point where there's only two or three people in there, but there's open seats still....And it's always air-conditioned and they have chargers for your phone, so that's nice....They're always clean.”

Likewise, the 29-year-old unhoused mother in Riverside whose children are currently in foster care reported that the bus is a type of escape for her and her partner: “...[we] just stay on the buses when it's hot out....and charge the phone so we can be able to call our kids.” And even though the 62-year-old mother living in Pomona would rather catch a ride with a family member, when she does ride the bus, she described the ride as “very comfortable. You're with a lot of people. You feel safe with others around you...Once you know your route, it's easy and calm. Relaxing.”

While riding the bus does not itself pose a problem, *relying* on public transportation in the suburbs imposes major constraints on people’s mobility. This is not to say the bus is devoid of mobility benefits. One interviewee—a 49-year-old immigrant living in Pomona who lacks car access because she is too scared to learn to drive—described the bus as a source of independence. Talking about the time before she married her husband, who now gives her rides in his car (when he is not working his landscaping job), she said: “[The bus] was essential for me. Since I didn’t know how to drive...I had to move around with my kids, to school, the doctor, the pharmacy, everywhere....I felt freer when I was using the bus.” Overall, however, interviewees report that relying on public transportation in their suburban environments generally hinders their mobility in the following ways: long waits, limited geographic coverage, and unaccommodating schedules. These are similar challenges to what Coren et al. (2022) find in their recent qualitative analysis of those facing Black job seekers who commute without cars in Chicago, which includes economically-distressed suburban neighborhoods.

Waiting for the bus is the number one complaint among interviewees trying to move through their suburban communities by public transportation. This finding aligns with previous research showing that transit riders “weight” waiting time more heavily than time en route (Taylor et al. 2009; Yoh et al. 2011). As interviewees explained, it is not that the buses are running late, but rather the bus just does not run very frequently—what planners call long headways (i.e., the duration between the arrival of transit vehicles on a route). For example, the 27-year-old woman living in Jurupa Valley whose car was totaled in an accident compared relying on the bus—or more precisely, waiting for the bus—and driving a personal vehicle:

“...the 49 and the 29 [buses], they both go to downtown [Riverside], but they take too long, and you have to wait an hour, almost an hour and a half. And it's just, it kind of sucks....especially just from going from downtown to here [in Jurupa Valley] because it's

such a short drive. I could probably walk in the amount of time that I'm waiting, but....it's super hot.”⁴¹

The distance she describes is only about three miles. And, just as she describes, the headways on one of her bus lines is about 90 minutes, as Figure 18 shows. And because waiting for the bus takes so long in her neighborhood, she explained, visiting her grandma—who lives in a nearby suburb about a 20-minute drive away—“is going to be an all-day thing.”

29 EASTBOUND TO DOWNTOWN RIVERSIDE WEEKDAYS				
A.M. times are in PLAIN, P.M. times are in BOLD Times are approximate				
AMAZON EASTVALE	LIMONITE & EASTVALE GATEWAY	LIMONITE & ARCHER	RUBIDOUX & MISSION	VINE STREET MOBILITY HUB
5	4	3E	2	1
4:48	4:57	5:07	5:21	5:44
5:48	5:57	6:07	6:21	6:44
7:28	7:40	7:51	8:08	8:30
8:43	8:55	9:06	9:22	9:47
9:56	10:08	10:19	10:35	11:00
11:18	11:30	11:41	11:57	12:20
12:46	12:58	1:12	1:28	1:53
1:52	2:04	2:18	2:36	3:00
3:25	3:38	3:54	4:12	4:37
4:55	5:08	5:24	5:42	6:07
6:35	6:48	7:02	7:17	7:40
7:42	7:53	8:07	8:22	8:45

Figure 18 – Screenshot of Riverside Transit Agency Route 29 Schedule

Similarly, the 29-year-old man living in affordable housing with his family in Pomona, who just recently gained car access, recalled his time on transit: “Man, these buses out here, they play....One can be a missed trip that turns to an hour”—meaning, due to the long headways,

⁴¹ Note that I conducted interviews for this research July-September 2024, which is generally the hottest time of year in Southern California, especially in the Inland Empire. Specifically, during these months in 2024, the average daily temperature in Riverside County was 88.1°F and in San Bernardino County it was 87.6°F. These average daily temperatures are much higher than that of the adjacent, coastal counties of Los Angeles and Orange (77.0°F and 74.8°F, respectively). Moreover, these are the highest average daily temperatures recorded in the Inland Empire for July-September since these data started being collected in 1895 (NOAA National Centers for Environmental information 2025).

missing the bus can add an hour to one's travel time. Adding insult to injury, interviewees shared that bus stops often lack the type of infrastructure to ease the long wait. As a 55-year-old man living in Pomona described, "Either there's nothing to sit on or there's no cover for the sun....If it's a hot day, you're just going to have to stand and cook."

The second way that relying on public transportation restricts the mobility of low-income suburbanites of color is that suburban bus systems have limited geographic coverage. This is not surprising, as suburban environments in the Inland Empire are not just dispersed, but vast; specifically, the IE covers over 27,000 square miles, which is larger than many U.S. states (Collins et al. 2023). This finding aligns with scholarship on transportation disadvantage in the context of the suburbanization of poverty, which shows that a lack of transit coverage across space is a critical problem facing low-income suburbanites (Kramer 2018; Liu and Bardaka 2021). Looking specifically at the Inland Empire, Collins et al. (2023) develop a transit equity index showing the relationship between transit services, race, and disadvantaged populations (which they determine based on median household income, unemployment rate, percentage of population that had immigrated within the last five years, and percentage of households that spend over 30% of their income on rent). Collins et al. (2023) find that that transit routes do not adequately serve disadvantaged communities, which are disproportionately people of color and who disproportionately rely on public transit.

A 54-year-old immigrant who grew up in urban Los Angeles but moved with her family to suburban Pomona when she was 18 compared transit coverage in the two places (note that by "transportation" she means *public* transportation):

"Over there, every five minutes, a mode of transportation passes by, and they're just around the corner. And here, it's not....there's transportation on the main streets and at certain times. But there's no transportation, for example, if you have to go see your

parents, or if you have to visit a relative, or if you have an appointment to get your hair done. After the bus drops you off, you still have to walk a lot. Sometimes I walked up to two hours a day [in Pomona].”

Those reliant on transit reported that while travel within their neighborhoods is difficult but manageable, traveling to other places, particularly other nearby suburbs, feels out of reach. Interviewees rarely expressed a need to travel to more “central” or urban places like Los Angeles or Long Beach, other than the occasional trip to see a family member or visit a specialty store or restaurant. They are generally much more concerned about accessing amenities and resources—like jobs—in nearby suburbs (a phenomenon upon which I elaborate in the next chapter, which focuses on the ways mobility constraints hinder access to places and so opportunities for low-income suburbanites of color).

For example, when I asked the aforementioned 33-year-old mother of two living in affordable housing in Riverside if she felt like she could get where she needs and wants to go, she said: “I’ll say anywhere in Riverside, probably. But going out of that...I don’t really know about Moreno [Valley, a suburb about 10 miles to the east] and stuff and how their buses and stuff work.” The 27-year-old woman living in Jurupa Valley elaborated: “Anywhere else...[it] is really unreasonable to take a bus....it changes from RTA [Riverside Transit Agency]...I don’t like to really stray from the RTA....You have to pay again, even if you get a day pass.” Here, she is speaking to the issue that different counties, or even portions of counties—as RTA serves the western side of Riverside County⁴²—have their own transit operators, which often lack integrated routes or fare structures with other systems; this poses barriers for users wishing to travel beyond the service area of a single transit operator.

⁴² See the Riverside Transit Agency website: <https://www.riversidetransit.com/index.php/about-rta/who-we-are>.

Not only are those who rely on transit confined spatially, but also temporally. Beyond waiting for the bus, interviewees reported that suburban transit schedules generally assume that people work “regular” 9-to-5 jobs, and so the starting and ending times of transit operations are scheduled around these “working” hours. Indeed, research shows that shift workers lack transit access due to limited service hours (Coren et al. 2022; Zalewski et al. 2019)—but it is likely worse for those in the suburbs, where transit systems already have fewer hours of operation than those in urban areas (Kramer 2018; Liu and Bardaka 2021). For example, a 20-year-old college student living with his father in Riverside explained that his dad works an early morning shift at a nearby warehouse. Their house and his dad’s workplace are both located along the region’s commuter rail line—a unique situation, especially in suburban environments—but it is the train *schedule*, rather than station locations, which makes it infeasible for his father to use the train to commute:

“...you're better off going in your own car....There's a train that my dad could get to his work, and it's like two blocks away from his work, so he could just walk there. But the reason he can't grab it is because the hours, they're not made for working-class people...I think the earliest you can get the train might be at eight....But yeah, just public transit here...it's not that good.”

Transit systems that privilege 9-to-5 schedules not only negatively affect those who work outside of “traditional” hours, but also hinder people from traveling for other purposes, like grocery shopping. The 27-year-old woman living in Jurupa Valley described how the bus schedule confines people’s movement:

“The buses stop running at 6pm. So, if I want go to the mall or to a grocery store and I'm at the grocery store until 8pm, I'm only getting dropped off in downtown [Riverside]. There's not another bus after 8pm to come back into Rubidoux⁴³—and to walk back into

⁴³ Jurupa Valley incorporated as a city in 2011, absorbing the Census-designated place Rubidoux as part of the process (<https://www.jurupavalley.org/309/About->

Rubidoux takes about an hour and I'm not going to do that. So, I try not to travel at night...you can't really do anything like that.”

A less prevalent issue with using transit in and around economically-distressed suburbs—although an issue that some interviewees raised as restricting their ability to travel—is cost. Even though transit fares are low⁴⁴ compared to car-related and other expenses, for those with extremely low or no incomes, fares can be financially burdensome, often preventing them from using transit and so prohibiting their mobility. For example, a 63-year-old immigrant and veteran living in affordable housing in Riverside without car access shared that he used to visit his son in Los Angeles, which required taking multiple modes of transit: He would start on a bus to the commuter rail station in nearby San Bernardino, and then take the train to Union Station in downtown Los Angeles, “and from there, take a bus to wherever [my son’s] at. I used to do that. But money got funny, and so I had to slow my roll...and lose all these things.” Another example is that of a 29-year-old unhoused man, who explained that before he and his partner became eligible for 30-day bus passes through a local social service agency, they would often not have enough money to pay the fare and find themselves stranded: “And sometimes we’ll be somewhere else and we’ll be like, ‘Damn. We got to walk two, three hours now.’”

Us#:~:text=The%20City%20of%20Jurupa%20Valley,over%20planning%20and%20zoning%20issues). So, here, the interviewee is still referring to Jurupa Valley.

⁴⁴ In Riverside County (containing Riverside and Jurupa Valley), the base transit fare is \$1.75 per ride and for Medicaid Card Holders (i.e., low-income), it is \$0.75 per ride (see <https://www.riversidetransit.com/index.php/pass-fares-types>); in Los Angeles County (containing Pomona), the base fare is \$1.75 per ride and low-income people (defined as living in a household earning less than \$41,400 per year) get 20 free rides per month (see <https://www.metro.net/riding/fares/>); and in San Bernardino County (containing Ontario), the base fare is \$2.00 per ride (see <https://omnitrans.org/buy-a-pass/fares/>).

Resorting to Walking

Because of the ways that relying on transit largely hinders the mobility of low-income suburbanites of color—primarily because of the long waits at bus stops, sparse geographic coverage of transit, limited hours of operation, and for some, fares—many interviewees shared that they often just resort to walking. Some interviewees with car access also shared that in order to save on gas, and because transit takes too long, they will also choose to walk sometimes.

While this may, at first, seem surprising, since suburbs are notorious for being autocentric and so difficult to walk around, this finding aligns with recent research on socio-spatial use of active transportation in the U.S.: In recent decades, low-income, car-less households in the suburbs have had a greater increase in walking and cycling among all households types—but even low-income people with cars are more dependent on active transportation than those in higher-income households due to a lack of other viable transportation options and financial constraints related to the automobile (Ghimire and Bardaka 2023, 2024). For interviewees across the car access spectrum, walking is sometimes the most convenient and cost-effective solution to their mobility problems. For instance, a 56-year-old immigrant with car access in Jurupa Valley explained that, in order to save on gas, she walks about three days a week. She prefers to walk, she explained, “because I think I could get there faster by walking than by waiting for the bus....because if you’re waiting for the bus, it’s not worth it.”

Of course, traveling by foot severely limits the distance one can travel in a given amount of time. To decrease the travel time of walking, the 29-year-old man living with his partner and daughter in affordable housing in Pomona described literally running instead of walking:

“So, when I didn't have a car, I used to always have to run. It was so crazy...just to go where I got to go to because I got to be in there. I got to hurry up. I got my daughter at home waiting for me, so I got to hurry up. So, a lot of times I'm always running. I was always running.”

A few interviewees emphasized not just the cost savings of walking (instead of driving) or the time savings of walking (instead of waiting for the bus), but also the appeal of walking as a more enjoyable alternative (mostly to driving). Specifically, a 59-year-old immigrant from Mexico living in Pomona, who is the full-time caregiver for her granddaughter, said:

“I walk, yes. In fact, it's more convenient for me...and we go walking because it entertains her, and it entertains me....I'm happier walking or riding a bike⁴⁵ than driving. I don't know, but personally, I enjoy walking more than, say, driving to the park around the corner...She talks a lot, and when we're walking, she sees a little flower and picks it up. She's always saying, 'Look at this, look at that.' All these things she's learning, I love that. I love not missing out on that because when you're in a car, you don't see things the same way you do when you're walking. It's something [she] and I enjoy.”

But to her, walking is more than just an enjoyable activity—it is also the safer option:

“What don't I like about the car? I don't know, I get anxious, I don't know why, thinking something might happen to [my granddaughter]...It's because when she was a baby, someone hit us from behind, and that stayed with me. Ever since that happened, she was in her car seat, and nothing serious happened, but I thought, 'No, she's my daughter's only child. I would die if something happened to [her].’”

Overall, however, interviewees described safety concerns, rather than safety benefits, associated with walking in their suburban environments. While walking sometimes provides a more efficient method of travel compared to public transit—and provides some benefits such as leisure—overall, due primarily to long travel times and safety concerns, it ultimately hinders freedom of movement in and across autocentric suburban environments.

⁴⁵ Only three interviewees mentioned riding bikes, and in two of the three cases, it was for leisure rather than necessity.

Fear & Safety Concerns

Interviewees expressed a number of fears that inhibit their mobility, primarily safety concerns related to: 1) using transit and/or walking; 2) the potential for racialized police violence while traveling; and 3) immigration and/or citizenship status.

In terms of using transit and/or walking, some interviewees expressed concern about the potential for hostile interactions with others. Aligning with research on sexual harassment in transit environments (Ding, Loukaitou-Sideris, and Agrawal 2020), a majority of those with transit-related safety concerns identify as women and worry about harassment leading to violence, such as the 33-year-old mother of two living in affordable housing in Riverside who said: “I’m way much safer in the car...even standing at the bus stop...I’ll kind of watch for the bus, but kind of standing more over here. You know what I mean? Trying to not be seen too much of directly.” A 20-year-old college student living with her family in Jurupa Valley explained that her father perceives the bus as “dangerous,” so:

“...either he’ll get to work late in order to take us [in his car] or if he’ll rather get us our own vehicle where he knows we’re a bit more safe than being alone at a bus stop or being in the bus and you don’t know who’s there, what’s going to happen.”

Likewise, a 29-year-old woman who grew up in Pomona but recently moved to an apartment in Claremont also said that her mother is concerned about her taking the bus, as her mother is “just very worryful.” When reflecting on her experiences taking the bus in Pomona, she said, “As a young girl, I just always made sure I’d sat in the front. My mom always taught me, sit in the front next to the driver.” Indeed, this interviewee has experienced sexual harassment on transit:

“...men would talk to me and I would just kind of like...I usually try to just keep my headphone in. Maybe nobody will talk to me. But there was some incidents where they’ll

be like, ‘Oh, you're so beautiful.’ Someone will sit right behind me and I'm just like, ‘Oh, my God.’...It's scary.”

Similar to using transit, some interviewees are also concerned about the potential for hostile interactions with others while walking—and also similar to transit, those who express this concern identify as women. For example, a 29-year-old single mother of two living in affordable housing in Pomona said:

“So, I've lived out here five years, I've taken one walk and that was only because my dog was too dirty for me to put him in my car, and I didn't want his stench in my car....Other than that, me walking my kids down the street, it just isn't an option. I don't feel safe.”

A 41-year-old Latina mother living in Jurupa Valley with car access described how she feels unsafe walking in her neighborhood, due specifically to prior experiences with sexual harassment:

“To take my kids to school, I could walk....For the first few months when my kids went to Head Start, I took them walking...I liked it because it was my time to walk and exercise. But...one time, a man came up to me and as he got next to me, he touched my butt. It was obviously disrespectful, and no one did anything. I told the school about it, and they didn't do anything. I just made a police report, but that was it. When I picked up my kids, they were smaller at that time, so I had a stroller. I would strap them in because I felt unsafe walking with them. It was always like, ‘There are men, there are men,’ so I decided to drive instead....It took me longer to get in the truck and get there than it would have walking. But because of the safety concerns...I started driving.”

In addition to hostile interactions with others, interviewees described unsafe conditions for pedestrians, such as wide streets (see Figure 19) with long stretches of road without traffic lights or crosswalks, as well as a lack of pedestrian infrastructure, such as sidewalks and tree canopy, along at least part of their routes. This is what Benediktsson (2017) calls the “material mismatch” between the autocentric built environment in suburbs and the travel behavior of their “new” lower-income residents. And this, of course, leads to pedestrian risk—or at least fear of risk—particularly regarding road traffic. For instance, a 53-year-old woman who used to live in

Los Angeles but moved to Pomona to be close to family explained, “I don’t live very far [from work], and sometimes I do walk. But I think about it a lot because I’m scared....scared that nowadays people drive a lot, and I’m afraid they won’t pay attention to me, that they will run me over.”



Figure 19 – Pedestrian in Jurupa Valley, CA

A second source of fear that some interviewees named with regard to traveling in and across suburban environments is the threat of racialized police violence, particularly related to altercations with the police while traveling by car or foot. A 33-year-old Black man who moved from his urban, coastal hometown of Long Beach to Riverside said: “They do more police on the streets [in Riverside than in]....Long Beach, they don't really pull you over for petty stuff like a little traffic ticket. Here, they do....for speeding, stuff like that.” In his experience, it is related to racial profiling.

Likewise, a 54-year old Latinx immigrant from Mexico living in Pomona discussed the anxiety she feels driving to and through the much whiter and better resourced suburb of La Verne—only about four miles north of Pomona—particularly as it relates to getting pulled over by police, as well as her children getting pulled over, which could lead to her children getting harmed:

“It’s a level of anxiety that, even if you don’t want to have it, it’s there. I’m driving, and I don’t have the music turned up. Let’s say, I’m very aware of everything....over there [in La Verne], I’m more conscious of everything because I know it’s different. And I tell my kids, ‘Please, please, please, when you go over there, keep the window halfway down so they can see us.’ Even that. I say, ‘Lower the window a little so they can see you and be careful.’ Because it’s an anxiety...I don’t feel comfortable [there] like in my area [of Pomona].”

Finally, a few interviewees who are immigrants reported fearing travel due to their precarious citizenship status—in that travel could lead to interactions with the police. While this is not unique to those living in the suburbs, it is particularly relevant as suburbs have increasingly become immigrant “gateways”—or the initial places to which immigrants move from their home countries (Carrillo et al. 2016; Singer 2004; Singer et al. 2008; Walker 2018). In addition to the aforementioned stress about potential encounters with police while traveling, some immigrant interviewees fear leaving their immediate vicinity because of the potential of being separated from their families via coming into contact with police, which may lead to deportation.

For example, when I asked a 41-year-old Latinx DACA recipient⁴⁶ living in Ontario (with car access) if she chooses to not travel to certain places because it would be too difficult to

⁴⁶ DACA stands for Deferred Action for Childhood Arrivals, a policy that the Department of Homeland Security adopted in 2012 allowing immigrants who grew up in the U.S. to obtain temporary protection from deportation and to have the ability to work in the U.S. (National Immigration Law Center 2025).

get there, she said: “It’s not difficult; it’s just fear. For example...I don’t go to San Diego because I’m afraid of accidentally getting out of the country....But it’s not because of insecurity about something or because I can’t get there.” Similarly, a 46-year-old undocumented Latinx mother of four—who lost her job due to an injury obtained at her warehouse job (for which she receives no disability because the company claims no responsibility)—discussed not being able to visit family in Mexico: “Those are places I want to go, but I can’t. My kids say, ‘Well, you can go,’ yes, I can go, but...” not return. “That’s where I get restricted,” in terms of mobility.

It is important to note that I conducted these interviews a few months prior to the 2024 presidential election of Donald Trump. Since his election, the Trump administration’s immigration “enforcement” efforts have targeted and terrorized Southern California communities, including those in the Inland Empire. And so, my interviewees’ fear of police encounters leading to deportation has very likely increased since we spoke, further restricting their freedom of movement (not to mention their freedom to live in peace). Indeed, in a local *NBC* news segment aired on June 13, 2025 called “Inland Empire residents afraid to leave their homes amid ICE activity” (2025), IE resident Gabriela Nuñez said, “People are too scared to go outside. The streets feel empty and we don’t feel like we have the freedom to walk around anymore.”

Conclusion

This chapter illustrates the multitude of ways that low-income people of color experience mobility constraints in suburban environments. My qualitative approach builds on my quantitative analysis (Chapter 4), allowing for a more comprehensive understanding of: 1) the various pathways to immobility in suburban environments (Figure 20); 2) the cumulative impact

of multiple factors that inhibit freedom of movement, and; 3) the changing nature of mobility/immobility that low-income people of color experience at various points in their lives.

Unsurprisingly, I find that automobile access critically enhances mobility in the suburbs. And while people of color living in California suburbs have higher levels of car access than those in urban areas—as my analysis of the confidential spatial data from the National Household Travel Survey California Add-on in the previous chapter shows—the interview data in this chapter show that such access is both complicated and unstable. It is complicated in that interviewees largely define car access as being able to use a car when they need or want to, regardless of who owns the car or how many cars there are in their household. It is unstable in that it is common to transition in and out of car access, often unexpectedly. Interviewees described the loss of car access, in particular, as feeling suddenly stripped of freedom of movement.

Figure 20 shows factors leading to mobility constraints; yellow indicates transportation-related factors and orange indicates other relevant factors, all raised by interviewees. As Figure 20 shows, a loss of car access can happen in several different ways: 1) rising gas prices and/or other household expenses that hinder one's ability to pay car-related expenses; 2) loss of job (and so income) resulting in an inability to pay car-related expenses; 3) health problems that impede one's ability to drive; and/or 4) an accident that renders the car unusable—which itself can lead to job loss because of an inability to reach the employment location (which I detail in the next chapter). It is noteworthy that the first three reasons for loss of car access do not necessarily mean loss of car. Instead, they describe a loss of the ability to *use* the car. So not only is car access fluid, but it takes many forms—meaning that, in reality, individuals in households with

the same ratio of cars to working-age adults (a common metric used in quantitative analyses, such as that in Chapter 4) do not necessarily have the same level of car access.

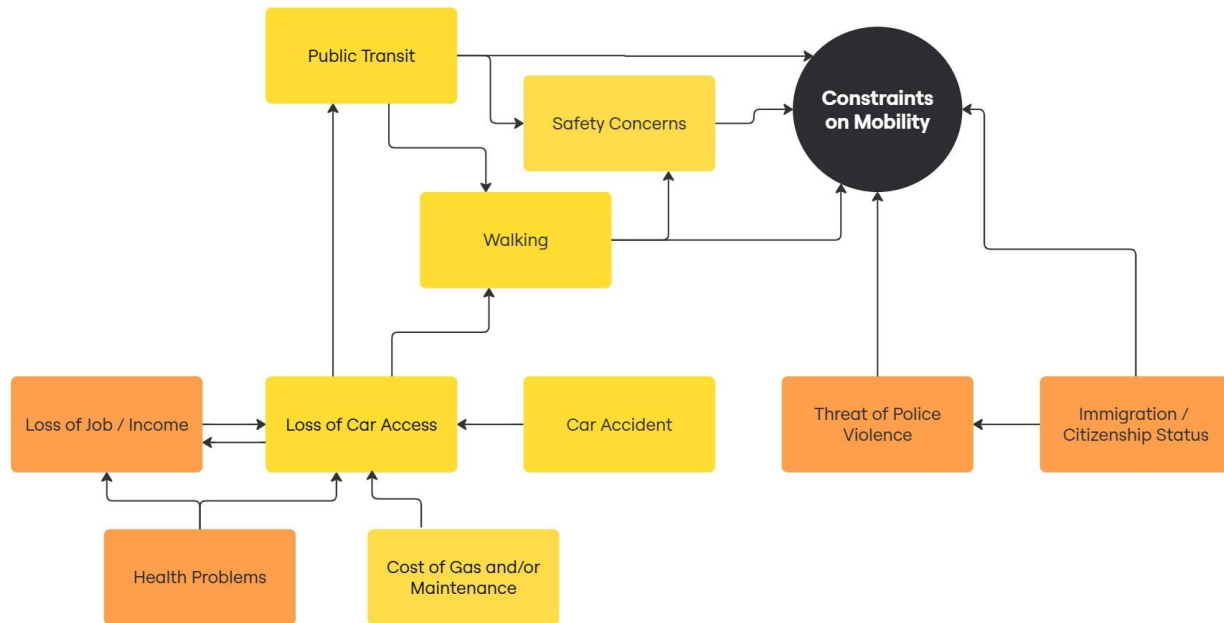


Figure 20 – Factors Leading to Constraints on the Mobility of Low-Income People of Color in Suburbs

When people lose car access, they tend to first ask others for rides—as getting a ride is still more convenient than turning to alternative modes, which are sparse; indeed, interviewees described family and neighbor networks for both getting and providing rides, particularly within immigrant communities. But getting rides is not a sustainable, long-term solution to regular travel. This is because interviewees shared that constantly asking for rides is uncomfortable—but also, some simply do not have anyone they can ask. Therefore, many low-income suburbanites of color turn to transit, namely buses (due to the relative dearth of passenger rail service in suburban environments like the Inland Empire). Unlike their urban counterparts, who often report overcrowded and uncomfortable conditions on public transit, interviewees had few complaints about the actual bus ride; some even talked about the non-transportation benefits of

riding the bus, such as access to an air-conditioned and clean environment where they can charge their phones. What makes the bus so unpleasant in the suburbs are the long waits, the limited geographic coverage, and bus schedules based on “traditional” daytime working hours; in this way, as one interviewee so concisely said, suburban transit, as he perceives it, is “not made for working-class people.” And so, somewhat surprisingly in the context of suburbia’s autocentricity, many interviewees described resorting to walking for a substantial number of trips. While walking allows some level of freedom of movement—in that one is not beholden to a fixed timetable or fixed route—one can, literally, only go so far.

What do the multitude of mobility constraints, and the various pathways to immobility, add up to for those in the suburbs? Most transportation equity research (including my own) has focused on issues of immobility—and solutions to overcome such immobility—for low-income communities of color in urban areas. But what these interview data show is that, because origins and destinations are farther away from each other in suburbs than in cities, and because there is a much thinner transit safety net in suburbs than in cities, the consequences of unstable car access are even more dire for those in suburbs than for those in cities. In short, those facing unstable car access in suburbs are in a much more precarious situation, mobility-wise. And while there is currently a popular notion that the growth of low-income people and people of color living in suburbs has necessarily induced cross-region travel, particularly in California (Loeza 2024; McPhate 2017), I find that mobility constraints in dispersed and autocentric suburban environments actually *stifle* travel. Indeed, interviewees expressed a desire to be able to travel more, if not for the multitude of constraints they face on daily basis.

Chapter 6: How Mobility Constraints Cement Racial-Spatial Isolation in Suburbs, and the Consequences

So how does the relationship between mobility and racial-spatial isolation in suburbs operate, and why does it matter? The previous chapter illustrates the multitude of mobility constraints, and the variety of pathways to immobility, facing low-income people of color in suburbs. With this more holistic understanding of mobility constraints in suburbs—including and beyond a lack of car access—I turn to the following questions: In what ways do mobility constraints affect racial-spatial isolation in suburbs, and what are the consequences for low-income suburbanites of color?

I start by examining the ways that mobility constraints shape activity spaces of low-income people of color living in economically-distressed suburbs. I find that such constraints spatially contain interviewees to relatively small activity spaces, which tend to cluster tightly around their residential locations. I then detail a key consequence of spatial containment in relatively small activity spaces in suburbs: a lack of spatial access to jobs, particularly in better-resourced, often nearby, suburbs. In spite of these mobility and access challenges, there are reasons that low-income people of color increasingly live in suburbs—namely housing affordability and familial and community networks (on which I elaborate). I conclude that while transportation has the potential to widen spatial access to opportunities in increasingly segregated suburbs, ultimately, mobility constraints do the opposite: They cement racial-spatial isolation by bounding low-income people of color to small activity spaces, which can lead to severe economic consequences.

Spatial Confinement of Low-Income People of Color in Suburbs

In this section, I examine: 1) the scale and scope of activity spaces—or the areas that encompass all locations that an individual visits as part of their daily activities and travel (Kwan 2012)—of low-income suburbanites of color, and 2) the ways that mobility constraints shape their activity spaces.

To understand interviewees' activity spaces—and the extent to which their mobility/immobility shape these spaces—I conducted a cognitive mapping exercise as part of the interviews. Cognitive maps include spatial information about one's external environment, such as the identity, location, distance, and direction of places and paths (Downs and Stea 1973). Cognitive maps, as Mondschein (2020) explains, “embody the space actually experienced by individuals” (2020:124). A cognitive mapping exercise is, therefore, well suited for understanding how interviewees think about and experience their activity spaces, and what factors shape them. (See Chapter 3 on data and methodology for more on cognitive mapping).

In the exercise, I asked interviewees to depict how and where they travel on a typical day in the form of a sketch map (see Appendix A for the interview instrument). The exercise resulted in a diverse range of sketch maps in terms of level of detail and depiction of physical features in the external environment of their activity spaces. Famed urban design scholar Kevin Lynch (1960) distinguishes the following physical features, or “elements,” of the image that people construct of their surroundings: paths (i.e., travel routes), edges (i.e., spatial boundaries), nodes (i.e., focal points or concentrations of activity), and landmarks (i.e., points of spatial reference). Each element, as depicted in sketch maps and described verbally, provides critical information about the scale and scope of a person's activity space, and what factors shape them. Spatial learning theory (Montello 1997) explains that as people develop spatial knowledge, they

typically progress from first noting landmarks to then noting paths. Therefore, these two elements of sketch maps are especially important to analyze toward understanding how people think about the space they move through, between, and within (Mondschein 2020).

Scale and Scope of Activity Spaces

Most interviewees did not specify exact travel distances or travel times on their sketch maps—since requesting this information would have changed the very nature of the assignment, which was to freely depict their activity space to understand how they *experience* and *what shapes* their activity space.⁴⁷ Therefore, analyzing sketch map elements, particularly landmarks and paths/routes, is how I decipher the scale and scope of such spaces. Pairing the analysis of interviewees' sketch maps with their verbal descriptions of how and where they travel on a typical day, I find that their daily activities are generally contained within relatively small areas in which interviewees do not stray far from their residential locations (a finding aligning with other research on income and activity space, such as Tao et al. 2020). This means that a majority of interviewees have limited activity spaces in which their movement is typically at the local or intra-neighborhood level, as opposed to the inter-neighborhood or cross-regional level.

One of the more universal features of interviewees' sketch maps signifying this smaller or more local scale of movement is the exclusion of freeways. Such an exclusion is initially surprising, as the four suburban places from which I recruited interviewees (Pomona, Ontario, Jurupa Valley, and Riverside) are each adjacent to and/or intersected by at least one freeway (see

⁴⁷ Also, research shows that people's perceptions of travel distance differ greatly from actual distances (Walmsley and Jenkins 1992), so even if I did ask for specific distances, I would still need to interpret other elements of the sketch map to verify results.

the map in Figure 7 in Chapter 3). As Table 12 shows, however, only about a quarter (23%) of all interviewees included freeways in their sketch maps. And while some include freeways as routes—meaning that they use them for travel purposes—most include freeways as landmarks within, or edges of, their neighborhood-level activity spaces.

Disaggregating the results by reported auto access, Table 12 shows that all six interviewees who lack car access excluded freeways from their sketch maps; this omission makes sense, as they travel by bus, which typically follow arterial streets (which are major avenues and boulevards designed for high-volume surface street traffic), or by foot on either arterial or local streets (the latter of which are roads designed to access individual properties, primarily residential), rather than freeways. What might appear more surprising is that over half (54%) of those *with* car access excluded freeways from their sketch maps—and again, often these freeways serve as landmarks or edges rather than as paths. But as the previous chapter on mobility constraints shows, car access does not guarantee freedom of movement, as the costs of operating a vehicle are often high enough to hinder use of the vehicle. In light of such constraints, it actually makes sense why many exclude freeways from sketch maps, which suggests more local- or neighborhood-scale activity spaces.

Table 12 - Count of Interviewees who Included Freeways in, or Excluded Freeways from, Sketch Maps by Car Access

	Has Car Access			No Car Access		
	Count	Percent of Those with Car Access (<i>n</i> =24)	Percent of All (<i>n</i> =30)	Count	Percent of Those without Car Access (<i>n</i> =6)	Percent of All (<i>n</i> =30)
Included at least one freeway in sketch map	7	29%	23%	0	0%	0%
Excluded freeways from sketch map	13	54%	43%	6	100%	20%
Unclear⁴⁸	4	17%	13%	0	0%	0%
Total	24	100%	80%	6	100%	20%

In addition to the exclusion of freeways, many interviewees' sketch maps center around specific intersections, an arterial street surrounded by a handful of local streets, and/or a few local landmarks like grocery stores, libraries, and/or parks. The local nature of these elements is another indicator of the relatively small scale of activity spaces.

The Role of Mobility Constraints in Shaping Activity Spaces

Through the process of sketching and then verbally describing their activity spaces—both the physical elements, but also how they experience moving through such spaces—interviewees largely credit transportation-related factors in the shaping of such spaces, and specifically, containing their movement to relatively small areas. When I initially asked interviewees if they

⁴⁸ In the four cases in which it is “unclear” if the interviewee included a freeway in their sketch map or excluded freeways in / from their sketch map, the interviewee did not verbally describe using the freeway, so it is more likely that they excluded, rather than included, a freeway. But since there are some markings on these four sketch maps that could possibly indicate a freeway, since labeling varied across sketch maps, I designated these maps as “unclear” as to not inadvertently over-report the instances of interviewees excluding a freeway from their sketch maps.

experience any “constraints” on their “ability to get around,” most interviewees responded “no.” But when I inquired about both their transportation experiences and their ability to get to places that they need or want to go—what planners call access (Giuliano and Hanson 2017)—most interviewees described a multitude of mobility constraints, namely: unreliable access to fast-moving modes (i.e., the car), high transportation costs, and to a lesser yet still significant extent, safety concerns (as I detail in the previous chapter). Interviewees shared that these constraints tend to limit any “extra” or longer-distance travel, keeping them relatively close to home (or, in cases of unhoused individuals, close to the places they regularly stay), which their sketch maps show. Of course, depending on the extent of mobility constraints facing an individual, and other factors like employment and caregiving responsibilities, activity spaces of interviewees vary, a bit, in size. In this section, I present sketch maps from smallest to largest in terms of activity space size.

Of course, compared to interviewees with car access, those who lack such access certainly have more restrictions on their movement—due primarily to constraints associated with relying on the bus and walking in dispersed suburban environments (as I detail in the previous chapter)—and so restrictions on the places they can reach, or, again, access. For instance, Figure 21 shows a sketch map of the activity space of a 63-year-old Black veteran who lacks car access, is not employed, and lives in affordable (i.e., subsidized) housing in Riverside; he cannot afford to purchase, maintain, or operate an automobile and travels primarily by bus and by foot. As the sketch shows, his activity space centers around a single intersection—what Lynch might (1960) call a “node.” The intersection is close to his apartment, where two shopping centers are located containing a grocery store, some fast-food restaurants, a hair salon, and the local public library (which is not pictured in his sketch map, even though he talked about the library as a place he

frequents; it is in fact where he suggested we conduct our interview). This intersection is also where he catches the bus that takes him to the VA hospital about 10 miles away for his medical care. But on a day-to-day basis, he is typically on foot and stays in this area made up of a few square blocks, as his sketch map in Figure 21 shows.

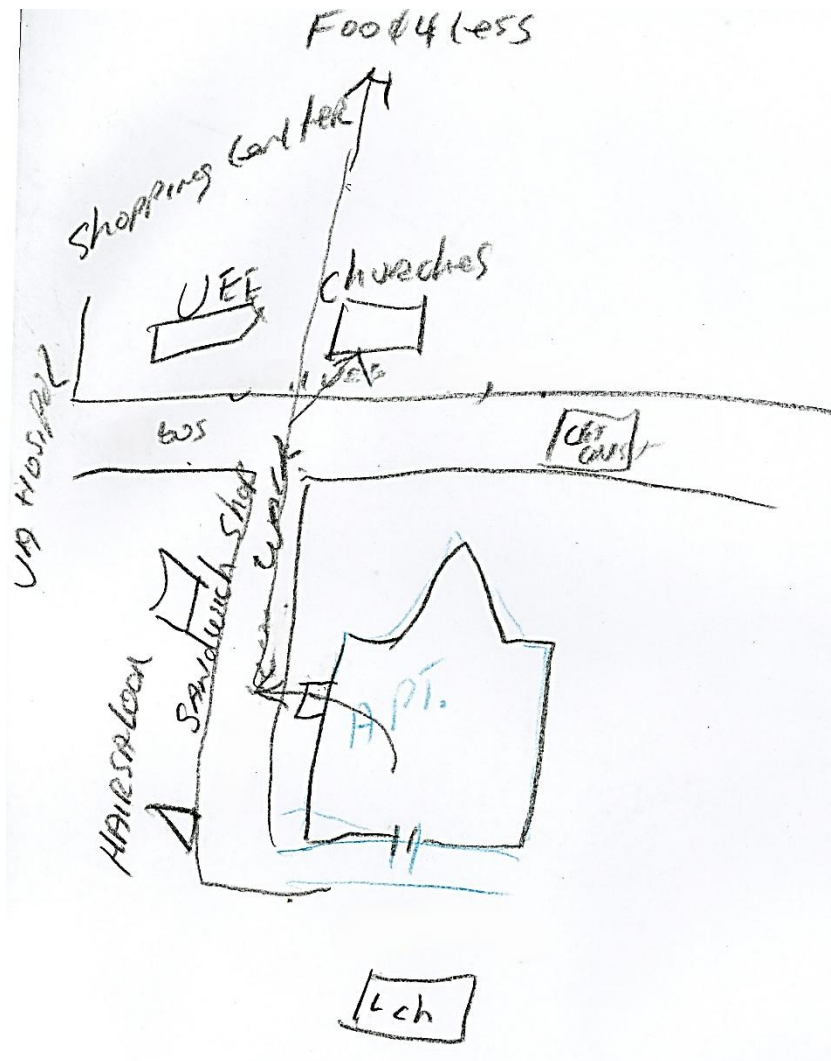


Figure 21 – Sketch map of the activity space of a 63-year-old Black man without car access who is not employed, living in Riverside, CA

Another interviewee without car access explained that being beholden to fixed bus routes, which have limited geographic coverage, restricts the size and scope of her activity space. When I asked her if she felt like she could get where she needed and wanted to go, she said:

“No, it's just where the buses will take you....I go to Downtown [Riverside], the mall, go to Walmart or my grandma's house, and then those are the buses that we take because even then when I go out with her, we still have to take the bus. Either we go to the mall, or we go to the, stuff. So, we usually always rely on the 13 [bus] because it comes in diagonally and it drops off really close to the house....But that's pretty much everywhere I go. Everywhere else, I just have to walk down the street or something.”

While those who lack access to an automobile certainly have the smallest activity spaces among interviewees, those with car access also appear to largely contain their movement to the intra-neighborhood scale—which the following sketch maps illustrate. As I discussed in the previous chapter, even those with car access face mobility constraints, primarily related to the costs of operating an automobile. In addition to short-term costs, some interviewees with car access also described limiting the places to which they drive in order to minimize wear and tear on the vehicle to preserve its life as long as possible.

The rest of the sketch maps in this section are organized by both employment and caregiving status—two additional factors that significantly shape activity spaces (Buliung and Kanaroglou 2006; Hasanzadeh et al. 2019). Figure 22 and Figure 23 show sketch maps of activity spaces of mothers who are not employed and have young children, in which much of their movement revolves around escorting their children to and from their local public schools; in Figure 23, the interviewee shows them visiting the local public library and a local public park where her children can play. Figure 24 shows a sketch map of the activity space (in which the red and green lines represent different routes to various destinations) of a 64-year-old Black retiree, who cares for his adult son and grandchildren and whose activity space consists primarily

of going to local grocery stores, often by bus to save money on gas, and walking to the nearby hospital with his son for medical care. While these three interviewees have car access, each talked about the need to minimize travel to save money on gas, especially because none are employed and each have the responsibility to care for others in addition to themselves. As they drew and described it, their daily movement happens at a very local scale.

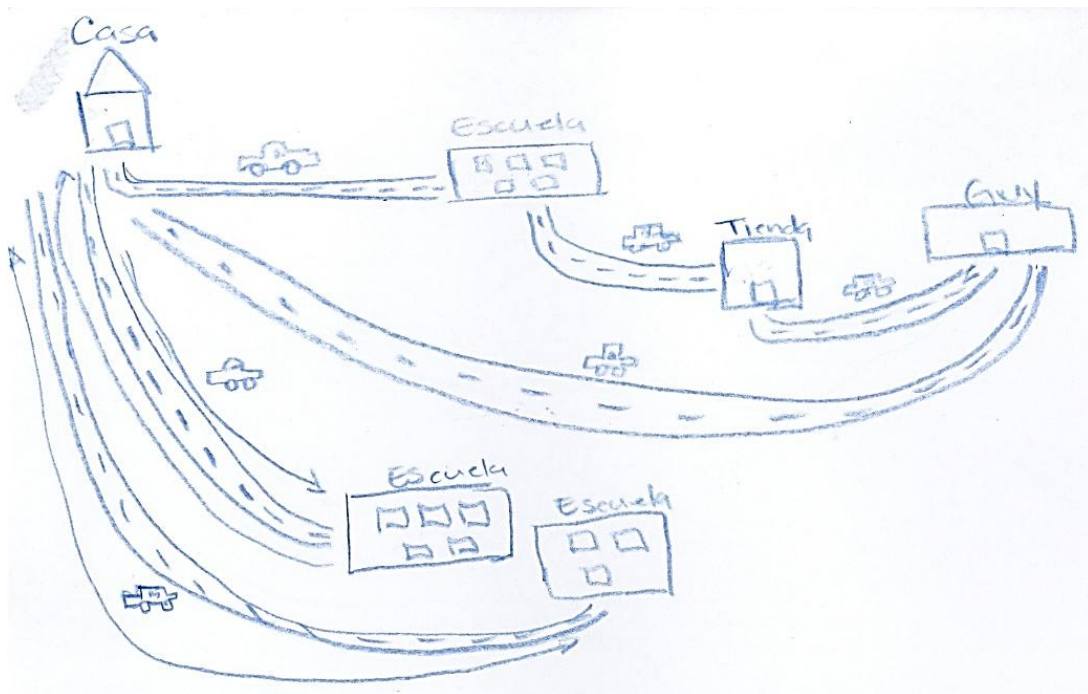


Figure 22 – Sketch map of the activity space of a 41-year-old Latinx woman with car access who is not employed, living in Jurupa Valley, CA

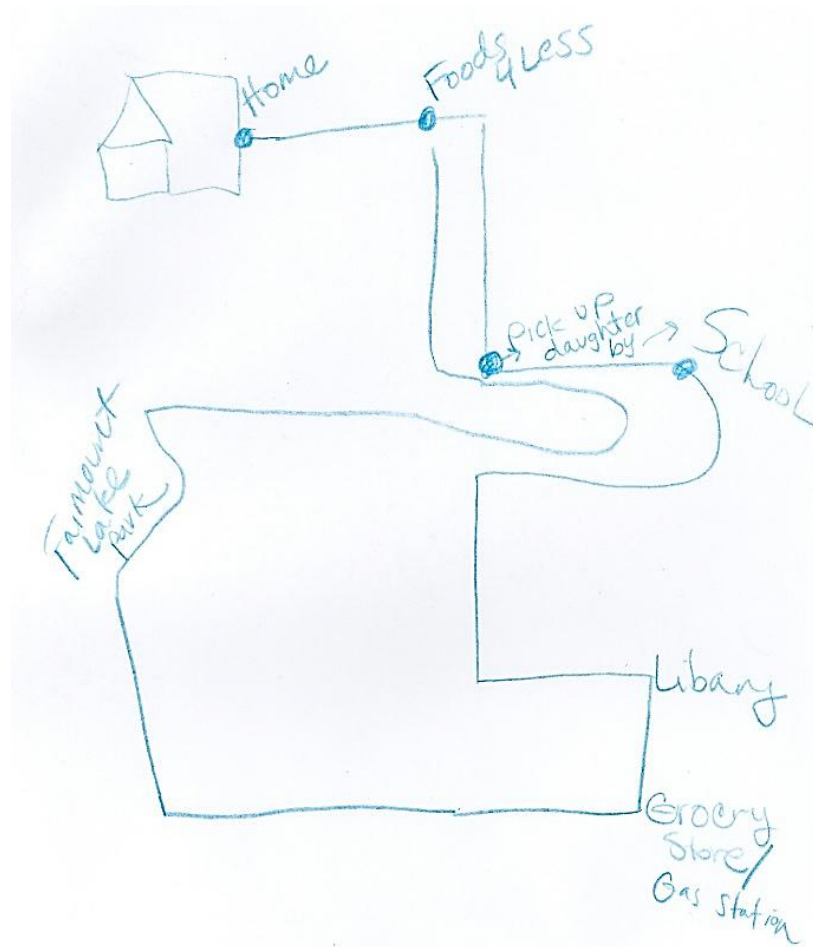


Figure 23 – Sketch map of the activity space of a 33-year-old Black woman with car access who is not employed, living in Riverside, CA

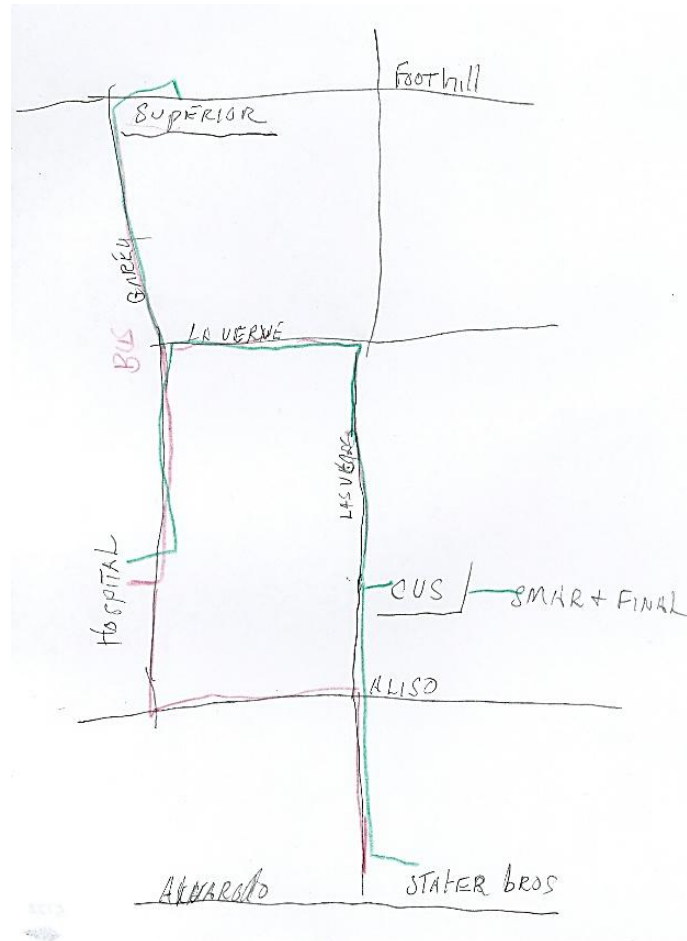


Figure 24 – Sketch map of the activity space of a 64-year-old Black man with car access who is retired, living in Pomona, CA

Figure 25 through Figure 28 show sketch maps of activity spaces for those who have car access and are employed. These interviewees depict noticeably larger activity spaces than those without jobs. This finding aligns with research showing that most people do not live in the same neighborhood where they work, and so workers tend to travel farther distances than those without jobs; indeed, in terms of distance, commute trips tend to be longer than most other trips. Nonetheless, the daily movement of these employed interviewees is still predominantly at the intra-neighborhood scale or, in a few cases, inter-neighborhood scale; none are at the regional scale.

Figure 25 shows a sketch map of the activity space (in which the colored lines represent different routes from home to various destinations) of a 20-year-old Latinx college student with part-time coaching and tutoring jobs. To both preserve the condition of the car, which he shares with his father, but also for leisure purposes, he often takes long walks to the community college where he attends school as well as to the high schools where he works—meaning he does not have the time, nor does he have the resources, to venture much outside of his more immediate surroundings.

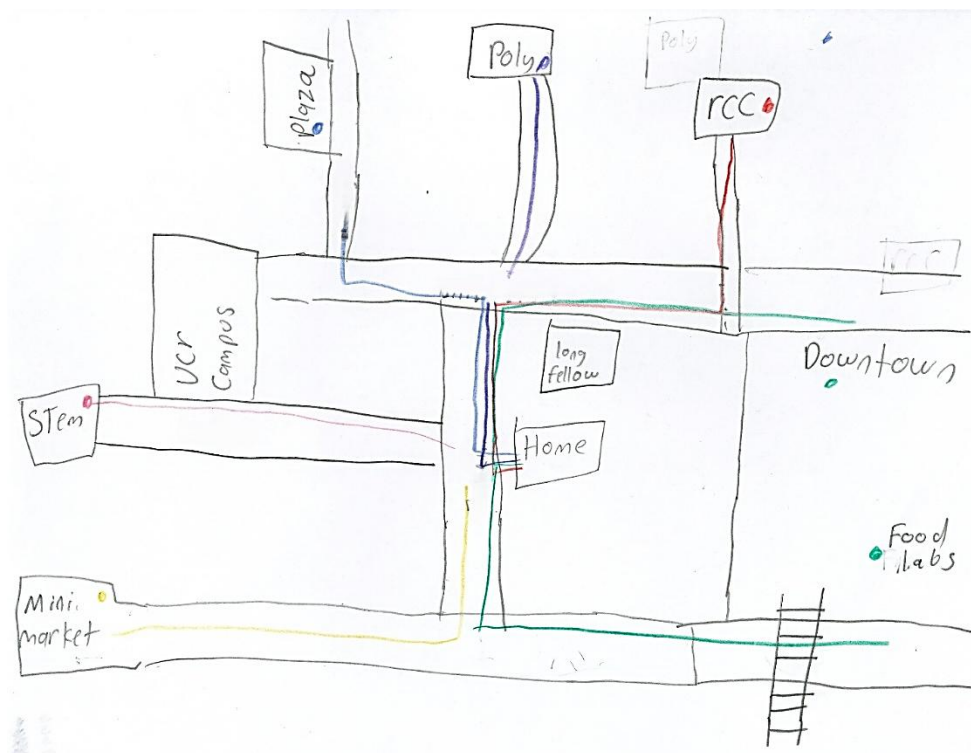


Figure 25 – Sketch map of the activity space of a 20-year-old Latinx man with car access who is a college student with a part-time job, living in Riverside, CA

Figure 26 through Figure 28 show sketch maps depicting activity spaces of those with car access *and* full-time jobs, all of whom use their cars to commute (i.e., travel to and from work). These sketch maps show the largest activity spaces among interviewees; note that the sketch maps in two of the three sketch maps contain freeways, which the interviewees use for travel.

Specifically, Figure 26 shows the sketch map of a 53-year-old Latinx man living in Riverside who works at a factory in a nearby suburb about a 10-minute drive from his house on State Route 60 (as shown in the top left corner of his sketch map). Figure 27 shows the sketch map of a 53-year-old Latinx man living in Ontario who works in construction and uses the Interstate 10 freeway (as shown in the center of the sketch map) to travel to various work sites. While many of his jobs are far away in predominantly higher-income suburbs, since he is the primary caregiver for his son who has a disability as well as for his aging parents—none of whom can drive—he spends much of his time in his neighborhood, escorting his loved ones to the store and medical appointments. In both these cases, according to the interviewees, neither would be able to access their jobs without a car.

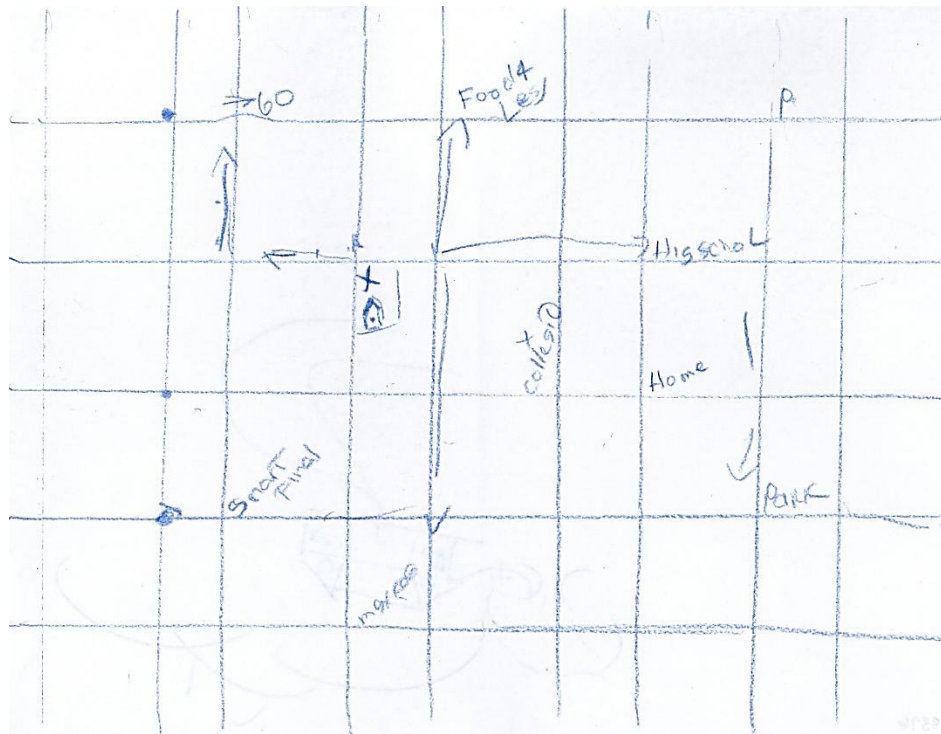


Figure 26 – Sketch map of the activity space of a 53-year-old Latinx man with car access who works full-time, living in Riverside, CA

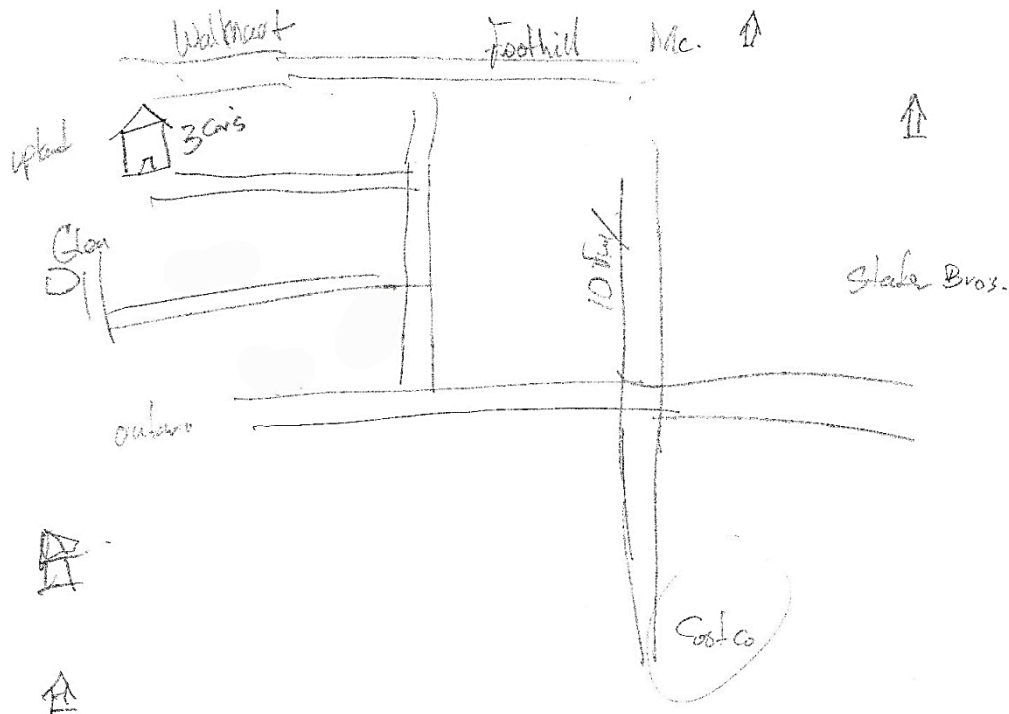


Figure 27 – Sketch map of the activity space of a 53-year-old Latinx man with car access who works full-time in construction, living in Ontario, CA

Finally, Figure 28 shows the sketch map of a 54-year-old Latinx immigrant with car access living in Riverside who works full-time at a warehouse in a nearby suburb. In fact, the reason she acquired a car—which she did with the help of her family—was to be able to access this job; she explained that there is simply no bus that could take her from her suburban residential neighborhood to her the suburban neighborhood containing her employment location.

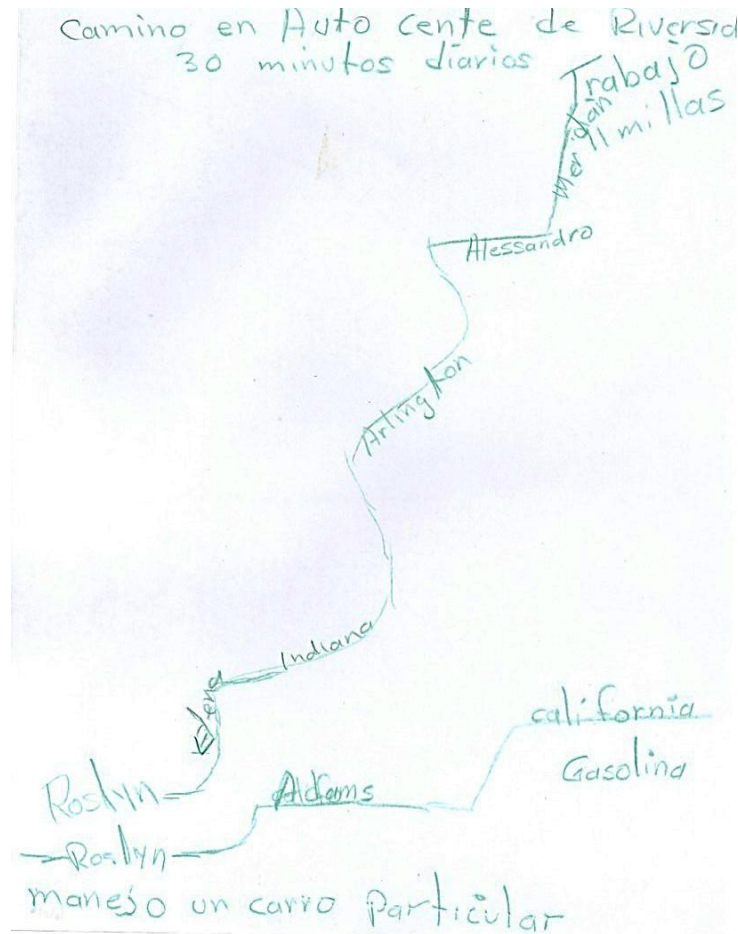


Figure 28 – Sketch map of the activity space of a 54-year-old Latinx woman with car access and a full-time job, living in Riverside, CA

While interviewees' activity spaces vary by employment status, caregiving responsibilities, and health conditions, overall, due primarily to mobility constraints, I find that interviewees' activities are generally contained within relatively small spaces that cluster tightly around their homes (or, again, for unhoused individuals, close to the places they regularly stay). In the next section, I examine a critical consequence of spatial containment in restricted activity spaces in suburbs: limited spatial access to opportunities, primarily jobs, in better-resourced, often nearby, suburbs.

A Critical Consequence: Limited Access to Jobs in (Other) Suburbs

In the context of the “suburbanization of poverty,” popular rhetoric reports that low-income people in suburbs must travel “back” to the city for employment (e.g., Loeza 2024; McPhate 2017). However, not a single interviewee either travels to the Los Angeles area for work or is seeking to do so; it is simply not part of the conversation, presumably due to the untenably long travel distances.

One interviewee, a 41-year-old Latinx woman with car access living in Jurupa Valley (who drew the sketch map in Figure 22), *used* to work in a meat processing plant in Vernon, a highly industrial city located about four miles south of downtown Los Angeles and nearly 50 miles west of Jurupa Valley (see the map in Figure 7 in Chapter 3). She got the job when she lived in the nearby working-class community of Huntington Park, located less than three miles south of Vernon. But then, as she explained, “[My husband and I] had the opportunity to buy a house, and we moved here to Jurupa [Valley]” (housing affordability is indeed a recurring theme for residential self-selection in suburbs, on which I elaborate in the next section). For several years, she kept her factory job in Vernon, commuting an astonishing 100 miles round-trip every day, to and from work:

“I would wake up around 4:30 or 5 in the morning to start at 6am. Let’s say I finished at 4:30pm or 5pm, but the traffic from there to here could sometimes be an hour and a half, and if there was traffic or an accident, even two hours. I would get home really late.”

Because of this, she said, she “missed out on many things when my daughter was growing up.”

When she became pregnant with twins, her and her partner decided that the transportation costs associated with her commute—financial, but also time—were not worth her keeping the job, so she let it go.

Indeed, the “traditional” suburb-to-central-city commute has not been that “traditional” for some time—some suggest as far back as 1970 (Plane 1981). By 2009, Giuliano and Hanson (2017) find that the within-suburb or suburb-to-suburb commutes accounted for the largest share of work trips in U.S. regions (nearly 37%), while suburb-to-central-city commutes only accounted for 20 percent (and within-central-city trips accounted for about 29 percent). And in a more recent and targeted survey of low- to moderate-income people living in the largely suburban Contra Costa County in the San Francisco Bay Area, Pan et al. (2023) find that 29 percent commute within the same suburb, 29 percent of low-income suburbanites commute to other suburbs, and only 33 percent commute to the core city. It is important to note that Pan et al. (2023) include moderate-income travelers, who are more likely to travel farther distances than low-income travelers (Blumenberg and King 2019) and who likely account for much of the suburb-to-core-city commuting.

Of those interviewees who are employed, they either commute to a nearby suburb or within the same suburb where they live. It is important to note that two interviewees occasionally travel to places in other parts of the region for work, as the nature of their jobs—one is a landscaper and the other is a construction worker—sometimes requires them to travel to far-away job sites, but most of the time, their commutes entail traveling to relatively close—albeit wealthier and whiter—suburbs.

But due to mobility constraints that spatially confine and isolate low-income suburbanites of color in small activity spaces, even reaching jobs in nearby suburbs (let alone in distant central cities like downtown Los Angeles) can be difficult, if not impossible. Of course, similar to prior research (Blumenberg 2016; Smart and Klein 2020), I find that car access is key to being able to expand spatial access to employment opportunities. As Table 13 shows, all interviewees with

jobs have car access—which they describe as particularly important in dispersed suburban environments—and all those who are not employed or unemployed lack car access.⁴⁹

Table 13 - Employment Status of Interviewees by Car Access

	Employed			Not Employed or Unemployed		
	Count	Percent of Those Employed (<i>n</i> =14)	Percent of All (<i>n</i> =30)	Count	Percent of Those Not Employed or Unemployed (<i>n</i> =16)	Percent of All (<i>n</i> =30)
Has Car Access	14	100%	47%	10	63%	33%
No Car Access	0	0%	0%	6	38%	20%
Total	14	100%	47%	16	100%	53%

To illustrate the ways that mobility constraints—rooted largely in a *loss* of car access—hinder the ability to break out of confined activity spaces to access to jobs in nearby suburbs, I elaborate on two stories that I introduced in the previous chapter.

The first story is that of the 27-year-old woman living in a mobile home park in Jurupa Valley, who got in a car accident on her way to her cashier checking job in the nearby suburb of Upland. Because she could not immediately afford to purchase a new car, and because she could also not afford to use ridehail to get to work every day, she had to leave her job. She is now reliant on the local public transportation system to get around and is actively seeking employment, but, she said: “Two years, since when I stopped working. Transportation kind of makes it hard to get a job because the [public] transportation out here isn't that great and you have to catch multiple buses.” Additionally, she is having difficulty finding a job near a bus stop—a necessity as the bus is the only feasible, consistent way for her to get to work. Her boyfriend, with whom she lives, has a car, “but he takes it a lot for work. So, he does

⁴⁹ Of course, the data in Table 13 alone do not show a causal relationship between car access and employment, but rather provide context for the qualitative data in this chapter to *do* show a causal relationship.

construction and mechanic [work], so he takes everything in his car and so it's not like I can just drop him off at work and then drive around with his car. He needs it.” So, in terms of spatial access to jobs even in nearby suburbs, as she put it: “I crashed the car and I kind of never recovered from that.”

The second story is that of the couple in Riverside who are currently unhoused. They are each 29 years old, they have been together since they were teenagers, and they have five children. Recall that after losing their fast-food and construction jobs, they lost their car, because without income, they were unable to make their auto loan payments. During this time, their housing also became unstable, which led to their children being placed in foster care. But before losing their housing and children, and after losing their jobs and the car, for a brief period of time, they secured jobs at a warehouse. However, without their car, their journey to work was treacherous: “...we literally [took] an hour bus drive and then literally walked almost two and a half hours to the job...a night shift.” At one point they acquired a “little kid bike” that they used to travel between the bus stop and the warehouse—he would pedal, and she would sit on the handlebars—but within a few days, the bike broke, and they returned to the long walk.

While they were at their night shift at the warehouse—and traveling the cumulative seven hours to and from work—the male interviewee’s mother would help take care of their children. As the female interviewee described, their children would say, “‘Mom, Dad, we miss you.’ We’d be like, ‘We’re trying to work and trying to keep a roof over your guys’ head.’” Eventually, because the commute was so long and because they seldom saw their children, they left their night-time warehouse jobs: “...it was too far. It was almost taking a trip to Vegas.” They could only sustain their commute for more than a few weeks. However, as she explained, they did not realize what this would lead to:

“...then next thing you know, a couple of months, three months, they came knocking on our door, and they were looking at our whole situation and eviction. We were a mess, and they were like, ‘We got to remove these children.’...But my kids are my life, so it's kind of like they took my life....I'm very mad and upset with the system. In all honesty....I feel like they're doing this to the wrong...but at the same time, I have to be grateful because we don't have a job right now, so at least [our kids] have food. At least they're not out here struggling with us in a way. Not that I blame myself, but I just wish we could have...we *had* a job...I still had my kids, and I was just like, if we would've just held on. But at the same time, we were killing ourselves, you know?”

Clearly, mobility constraints in highly dispersed suburban environments that inhibit job access can have tragic consequences. While housing instability ultimately led to the loss of their children and their current unhoused situation, the loss of their car—and so the loss of mobility and access to employment opportunities—set the stage. Now, they start almost every day at the public library to use the computers to search and apply for jobs—and then, primarily on foot, they go to a church to get food and clothes, the cemetery to visit relatives’ graves, the park to kill time, the plasma donation center to exchange blood for money (if they make the required body weight), and, if they have the funds, a motel for the night (see the sketch map in Figure 29).

About their day-to-day grind, the female interviewee said:

“I get frustrated because I'm a very hard worker. I always worked hard for my family and provided and having to do all of this is very frustrating. It's emotional, stressful. I feel like nobody's hearing me out. I want to be heard.”

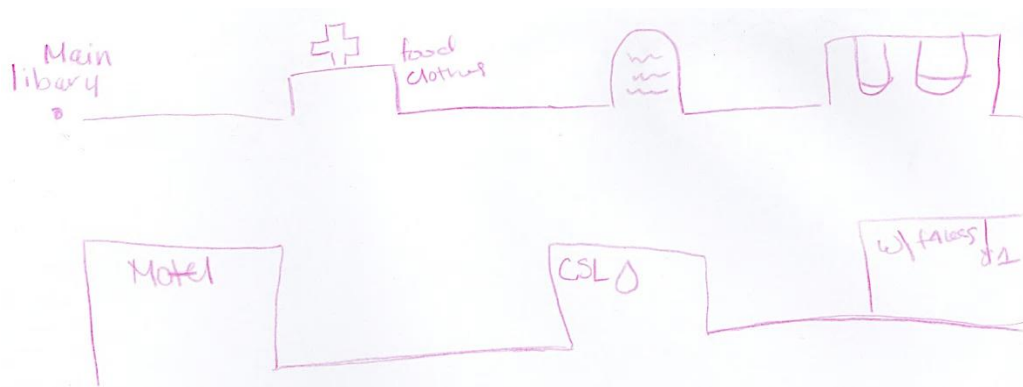


Figure 29 – Sketch map of the activity space of a 29-year-old Latinx woman without car access who is unemployed (i.e., does not have a job but is actively seeking one), living in Riverside, CA

On top of a lack of spatial access to jobs due to mobility constraints, interviewees report that suburban employers discriminate against applicants who rely on public transportation. This finding aligns with that of Coren, Lowe, and Barajas (2022) in their research on carless Black job seekers in the Chicago region, including those in the suburbs. Specifically, the 27-year-old woman living in Jurupa Valley explained that relying on the bus has been a red flag for employers during the application process: “I can't just apply for a job and be like, ‘Oh, I picked [up] the bus, but don't worry, I'm super savvy at it.’ They don't want to, they're like, ‘Unreliable.’ Because they think that buses are just unreliable.” Likewise, the 29-year-old unhoused woman in Riverside has experienced similar discrimination: “If you're applying through agencies and warehouse jobs, you mess up your opportunity with them because....the bus....Some of them, oh, that's reliable, some of them no. Or they mark you down and they take you off their agency.”

Finally, as I discussed in the previous chapter, the bus schedule does not accommodate that of, as the 20-year-old interviewee from Riverside put it, “working-class” (i.e., lower-wage) jobs, particularly shift work. Again, the unhoused interviewee (who moved to Riverside from Los Angeles when she was a teenager and who has had multiple fast-food restaurant jobs in the area) articulated how the limited bus schedule—not just geographic coverage—severs access to shift work, in particular:

“[Public] transportation out here is not like L.A....it sucks....when you get a first and a second shift, it sucks because the way the buses run. So, you're basically risking it on your first shift to get to work. After shift, you're fine. Second shift, you can make it to work, but how are you going to get back home?”

And then for the third shift, she explained: “You could get there and then you come out [of work] and the bus isn't running....But yeah, the buses out here, it's not really like L.A.,” by which she means the buses in Riverside do not cover a worker's whole shift, as they do not run

as frequently or at “odd” hours. Similar to what Palm et al. (2023) find in their research on the effect of commuting to night shifts without a car, this interviewee expressed feeling defeated by the process of getting to work (when she had a job): “It's like, it does put a stress and a tone on yourself, too....So I think they need to fix that a little bit out here....the bus scheduling.”

In short, a lack of car access and so being reliant on public transportation and/or walking—which significantly limits one’s geographic reach and so activity space—is the primary hinderance to spatial access to employment options and opportunities, which is particularly acute in dispersed suburban environments.

So Why Do They Live in Suburbs?

In light of the multitude of mobility constraints that low-income people of color experience in suburbs, why do they choose to live there? In this section, I briefly describe the reasons that interviewees named for why they reside in their suburban area in spite of their difficulties in getting around and accessing opportunities elsewhere: 1) housing affordability; and/or 2) familial and community networks.

Housing Affordability

Aligning with much of the literature examining residential location of low-income people and people of color in suburbs (Covington 2015; Howell and Timberlake 2013; Pan et al. 2023; Schafran and Wegmann 2012), among interviewees, housing affordability is the most cited reason for their residential location: 12 out of 30 interviewees stated it is the primary reason they live where they live, and more said it was a major contributing factor. To interviewees, housing affordability is about cost per unit of space and/or being able to attain home ownership.

About one third of interviewees who cited housing affordability as the primary reason for their residential location moved to their current suburban areas (in Riverside and San Bernardino counties, or the far eastern side of Los Angeles County) from more coastal urban areas (in Los Angeles and Orange counties). For example, a 53-year-old Latinx immigrant from Mexico who initially moved to the U.S. to be with his wife, also from Mexico. While they first lived in a rental unit in Fullerton—a predominantly middle-class (and white) area in Orange County—he explained, “Once we were together, I noticed that the house prices here in Riverside were very cheap. We wanted to buy a house...that’s how we ended up here, mainly because of the affordable housing.”

Multiple interviewees explained that in the lower-density suburbs, they could find bigger houses that could accommodate large families at a much lower price than they could find in the more urban areas along the coast. As a 62-year-old Latinx immigrant from Mexico explained, she and her family initially lived in the city of Rosemead located about 10 miles east of central Los Angeles. But, “We had 7 kids, imagine! So...we found this [house] with 4 bedrooms” about 20 miles farther east in Pomona. She continued: “Here, and with the other [unit] in the back, I brought my brother from Mexico, and he stayed in the back, and I stayed here with my kids.” In sum, as a Black interviewee who moved from Long Beach (in Los Angeles County) to the inland suburb of Riverside (in Riverside County) explained, “...a lot of people is coming here now because it's more space...LA is too crowded.”

Census data bear this out: As Table 14 (Social Explorer, Inc. 2025) shows, median home values in Los Angeles and Orange counties are much higher (\$783,300 and \$915,500, respectively) than in Riverside and San Bernardino counties (\$510,300 and \$475,000, respectively), even though housing units have about the same number of rooms. And while the

median monthly rent is not that much higher in the coastal counties than the inland ones, the inland units are generally bigger (again, in terms of the number of rooms). All this means that both homeowners and renters can get more “bang for their buck” in the inland, more suburban counties than in the coastal, more urban ones.

Table 14 - Housing Metrics by County in Southern California

	<i>Coastal Counties</i>		<i>Inland Counties</i>	
	Los Angeles County	Orange County	Riverside County	San Bernardino County
Median Home Value	\$783,300	\$915,500	\$510,300	\$475,000
Median Number of Rooms in Owner-Occupied Units	5.80	6.10	6.10	6.10
Median Monthly Rent	\$1,893	\$2,352	\$1,814	\$1,706
Median Number of Rooms in Renter-Occupied Units	3.70	3.90	4.30	4.30

It is critical to note, however, that county-level metrics mask extreme socioeconomic differences across space *within* counties, and so only provide a very general picture of the housing landscape. (The very premise of this study, which research shows, is that racial segregation is increasing across and within suburbs.) And indeed, I find that it can be difficult for low-income families to find housing that is both affordable and has enough space for everyone in these suburban areas. For example, a 20-year-old Latinx college student living with her immigrant parents and two brothers was recently displaced from her home of 12 years in Riverside due to a change of ownership of the house her family was renting, and subsequent rent increase. She said, “...it was really difficult, just because we don't have a very good income to be moving whenever we need to. So, it's kind of a hassle to see where five people can live.” And so,

her parents—one of whom works as a gardener and the other works at a nearby wood processing factory—“were forced to find a cheaper area to live in,” which is how they ended up in the adjacent suburb of Jurupa Valley.

A somewhat surprising finding is that seven out of 30 interviewees (who, as a reminder, were randomly sampled at grocery stores in suburbs) live in some type of subsidized housing. Among this relatively large proportion of interviewees (23%), such housing includes using a Section 8 housing voucher to rent a market-rate single-family house or living in a multi-family affordable housing development owned and operated by a nonprofit organization.⁵⁰ But in fact, Covington et al. (2011) report an increase in the “suburbanization of housing choice voucher recipients” in recent years. And indeed, each of the interviewees living in such housing pointed to the availability of and opportunity to live in their affordable unit, specifically, as the reason they live in the area. For instance, a 56-year-old Latinx mother of seven explained that Pomona was the only place she could find in the Los Angeles region with a house for rent that could accommodate her large family *and* take her Section 8 voucher. She explained that since she would lose her voucher if she did not use it in a certain amount of time, she felt that she had no choice but to move her family from the inner suburb of La Puente, located closer to Los Angeles, farther outward to Pomona.

⁵⁰ The developments that interviewees live in are partially supported by public programs, such as the federal Veterans Affairs Supportive Housing (VASH) program—which provides rental assistance, case management, and services for unhoused veterans (U.S. Department of Housing and Urban Development n.d.)—and California’s Homekey initiative—which provides resources to convert commercial properties like motels to developments like permanent supportive housing (California Department of Housing and Community Development 2025). The Homekey initiative is not to be confused with Los Angeles’ Project Roomkey, which the *After Echo Park Lake* research collective (2022) found to be a mechanism to displace and disappear unhoused people rather than to provide a pathway to permanent housing via temporary hotel stays, which was the program’s promise.

Similarly, a 29-year-old Black mother of two explained that she moved to Pomona because a social worker referred her to an affordable housing development there, in which she eventually got placed:

“I didn't know, honestly, didn't know where to look or how to look....as a single mom and it's just me, I don't really have family and things like that....but it was affordable. And I said, ‘Well, whatever, we just have to live here’....and that's how I ended up here, just wanting my own space....I was never looking in Pomona.”

Likewise, a 33-year-old Black mother of two living in a subsidized unit said that she moved from Long Beach to Riverside for “housing purposes.” Her experience is that affordable housing waitlists are much longer in cities like Los Angeles and Long Beach compared to Riverside: “...in L.A., the waiting list is from here to Florida. They have all these people...Most people here [in Riverside] work, but we have our homeless population, we have our low income, but the list is maybe [to] here, so we can get around to it.” In contrast, she described getting an affordable unit in Los Angeles or Long Beach as feeling “somewhat impossible.”

Familial and Community Networks

While many (10) interviewees live in the area because they grew up there, for most, it is still rooted in housing affordability—meaning it was the initial motivation for their families to move to the area and also, at least part of, the reason they stayed. Specifically, some explained that it was the opportunity to buy a home that brought their parents, or even their grandparents, to the suburbs. For example, a 32-year-old Black woman living with her partner in Riverside explained that her parents, both of whom worked for the Los Angeles Police Department, moved from Los Angeles to the Inland Empire in 1987 to buy a house—the same year the *LA Times* ran a story entitled “‘Black Flight’ from L.A. reverses trend, study discovers” (McMillan 1987).

Both of her parents continued to commute to L.A. every day until they retired (which is actually only one of two stories that I heard of people commuting all the way to Los Angeles from the Inland Empire).

Another example is that of a 54-year-old Latinx immigrant, whose family initially lived in Los Angeles but then moved to Pomona when she was a child:

“How we came to live here was the opportunity my parents had to buy their own house, and when I reached the age when I got married, I thought about the future and who would help me with my family. And to not move far from my mom, from my parents, I stayed here. My kids do ask me, ‘Why did you stay here? You had the opportunity to live in a better city.’ And I told them that when you are in the working world, you need someone who is your right hand, and for me, that was my mom. I hired a real estate person. They showed me houses in other areas that were better, but since my mom doesn’t drive and wouldn’t be able to transport herself, I decided to stay very close to where she lived.”

Finally, aligning with the large body of scholarship examining the spatial evolution of immigrant “gateways” and recent residential location patterns in the U.S. (Carrillo et al. 2016; Farrell 2016; Singer 2004; Singer et al. 2008; Walker 2018), a few interviewees moved from their home countries directly to the Inland Empire suburbs because of familial connections (recall that 40 percent of interviewees are immigrants). Epitomizing this story, a 53-year-old immigrant explained that he and his family moved from Mexico to Ontario when he was six years old, first living with his uncle, then finding their own apartment. And indeed, he explained, “...where we moved to those apartments, that's where a lot of the people from the small town that my dad's from, in Mexico...and that's pretty common around there...people from the same towns in Mexico” move to the same areas in the Inland Empire. He now works in construction and lives with some of his adult children in a house a few blocks away from his parents, who still live in his childhood home.

A Pervasive Fear of Losing Car Access

So, while housing affordability and familial/community networks draw low-income people of color to the suburbs, many must then live with the often-daily burden of mobility constraints, rooted largely in unreliable car access. Indeed, the stakes of mobility are high, particularly in terms of expanding one's potential activity space and accessing employment in nearby suburbs. Indeed, the car enables both finding and commuting to job—and a job enables the purchase and maintenance of the car. And so, the fear that people with car access expressed about losing car access, in particular, was palpable and pervasive. Without a sufficient transportation safety net in the suburbs—which arguably exists in higher-density cities, at least relative to low-density suburbs—the thought of losing car access is extremely stressful for interviewees who currently have it. As a 32-year-old Black woman living in Riverside with automobile access explained: “...if that car takes a shit, that's it. That's it....the engine light's on now. It's time to go get it serviced. I've got to see what's going on. That shit petrifies me.” It scares her because there is simply no alternative means for her to travel to her job at a third-party logistics company in a nearby suburb—so if she lost her car, she would likely lose her job. Since becoming pregnant, she is even more anxious about the potential of losing her car (to something like mechanical failure), as her car will play a vital role in her ability to provide for her child and partner (who is currently unemployed and car-less⁵¹).

Likewise, when I asked a 29-year-old single Black mother of two living in affordable housing in Pomona if she had ever experienced her car not working, she responded: “That's a

⁵¹ Here, I use the word “car-less” intentionally. As Brown (2017) explains, car-less means not owning a car out of financial or physical necessity. This is different from car-free, which means not owning a car because one chooses not to. As Brown finds, contrary to popular rhetoric—and that of hopeful urban planners—79 percent of zero-car households in California are car-less, not car-free.

stressor. I did have one time where I did have to take my car and that's stressful. Because my kids, like I said, they go to school in Monrovia and then we live here in Pomona, so that's stressful.” (Monrovia is a wealthier and whiter suburb⁵² located about 20 miles northeast of Pomona, where this interviewee perceives the schools to be “better” and so is willing to travel there on a daily basis.)

Those with car access do not just fear mechanical failure or losing the ability to pay for gas, but also worry about the potential for car accidents. While this anxiety makes sense in light of what is at stake in people’s lives, one of my most startling findings is that interviewees’ fear of car accidents is not principally related to their own personal safety; rather, they fear harm to their vehicle. In just one instance, an interviewee—the 59-year-old Latinx immigrant from Mexico living in Pomona who provides full-time care to her granddaughter—discussed potential bodily harm from car accidents (on which I elaborate in the previous chapter), but even in this case, it was related to a loved one’s safety, not her own.

An example of this sentiment is that of a 20-year-old college student living with her family in Jurupa Valley, whose car got totaled when she was rear-ended by a drunk driver as she was driving to campus to attend class. Rather than talking about bodily harm, she talked about the urgent need to get a new car as she is responsible for driving her younger brother to middle school (because her parents, one of whom works in landscaping and the other works at a factory, start their jobs far earlier in the morning than their son’s school opens, so they are unavailable to take him). When I followed up by asking if she herself got hurt in the accident, she treated it as an afterthought: “I was injured, but I mean, ‘what can you do?’ type of thing.” Understandably,

⁵² Pomona is only 10 percent white and the median annual household income is \$78,869; Monrovia is 30 percent white and the median annual household income is \$97,083 (Social Explorer, Inc. 2025).

she is now even more worried about getting into a car accident with another vehicle, specifically, the large semi-trucks related to the massive logistics industry that blanket the Inland Empire (Collins et al. 2024):

“...there's so many trailers [i.e., semis] during the hours. I feel like it doesn't matter what time you go, there's always going to be a bunch [on the freeway]. And so, I don't know, I'm just scared of getting into an accident, so I prefer not to take [the freeway].”

Fear of losing car access is so strong that a 41-year-old woman living in Jurupa Valley with her husband and their three young children explained: “...we have a Tundra truck, which is like an emergency vehicle if something happens with the cars...we try to have an extra.” While her household of five relies on just one income, they saved the money to purchase a third vehicle, showing the lengths people will go to mitigate stress related to the possibility of losing car access—and so access to opportunities and resources. This finding aligns with that of Blumenberg and Agrawal (2014), who find that low-income people will go to great lengths to secure access to an automobile. While fear of mechanical failure and/or car accidents does not stifle travel the way that safety concerns related to transit and walking do (see the previous chapter), among interviewees with car access, the stress related to potentially losing car access is always there.

Conclusion

This chapter shows that mobility constraints bound low-income people of color to small activity spaces clustered around their residential locations (or the places they generally stay) in suburbs. While housing opportunities draw low-income people of color to suburbs, and residential location drives racial segregation in suburbs, mobility constraints cement racial-spatial isolation in suburbs. Such isolation hinders spatial access to opportunities, principally

employment in nearby, better-resourced suburbs. While transportation has the potential to combat racial residential segregation—by enhancing freedom of movement and so widening spatial access to opportunities—I find the often-inhibitive costs of operating an automobile, a lack of adequate alternatives to the automobile in suburbs, and transportation-related safety concerns and fear *inhibit* mobility.

Some urban planners may initially view the finding about small activity spaces as a good thing: In recent years, the idea of the “15-minute city,” in which the needs of residents “are accessible on foot or by bicycle within a short perimeter in high-density areas” (Moreno 2024), has become an increasingly popular one to help humanity combat climate-change-related emissions from vehicles as well as improve our quality of life via walkability. While these are, of course, worthy goals, such a vision is only possible in “high-density areas” where origins and destinations are in close proximity. What this chapter shows is that in low-density suburbs, a small activity space can translate into spatial confinement or containment,⁵³ limiting spatial access to amenities and opportunities in other places. In their brilliantly titled article “Crabgrass Confinement,” Pan et al. (2023) find similar results for low- and moderate-income suburbanites in the San Francisco Bay Area. But in the context of increasing racial segregation in suburbs, including in the Inland Empire, my findings suggest that perhaps we can also understand such containment as *racial* containment (Carpio 2019; De Lara 2018).

⁵³ One interviewee, a 59-year-old Latinx immigrant with car access, who provides care for her granddaughter full-time, said: “I don’t go out. I don’t leave Pomona. All my medical, church, stores, everything is in Pomona....I walk, yes. In fact, it’s more convenient for me. If my granddaughter wants a piece of chicken, it’s right here. If she wants a hamburger, it’s right here. For those things, I don’t use my car because I have everything nearby....everything is close by in my community. So, I don’t need a car; I can walk.” However, her experience is the exception. Also, she expressed much stress surrounding driving as she experienced a car accident when her granddaughter was in the automobile, which, as she explained, motivates much of her walking.

Chapter 7: Conclusion

A Summary of Findings

In this dissertation, I examine the relationship between mobility and racial-spatial isolation in suburbs. I undertook this project in the context of the peripheralization of segregation, which involves interconnected processes of racial exclusion (to maintain white suburban space) and racial containment (to confine people of color to “less desirable” suburban areas) (Carpio 2019; De Lara 2018; Kirkpatrick and Gallagher 2013; Schafran 2018). Using both quantitative and qualitative data and methods, I tested my hypothesis that the spatial isolation of low-income people of color in increasingly segregated and dispersed suburban landscapes is diminishing their spatial access to resources and opportunities—and that mobility constraints are a contributing factor to racial-suburban isolation. I conceptualize and measure spatial isolation not just in terms of residential location, but in terms of all locations (e.g., home, work, school) that individuals visit as part of their daily activities and travel.

Research has long shown that racial/ethnic disparities exist in access to an automobile (bunten et al. 2024; Klein and Smart 2017; Taylor and Ong 1995), a particularly strong determinant of one’s (physical) mobility (Blumenberg and Manville 2004; Blumenberg and Pierce 2014; Ong and Miller 2005). In my examination of California, I find that not only is this the case in urban areas, but in autocentric and dispersed suburbs as well. Drawing on data from the 2017 National Household Travel Survey California Add-on sample, I find that across both of the neighborhood types, Latino, Asian American and Pacific Islander (AAPI), and Black working-age adults have lower average levels of car access—and so lower levels of mobility—than white working-age adults.

In terms of the relationship between car access and racial-spatial isolation, living in a fully-equipped household (in which there is at least one car per adult) increases white isolation in activity spaces in suburbs. Conversely, living in a car-deficit household (in which there are more adults than cars in the household) increases Latino isolation in activity spaces in suburbs. My qualitative analysis, in which I interviewed 30 low-income Latinx and Black working-age adults in Southern California's largely suburban Inland Empire, validates these findings. Specifically, I find that mobility constraints bound low-income people of color to small activity spaces, which cluster around their residential locations in suburbs. In the context of the peripheralization of segregation, these quantitative and qualitative findings suggest that being highly mobile contributes to processes of racial exclusion, which maintains white suburban space, and being mobility constrained contributes to processes of racial containment in more economically-distressed suburbs.

Extending beyond the findings from the quantitative analysis, my qualitative analysis details mobility constraints in suburbs as well as the consequences of spatial isolation in economically-distressed suburbs. Specifically, I find that while working-age adults of color living in suburbs have higher levels of car access than those in urban areas, car access for those in auto-oriented suburbs can be extremely unstable. As Figure 30 illustrates, there are multiple pathways to losing car access, often unexpectedly—from a car accident to health problems to losing a job to a lack of gas money. When one loses car access, they turn to alternatives, like getting rides from others or public transit. But in the suburbs, the spatially- and temporally-sparse transit coverage can lead to extremely long wait times, which often force people to walk, severely limiting where they can go and how far they can get. And so, rooted in insufficient and

unreliable car access, suburbanites of color, particularly those who are low-income, face a multitude of mobility constraints in their day-to-day lives.

While housing opportunities and familial connections draw people of color to suburbs, and restrictions on residential location drives racial segregation in suburbs, as Figure 30 suggests, mobility constraints cement racial-spatial isolation in suburbs. Such isolation is particularly dire for those living in suburbs, compared to those in urban areas, as such geographies are dispersed and extremely difficult to traverse without a car. Ultimately, I find that spatial isolation hinders access to opportunities, principally employment in nearby, better-resourced suburbs.

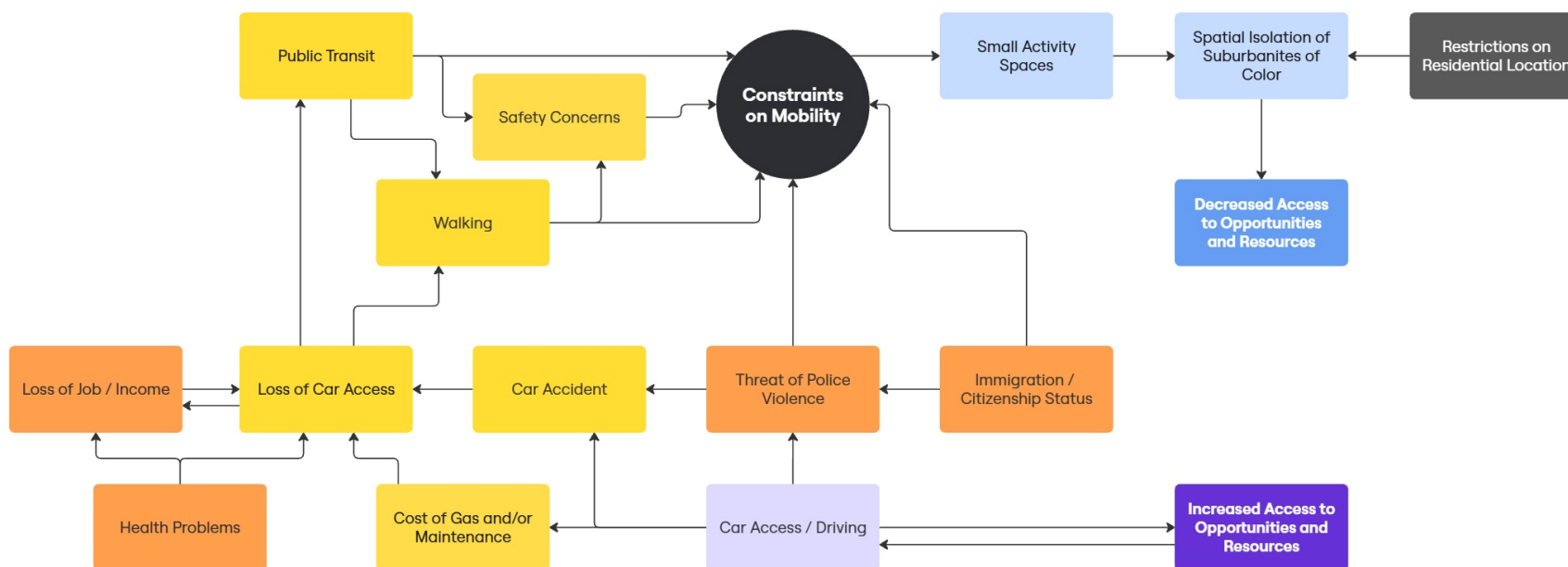


Figure 30 – Causal Pathways Relating Factors Contributing to Mobility Constraints and Racial-Spatial Isolation in Suburbs

Note that yellow indicates transportation-related factors and orange indicates other relevant factors contributing to mobility constraints.

Implications for Planning

The Problem Isn't Extreme Commuting—It's Isolation

Research shows that as U.S. regions have continued to disperse, in terms of both people and jobs (Blumenberg and King 2021; Raphael and Stoll 2010; Schouten 2021), commute distances have continued to increase (Blumenberg and King 2019). In the wake of the “suburbanization of poverty,” this also includes commutes of low-income people (Allen and Farber 2021; Blumenberg and King 2019). But in the context of low-income people moving outward in search of affordable housing (Howell and Timberlake 2013), popular narratives about their subsequent “extreme” or “super” commuting have escalated, with headlines such as “California Today: The Rise of the Super Commuter” (McPhate 2017) and “When a lower cost of living comes with an hours-long commute” (Loeza 2024) popping up in recent years. And while some individuals certainly suffer from super commuting—commonly defined as commuting for 50 miles or 90 minutes one way (Blumenberg et al. 2025)—recent research shows that such commutes are not at all the norm, especially for low-income people.

A recent study (Blumenberg et al. 2025) examining super commuting in the Los Angeles region found that only 4.5 percent of workers are super commuters, and that such commuters are more likely to live in higher-income households than not. While these numbers are greater in the inland and more suburban counties of Riverside (7.8%) and San Bernardino (6.4%) than in the more urban and coastal counties of Los Angeles (4%) and Orange (3%), this is still a relatively small proportion of commuters. Likewise, in the San Francisco Bay Area, only 5.1 percent of all workers and only 4.4 percent of low-income workers have an extreme commute (The San

Francisco Foundation, PolicyLink, and USC Equity Research Institute 2025).⁵⁴ In my own research on this topic (Wander 2024), I compare the commutes of low-income adults in California’s urban areas and suburbs (once again using the 2017 NHTS California Add-on). I find that while living in a suburb is associated with longer-distance commutes relative to living in central cities, there is no significant difference between commute distances or times for low-income workers living in California suburbs versus cities.

As Blumenberg et al. (2025) explain, lower-income workers are less likely to super commute since they do not have the resources to sustain such long journeys, nor do they have the types of higher-paying jobs that make such commutes worth the financial or time costs of so much travel. My findings (Wander 2024) suggest that low-income workers who move to outlying areas find jobs closer to their homes in the suburbs, particularly those in lower-wage service and sales positions. On the rare occasions that low-income workers *do* consistently super commute, it is more likely due to longer travel times, rather than farther travel distances, related to relying on (usually multiple) buses (Blumenberg et al. 2025)—aligning with what the “modal mismatch” body of research has argued for some time (Taylor and Ong 1995). And indeed, one of the only two stories I heard of super commuting involved extreme travel times associated with using the bus and walking—a super commute the interviewees could only sustain for a few weeks due to the strain it caused in their lives, mostly not being able to see their children because they were spending so much time traveling.

⁵⁴ While Blumenberg et al. (2025) consider duration (50 miles, one way) or distance (90 minutes, one way) in their definition of super commuting—depending on the available data—in the Los Angeles region, the Bay Area Equity Atlas (The San Francisco Foundation, PolicyLink, and USC Equity Research Institute 2025) defines extreme commuting just in terms of duration (90 minutes, one way). Nonetheless, they find similar results.

While super commuting certainly results in negative consequences for people (in terms of health and wellbeing)—let alone the environment (in terms of auto-related environmental degradation) (Chatterjee et al. 2020)—my findings align with recent research, suggesting that super commuting is *not* a persistent issue facing low-income people of color living in suburbs. Rather, my findings indicate that they face barriers that *hinder* their freedom of movement. In other words, too little mobility, rather than too much mobility, is the pervasive problem facing low-income suburbanites of color.

Moreover, rather than people necessarily traveling between far reaches of metropolitan regions, as some of the aforementioned super commuting and suburbanization of poverty literature claims, this dissertation research shows that mobility constraints result in low-income people of color in suburbs having relatively small activity spaces, leading to spatial isolation. And so, instead of focusing on reducing vehicle miles traveled (VMT) of low-income suburbanites of color, planners—particularly those who care about addressing racial inequality in transportation—should focus on ways that better enable their mobility. This, in turn, will increase their spatial access to opportunities and resources, largely in other, nearby suburbs.

A Lack of Car Access in Suburbs as State Neglect

By relating mobility to racial-spatial isolation, this dissertation illuminates racial-spatial isolation in segregated suburbs as not just a problem with which housing departments must grapple—due to restrictions on residential location—but one that transportation agencies must consider, as well. But what does enhancing the mobility of low-income people of color in suburbs look like? While prescribing planning interventions is not my purpose here—indeed, the data I gathered and analyzed cannot adequately answer this question—this research makes clear

that plans and policies to improve people's mobility and access in suburbs will necessarily differ from those in cities.

In the U.S., public transit is the traditional mechanism by which the state tries to improve mobility and access for those without. But public transit only really works—meaning, it only really gets people where they need and want to go in a reasonable amount of time—in high-density areas where origins and destinations are close to each other (Ewing and Cervero 2001). In fact, Smart and Klein (2020) find that only in very densely developed areas with “truly excellent” transit service (in terms of high frequency and reliability) does transit provide the same level of job access that allow them to “move up the economic ladder at the same rate as families with cars” (2020:1290). And so, Smart and Klein (2020) argue that it only really makes sense to improve transit where service is “*nearly* excellent—rather than expanding service to new areas or improving frequency to outlying areas” (2020:1290). Suburbs simply do not contain the density requirement that makes transit work. So, while interviewees report that suburban transit's spatially- and temporally-sparse coverage is extremely limited, the solution to enhancing the mobility of low-income people of color in suburbs is not necessarily to increase transit service.

Research overwhelmingly shows that no mode compares to the automobile in terms of the mobility benefits. What this dissertation underscores is that those facing unstable car access in suburbs face a uniquely precarious situation in terms of their mobility and spatial isolation. If the aim is increasing the mobility of low-income suburbanites of color—thereby decreasing isolation and increase spatial access to opportunities and resources—the obvious solution is to provide some sort of car access. Of course, automobility, as the dominant transportation system, is environmentally unsustainable in its current form. But for those living in suburbs, cars are the

only (current) option for actual freedom of movement. By withholding car access, the state is playing an active role in hindering the mobility of low-income people of color and so perpetuating racial-spatial isolation. This is particularly negligent in suburban environments. Indeed, when I asked the 27-year-old Latinx woman in Jurupa Valley—who lost her car in an accident, and then her job—"In a perfect world, how would you get around?" she simply said: "Having my own car. Just having my own car." Her life would surely be changed by public programs that provide low-income car subsidies (King et al. 2019; Klein 2024). But, as my qualitative analysis shows, car access is not just about car ownership. Other potential state-led solutions include subsidized ridehail (Deakin, Halpern, and Parker 2020) and microtransit services that provide pooled on-demand transportation with flexible routing (Pan and Shaheen 2025).

Building on what we know about the difficulties of getting around without a car in suburban environments—and the often dire consequences of such carlessness—an important task of future research, and planning practice, is designing new public transportation models that actually and accurately account for the dispersed nature of suburban environments.

Contributions to Scholarship

Research

By focusing on differentiated mobilities along the lines of race and suburban space, my dissertation research expands the spatial scope of the field of transportation—particularly transportation justice—which tends to privilege the urban over the suburban. Studying transportation justice issues in suburbs is critically important since, as I have repeatedly noted, a majority of people in the U.S., across the income spectrum and racial/ethnic groups, now live in

suburbs. Further, by utilizing the peripheralization of segregation framework, rather than the suburbanization of poverty framework, my research uplifts the racial dimensions, in addition to the income dimensions, of transportation-related concerns in changing suburbs. Specifically, this dissertation shines a light on the multiple dimensions of mobility constraints facing low-income people of color in suburbs, which are different from the challenges faced by those in cities. I also suggest that such mobility constraints contain low-income people of color in small activity spaces, and show how such containment spatially isolates them from economic opportunities in nearby, better-resourced suburbs.

Another critical contribution is my use of activity spaces, rather than just residential location, in conceptualizing racial-spatial isolation. Specifically, my work responds to those calling on scholars to examine broader spatial contexts of where people spend their time (Athey et al. 2021; Cagney et al. 2020; Kwan 2012). While we know racial residential segregation exists—across regions as well as within suburbs (Lichter et al. 2015, 2023)—my findings show that racial segregation exists within people’s spheres of circulation, as well. Specifically, using the isolation index, I show that the mean levels of racial isolation of working-age adults’ activity spaces, not just their residential neighborhoods, largely reflect their own racial/ethnic identities. Furthermore, my findings show that such racial-spatial isolation in individuals’ activity spaces exists in both urban *and* suburban areas.

Turning to methods, my mixed-methods dissertation project helps bridge the “qualitative-quantitative divide” in transportation research, particularly that which is spatially-focused (Goetz, Vowles, and Tierney 2009). My quantitative work, namely the use of multiple sources of secondary spatial data to produce descriptive statistics and regression models, provides a critical understanding of racial/ethnic differences in mobility, levels of racial-spatial isolation by

individuals' race/ethnicity, and the effect of mobility on racial-spatial isolation in suburbs. My qualitative work, namely in-depth interviews and cognitive mapping exercises with low-income suburbanites of color living in economically-distressed suburbs, allows me to both examine *how* people experience constraints on mobility in suburbs as well as go beyond statistical associations to explore causal mechanisms, or *how* (i.e., in what ways) mobility and racial-spatial isolation relate to each other and affect people's outcomes. Each method has its strengths and limitations—which I detail in Chapter 3—but, together, they allow me to more holistically answer my research questions.

Not only does this work help bridge the methodological divide, but, hopefully, it demonstrates the importance of qualitative work, in particular. In transportation research, qualitative methods are less common and even less valued than quantitative approaches. As Hanson (2006) asserts, transportation researchers and funders privilege quantitative methods informed by the fields of engineering and economics as more rigorous, and particularly that which focus on the built environment and infrastructure (Lowe 2021). This means that transportation scholars too often label qualitative methods, which tend to focus on social aspects of transportation and center community knowledge, as less rigorous and so less valuable for research and knowledge production (Lowe 2021; The Untokening Collective 2018; Vigar 2017). In fact, Klein et al. (2025) find that only 3-4 percent of articles published in the top 15 peer-reviewed transportation journals in recent years were qualitative. The absence of qualitative research in transportation means that transportation research largely focuses on the “what” questions, rather than the “why/how” questions (Klein et al. 2025). As Klein et al. (2025) argue, the fact that most studies use quantitative methods and so focus on the “what” questions has left a large gap in transportation knowledge, which has serious implications for both scholarly

discourse and planning practice—particularly in designing and implementing processes to address transportation problems.

The “lack of methodological diversity” (Klein et al. 2025) not only weeds out certain kinds of research questions in transportation, but as mobilities scholars have long argued, quantitative analyses miss critical dimensions of transportation—particularly the *experience* of movement through space as well as the economic and social forces that shape the experience of movement (Cresswell 2010; Sheller and Urry 2006). The neglect of lived experience in transportation research has also led to an absence of certain perspectives—particularly, marginalized communities who experience the gravest transportation disparities but are typically excluded from transportation planning research (The Untokening Collective 2018).

Interestingly, scholars are starting to observe that such research seems to be missing from scholarship on today’s changing suburbs, as well. In Murphy’s review (2017:739) of *The New American Suburb* (Anacker 2015), she explains that the following is missing from the volume, and suburbs scholarship writ large:

“Most notably, the voices of everyday residents in these places are largely absent. We get an excellent sense of the constraints facing suburban governance and nonprofit organizations, but no window into the everyday lives of low-income residents or immigrants who now call the suburbs home. How do these residents experience suburban living? What challenges and opportunities do they face?”

The qualitative research in this dissertation fills a methodological gap, and so a knowledge gap, in both transportation and suburban studies research—specifically, the lived experiences of mobility and isolation in suburban space, and its consequences.

Theory

Finally, I turn to theoretical contributions of this dissertation project. First, this research contributes to the conceptual understanding of the relationship between mobility, race, and space—particularly suburban space. In Carpio’s historical analysis of the Inland Empire, she conceptualizes mobility as a function of whiteness, which allows for “control over one’s own mobility and managing the mobility of others” (2019:10), particularly racialized others. Carpio argues that, over time, mobility control allowed for the creation and management of racialized spatial arrangements in the Inland Empire toward upholding white supremacy. This dissertation project both draws on and, perhaps, fortifies Carpio’s framework by connecting: 1) Mobility constraints—in the form of denying low-income people of color stable access to an automobile—to racial-spatial containment; and 2) Mobility—in the form of stable automobile access—to racial-spatial exclusion in today’s segregated suburbs. My work shows that mobility, or the denial of such, plays a role in how contemporary suburbs still function as part of the “possessive investment in whiteness” (Lipsitz 1995, 2018). In this way, my theoretical contributions are not limited to a single geography (i.e., Southern California’s Inland Empire).

In so doing, my dissertation research also drives toward understanding mobility as a social relation. As Lefebvre (1974) and Soja (1980) famously theorize, social relations shape spatial relations (and vice versa). However, Sheller (2018) argues that in Soja’s conceptualization of spatial justice (2010), he neglects the role of mobility as a critical social relation. Soja’s incomplete theorization is apparent, Sheller argues, in his discussion of Davis’s concept of “fortress LA” (1992), or the destruction of public space through its privatization and, more specifically, its militarization. Soja points to Davis’s description of gated communities as “privatopias” and “security-obsessed islands” that aim to keep out the “imagined threats”—i.e.,

“the homeless and hungry”—as a form of *spatial* control that leads to spatial inequalities. But key to this type of control, Sheller argues, is preventing the “imagined threats *of invasion*” or incursions, which, “after all, are forms of subversive *movement*” (Sheller 2018:37; italics added). Neglecting the movement piece means that Soja misses the crucial role of “mobility control” (Sheller 2018:37) in forging social relations that create spatial inequalities. My in-depth investigation of mobility constraints—again, largely in the form of denying low-income people of color stable access to an automobile—contributes to this idea of mobility as a social relation shaping spatial inequalities.

Future Research

Conducting research on the relationship between mobility and racial-spatial isolation in suburbs opened up several lines of inquiry that have the potential to guide future research. First, while my quantitative analysis explored, to a certain extent, the differential experiences of working-age adults from different racial/ethnic groups, my qualitative analysis reported overall experiences of mobility and isolation of Latinx and Black working-age adults in the Inland Empire. But, of course, different racial/ethnic groups experience mobility, racial-spatial isolation, and racism differently. And so, future research should seek to understand the differentiated mobility and racial-spatial isolation experiences in suburbs toward more clearly identifying how mobility constraints uniquely impact different groups—just as Pulido (2000) and Carpio (2019) do in their examinations of racial-spatial development in Los Angeles and the Inland Empire, respectively, and as Lichter et al. (2023) do in their national-level examination of segregation in cities and suburbs. And since my quantitative analysis drew on a relatively small sample size of Black working-age adults—which made it difficult to draw definitive conclusions

about car access and Black isolation—this research could be particularly informative in geographies that have a different racial/ethnic mix than California, specifically in places where the Black population is larger.

Second, as I noted in my discussion of the limitations of my qualitative analysis, future research would do well to compare my findings regarding the mobility and racial-spatial isolation experiences of low-income suburbanites of color to those of low-income white and higher-income suburbanites. Moreover, it would be useful to test alternative measures of racial-spatial isolation and apply them to regions outside of California to explore whether and to what extent the same issues and relationships arise.

Third, there is much work to do to identify transportation services, infrastructure, and innovations that will help low-income people of color achieve freedom of movement in increasingly dispersed and segregated suburban landscapes. As I explained above, in low-density suburban environments, planners must think beyond standard fixed-route, fixed-timetable systems toward other options. Pan and Shaheen have started to examine the potential of microtransit (Pan and Shaheen 2025)—or “technology-enabled transit service that typically uses shuttles or vans to provide pooled on-demand transportation with dynamic routing” (SAE International 2021)—in suburbs. But, as I argue above, car access-related programs, such low-income vehicle subsidies (Klein 2024), are also important. While car access is key to improving mobility and access of low-income people of color in suburbs, of course, automobility has serious environmental costs. So, as part of this effort, research should also examine ways to offset environmental costs of increased auto access for low-income people of color in suburbs. This could include increasing the costs of driving for higher-income people, who are the ones who travel, predominantly by car, the farthest distances (Blumenberg and King 2019; Pucher and

Renne 2003), and so are largely responsible for most vehicle-related emissions (Nielsen et al. 2021), anyway.

Finally, the suburb is an emergent terrain for transportation and racial justice organizing. Indeed, with racial isolation, containment, and exclusion in suburbs comes contestation (Carpio 2019; Carpio, Irazábal, and Pulido 2011; De Lara 2018; Lung-Amam and Schafran 2018). And so an important area for future, community-based research is exploring the idea of changing suburbs as emergent geographies for transportation and racial justice work by: 1) evaluating the state of the transportation justice organizing landscape in U.S. suburbs; 2) how such landscapes compare to that in urban areas; and 3) the effect of such organizing on transportation—and so economic and social—outcomes of low-income people of color in suburbs.

These four areas of research will further drive toward understanding and achieving freedom of movement for those experiencing the most constraints on their mobility—and in so doing, combat the negative effects of racial-suburban isolation.

Appendix A: Interview Instrument

Warming Up

1. Please tell me a bit about yourself:
 - a. Where do you live? Who do you live with? How long have you lived there?
 - b. Do you have a job? If so, where? How long have you worked there?
 - c. Just a few more questions about yourself, which we ask everyone:
 - i. Do you mind sharing how old you are?
 - ii. What is your racial identity?
 - iii. What is your gender identity?
 - iv. What is your immigration status?
 - v. And what is your annual household income?

Cognitive Mapping Exercise

2. Next, we're going to ask that you take about five minutes to sketch how and where you travel on a typical day. Do not worry if you aren't good at drawing—that's not what this is about, at all. This is just to better help us understand how you think about traveling around your neighborhood on a typical day. Then we can refer to it during the rest of our conversation. Specifically, what places do you go to? What is your route? And how do you get from place to place? Just sketch how you think about this; there is absolutely no right or wrong answer. When you're done, you can walk me through it.

Experiences and Understandings of Space/Place

Now we'll talk a bit more about your neighborhood.

3. How would you describe the area where you live? What about the areas you travel to and through on a typical day? Feel free to use your sketch map as a reference.
 - a. *Follow-up (if necessary)*: If we think about more built-up places like downtowns on one hand, and more rural or desert areas on the other, with suburban places in between, how would you describe the neighborhood where you live? And the neighborhoods that you travel to and through?
 - b. *Follow-up (if applicable)*: What does the word “suburb” mean to you? What does it make you think of? To you, does it have good or bad connotations—and how so?
4. How did you come to live here?
 - a. *Follow-up (if applicable)*: Where did you live in before <INSERT CURRENT NEIGHBORHOOD>? *(If applicable)* Why did you decide to move to <INSERT CURRENT NEIGHBORHOOD>? Do you plan to stay in <INSERT CURRENT NEIGHBORHOOD>?

Experiences of Mobility/Immobility and Spatial Isolation/Connectivity

Now we'll turn to talking about what it's like to get around your neighborhood, and to travel to other neighborhoods.

5. Describe what it's like to get around your neighborhood, and the neighborhoods you travel through and to, on a typical day. Again, feel free to use your sketch map as a reference.
 - a. *Follow-up (if necessary)*: What is it like to drive in and around your neighborhood? What is it like to walk? What is it like to take public transit? What is it like to bike?
 - b. *Follow-up (if necessary)*: Do you travel with anyone else on a typical day? What is that like?

- c. *Follow-up (if necessary)*: Has any of this changed since the pandemic?
6. Are you able to get where you need to go? Are you able to get where you want to go? *Even if they say “no,” proceed with the following questions:*
- a. Do you feel any constraints on your ability to get around? If so, how?
 - i. *Follow up (if applicable)*: If so, how does this make you feel?
 - b. Are there places or opportunities that you feel you cannot get to? If so, what—and why do you think that is?
 - i. *Follow up (if necessary)*: Do you ever choose not to travel to certain places because it’s too hard to get there? If so, in what ways is it too hard?
 - ii. *Follow up (if necessary)*: Do you ever choose not to travel to certain places because it makes you feel uncomfortable for whatever reason? If so, how so?
 - iii. *Follow up (if necessary)*: Does how people perceive your race ever play a role in the places you choose or choose not to travel to? If so, how so?
 - iv. *Follow up (if necessary)*: Do you face any worries or discomforts when traveling to or in a place where folks have a different racial background than you?
7. In a perfect world, how would you get around? And where would you go?
- a. *Follow-up*: What would need to change to allow you to get around this way?
 - b. *Follow-up*: What would need to be in place (like programs, services, and/or infrastructure) to allow you to reach those places?

Wrapping Up

8. Do you have anything else you would like to add?

- a. *Follow up (if necessary)*: Was there something I should have asked, that I didn't?
- 9. Do you know of any friends, family members, or neighbors who might be interested in participating in an interview for this project?
- 10. Finally, do you mind if we keep your sketch? As with our notes and recording, we will keep it completely confidential.

Appendix B: Additional Descriptive Statistics

Table 15 - Household Income by Race/Ethnicity of Working-Age Adults in California Urban Areas (weighted)

	White	Latino	AAPI	Black
Household Income (%)				
Less than \$15,000	7%	14%	10%	30%
\$15,000 to \$24,999	4%	13%	7%	21%
\$25,000 to \$34,999	6%	13%	11%	3%
\$35,000 to \$49,999	6%	13%	11%	11%
\$50,000 to \$74,999	13%	18%	12%	12%
\$75,000 to \$99,999	14%	10%	17%	9%
\$100,000 to \$149,999	24%	12%	16%	12%
\$150,000 to \$199,999	10%	3%	6%	1%
\$200,000 or more	17%	4%	10%	2%
Sample Size (unweighted)	1,183	402	375	112
Population Size (weighted sample)	1,232,387	1,254,047	578,212	236,046

Table 16 - Household Income by Race/Ethnicity of Working-Age Adults in California Suburban Areas (weighted)

	White	Latino	AAPI	Black
Household Income (%)				
Less than \$15,000	6%	11%	7%	14%
\$15,000 to \$24,999	5%	9%	5%	8%
\$25,000 to \$34,999	6%	12%	3%	7%
\$35,000 to \$49,999	7%	13%	8%	12%
\$50,000 to \$74,999	13%	18%	13%	15%
\$75,000 to \$99,999	14%	13%	14%	15%
\$100,000 to \$149,999	22%	15%	21%	15%
\$150,000 to \$199,999	13%	5%	11%	8%
\$200,000 or more	15%	5%	17%	6%
Sample Size (unweighted)	11,214	2,958	2,272	552
Population Size (weighted sample)	5,185,767	5,115,130	2,005,944	635,504

References

- Allen, Jeff, and Steven Farber. 2021. "Suburbanization of Transport Poverty." *Annals of the American Association of Geographers* 111(6):1833–50.
- Allen, Jeff, Matthew Palm, Ignacio Tiznado-Aitken, and Steven Farber. 2022. "Inequalities of Extreme Commuting across Canada." *Travel Behaviour and Society* 29:42–52. doi:10.1016/j.tbs.2022.05.005.
- Anacker, Katrin B., ed. 2015. *The New American Suburb: Poverty, Race and the Economic Crisis*. London and New York: Routledge.
- Athey, Susan, Billy Ferguson, Matthew Gentzkow, and Tobias Schmidt. 2021. "Estimating Experienced Racial Segregation in US Cities Using Large-Scale GPS Data." *Proceedings of the National Academy of Sciences* 118(46):e2026160118. doi:10.1073/pnas.2026160118.
- Avila, Eric. 2004. *Popular Culture in the Age of White Flight: Fear and Fantasy in Suburban Los Angeles*. Berkeley and Los Angeles: University of California Press.
- Baldassare, Mark. 1992. "Suburban Communities." *Annual Review of Sociology* 18:475–94. doi:10.1146/annurev.so.18.080192.002355.
- Banerjee, Tridib, and William C. Baer. 1984. *Beyond the Neighborhood Unit: Residential Environments and Public Policy*. Environment, Development, and Public Policy. New York: Plenum Press.
- Barajas, Jesus M. 2021. "The Roots of Racialized Travel Behavior." Pp. 1–31 in *Advances in Transport Policy and Planning*. Vol. 8, *Social Issues in Transport Planning*, edited by R. H. M. Pereira and G. Boisjoly. Cambridge: Academic Press.
- Barnard, Cheylynda, Marissa Brookes, Jesus "Chuy" Flores, Gregory B. Hutchins, Jacob Kim, Michael Khvat, David Mickey-Pabello, Alice Parra-Rios, Ellen Reese, and Leslie Rivas-Bautista. 2025. *State of Workers in the Inland Empire 2025*. Riverside, CA: Inland Empire Labor and Community Center, University of California Riverside.
- Bastiaanssen, Jeroen, Daniel Johnson, and Karen Lucas. 2020. "Does Transport Help People to Gain Employment? A Systematic Review and Meta-Analysis of the Empirical Evidence." *Transport Reviews* 40(5):607–28. doi:10.1080/01441647.2020.1747569.
- Benediktsson, Mike Owen. 2017. "Beyond the Sidewalk: Pedestrian Risk and Material Mismatch in the American Suburbs." *Mobilities* 12(1):76–96. doi:10.1080/17450101.2015.1019748.

- Bhutta, Neil, Andrew C. Chang, Lisa J. Dettling, and Joanne W. Hsu. 2020. *Disparities in Wealth by Race and Ethnicity in the 2019 Survey of Consumer Finances*. Washington D.C.: Board of Governors of the Federal Reserve System.
<https://www.federalreserve.gov/econres/notes/feds-notes/disparities-in-wealth-by-race-and-ethnicity-in-the-2019-survey-of-consumer-finances-20200928.html>.
- Blumenberg, Evelyn. 2004. "En-Gendering Effective Planning: Spatial Mismatch, Low-Income Women, and Transportation Policy." *Journal of the American Planning Association* 70(3):269–81.
- Blumenberg, Evelyn. 2016. "Why Low-Income Women in the US Still Need Automobiles." *Town Planning Review* 87(5). doi:<https://doi.org/10.3828/tpr.2016.34>.
- Blumenberg, Evelyn. 2017. "Social Equity and Urban Transportation." Pp. 332–58 in *The Geography of Urban Transportation*, edited by G. Giuliano and S. Hanson. New York: The Guilford Press.
- Blumenberg, Evelyn, and Asha Weinstein Agrawal. 2014. "Getting Around When You're Just Getting By: Transportation Survival Strategies of the Poor." *Journal of Poverty* 18(4):355–78. doi:10.1080/10875549.2014.951905.
- Blumenberg, Evelyn, Anne Brown, and Andrew Schouten. 2020. "Car-Deficit Households: Determinants and Implications for Household Travel in the U.S." *Transportation* 47(3):1103–25. doi:10.1007/s11116-018-9956-6.
- Blumenberg, Evelyn, and Hannah King. 2019. "Low-Income Workers, Residential Location, and the Changing Commute in the United States." *Built Environment* 45(4):563–81.
- Blumenberg, Evelyn, and Hannah King. 2021. "Jobs-Housing Balance Re-Re-Visited." *Journal of the American Planning Association* 0(0):1–13.
- Blumenberg, Evelyn, and Michael Manville. 2004. "Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy." *Journal of Planning Literature* 19(2):182–205.
- Blumenberg, Evelyn, and Paul Ong. 2001. "Cars, Buses, and Jobs: Welfare Participants and Employment Access in Los Angeles." *Transportation Research Record* 1756(1):22–31.
- Blumenberg, Evelyn, and Gregory Pierce. 2014. "A Driving Factor in Mobility? Transportation's Role in Connecting Subsidized Housing and Employment Outcomes in the Moving to Opportunity (MTO) Program." *Journal of the American Planning Association* 80(1):52–66. doi:10.1080/01944363.2014.935267.

- Blumenberg, Evelyn, Fariba Siddiq, Samuel Speroni, and Jacob L. Wasserman. 2024. "Driving A-Loan: Automobile Debt, Neighborhood Race, and the COVID-19 Pandemic." *Transport Policy* 155:321–30. doi:10.1016/j.tranpol.2024.07.007.
- Blumenberg, Evelyn, and Michael Smart. 2014. "Brother Can You Spare a Ride? Carpooling in Immigrant Neighbourhoods." *Urban Studies* 51(9):1871–90. doi:10.1177/0042098013502825.
- Blumenberg, Evelyn, Brian D. Taylor, Hao Ding, Samuel Speroni, and Fariba Siddiq. 2025. *The Equity and Policy Implications of Long-Distance Commuting in the Greater Los Angeles Region*. PSR-23-23 TO 080. Los Angeles: Pacific Southwest Region, University Transportation Center. <https://rosap.ntl.bts.gov/view/dot/83078>.
- Blumenberg, Evelyn, Brian D. Taylor, Michael Smart, Kelcie Ralph, Madeline Wander, and Stephen Brumbaugh. 2012. *What's Youth Got to Do with It? Exploring the Travel Behavior of Teens and Young Adults*. UCTC-FR-2012-14. Los Angeles: University of California Transportation Center. <https://escholarship.org/uc/item/9c14p6d5>.
- Blumenberg, Evelyn, and Madeline Wander. 2023. "Housing Affordability and Commute Distance." *Urban Geography* 44(7):1454–73. doi:10.1080/02723638.2022.2087319.
- Braun, Virginia, and Victoria Clarke. 2006. "Using Thematic Analysis in Psychology." *Qualitative Research in Psychology* 3:77–101.
- Braun, Virginia, and Victoria Clarke. 2021. *Thematic Analysis: A Practical Guide*. 1st edition. Los Angeles London New Delhi Singapore Washington DC Melbourne: SAGE Publications Ltd.
- Brough, Rebecca, Matthew Freedman, and David C. Phillips. 2021. "Understanding Socioeconomic Disparities in Travel Behavior during the COVID-19 Pandemic." *Journal of Regional Science* 61(4):753–74. doi:10.1111/jors.12527.
- Brown, Anne E. 2017. "Car-Less or Car-Free? Socioeconomic and Mobility Differences among Zero-Car Households." *Transport Policy* 60:152–59. doi:10.1016/j.tranpol.2017.09.016.
- Brown, Charles T. 2025. *Arrested Mobility: Overcoming the Threat to Black Movement*. Washington D.C.: Island Press.
- Brozen, Madeline. 2023. "How Can L.A. Metro Make Train Service Safer? Look to What's Working on Buses." *Los Angeles Times*, April 27.
- Buehler, Ralph, John Pucher, Rico Wittwer, and Regine Gerike. 2024. "Travel Behavior of Older Adults in the USA, 2001-2017." *Travel Behaviour and Society* 36:100783. doi:10.1016/j.tbs.2024.100783.

- Buliung, Ron N., and Pavlos S. Kanaroglou. 2006. "Urban Form and Household Activity-Travel Behavior." *Growth and Change* 37(2):172–99. doi:10.1111/j.1468-2257.2006.00314.x.
- Bullard, Robert Doyle, Glenn Steve Johnson, and Angel O. Torres, eds. 2004. *Highway Robbery: Transportation Racism & New Routes to Equity*. Cambridge: South End Press.
- bunten, devin michelle, Ellen Fu, Lyndsey Rolheiser, and Christopher Severen. 2024. "The Problem Has Existed over Endless Years: Racialized Difference in Commuting, 1980–2019." *Journal of Urban Economics* 141:103542. doi:10.1016/j.jue.2023.103542.
- Burris, Mark, Alexander Brown, Hardik Gupta, Jasper Wang, Alberto M. Figueroa-Medina, Carlos A. del Valle-González, and Adel F. del Valle-Pérez. 2023. "Factors Influencing Traveler Use of Transit before, during, and after the COVID-19 Pandemic." *Journal of Public Transportation* 25:100058. doi:10.1016/j.jpubtr.2023.100058.
- Cagney, Kathleen A., Erin York Cornwell, Alyssa W. Goldman, and Liang Cai. 2020. "Urban Mobility and Activity Space." *Annual Review of Sociology* 46:623–48. doi:10.1146/annurev-soc-121919-054848.
- California Department of Housing and Community Development. 2024. "2024 State Income Limits."
- California Department of Housing and Community Development. 2025. "Homekey." <https://www.hcd.ca.gov/grants-and-funding/homekey>.
- Carpio, Genevieve. 2019. *Collisions at the Crossroads: How Place and Mobility Make Race*. American Crossroads. Berkeley and Los Angeles: University of California Press.
- Carpio, Genevieve, Clara Irazábal, and Laura Pulido. 2011. "Right to the Suburb? Rethinking Lefebvre and Immigrant Activism." *Journal of Urban Affairs* 33(2):185–208.
- Carrillo, Laura, Mary Pattillo, Erin Hardy, and Dolores Acevedo-Garcia. 2016. "Housing Decisions Among Low-Income Hispanic Households in Chicago." *Cityscape* 18(2):109–50.
- Cavin, Aaron. 2013. "Fringe Politics: Suburban Expansion and the Mexican American Struggle for Alviso, California." Pp. 105–28 in *Social Justice in Diverse Suburbs: History, Politics, and Prospects*, edited by C. Niedt. Philadelphia: Temple University Press.
- Chaiyachati, Barbara H., Michelle-Marie Peña, and Diana Montoya-Williams. 2022. "The Complicated Inadequacy of Race and Ethnicity Data." *JAMA Pediatrics* 176(7):631–32. doi:10.1001/jamapediatrics.2022.0525.

- Chatterjee, Kiron, Samuel Chng, Ben Clark, Adrian Davis, Jonas De Vos, Dick Ettema, Susan Handy, Adam Martin, and Louise Reardon. 2020. "Commuting and Wellbeing: A Critical Overview of the Literature with Implications for Policy and Future Research." *Transport Reviews* 40(1):5–34. doi:10.1080/01441647.2019.1649317.
- Cheng, Wendy. 2013. *The Changs Next Door to the Díazes: Remapping Race in Suburban California*. Minneapolis: University of Minnesota Press.
- Cline, Michael E., Corey Sparks, and Karl Eschbach. 2009. "Understanding Carpool Use by Hispanics in Texas." *Transportation Research Record* 2118(1):39–46. doi:10.3141/2118-06.
- Collins, Kimberly, Raffi Der Wartanian, Francisca Beer, and Yunfei Hou. 2024. *Moving Towards the Electrification of Medium- and Heavy-Duty Vehicles in the Inland Empire*. 24–24. San Jose: Mineta Transportation Institute. https://transweb.sjsu.edu/sites/default/files/2305.1-Collins-EV-Heavy-Duty-Equity-Policy-Analysis_0.pdf.
- Collins, Kimberly, Raffi Der Wartanian, Preston Reed, Holly Chea, Yunfei Hou, and Yongping Zhang. 2023. "Social Equity and Public Transit in the Inland Empire: Introducing a Transit Equity Analysis Model." *Transportation Research Interdisciplinary Perspectives* 21:100870. doi:10.1016/j.trip.2023.100870.
- Coren, Chelsie, Kate Lowe, and Jesus M. Barajas. 2022. "Commuting Carless: A Qualitative Study of Transportation Challenges for Disadvantaged Job Seekers in Chicago, IL." *Transportation Research Record* 2676(6):673–84.
- Covington, Kenya, Lance Freeman, and Michael A. Stoll. 2011. *The Suburbanization of Housing Choice Voucher Recipients*. Metropolitan Opportunity Series. Washington, D.C.: Metropolitan Policy Program, Brookings Institution. https://www.brookings.edu/wp-content/uploads/2016/06/1011_housing_suburbs_covington_freeman_stoll.pdf.
- Covington, Kenya L. 2015. "Poverty Suburbanization: Theoretical Insights and Empirical Analyses." *Social Inclusion* 3(2):71–90. doi:10.17645/si.v3i2.120.
- Covington, Kenya L. 2018. "Overcoming Spatial Mismatch: The Opportunities and Limits of Transit Mode in Addressing the Black–White Unemployment Gap." *City & Community* 17(1):211–35. doi:10.1111/cico.12278.
- Cresswell, Tim. 2010. "Towards a Politics of Mobility." *Environment and Planning D: Society and Space* 28(1):17–31. doi:10.1068/d11407.

- Curl, Angela, Julie Clark, and Ade Kearns. 2018. "Household Car Adoption and Financial Distress in Deprived Urban Communities: A Case of Forced Car Ownership?" *Transport Policy* 65:61–71. doi:10.1016/j.tranpol.2017.01.002.
- Davis, Mike. 1992. *City of Quartz: Excavating the Future in Los Angeles*. New York: Random House.
- De Lara, Juan. 2018. *Inland Shift: Race, Space, and Capital in Southern California*. Berkeley and Los Angeles: University of California Press.
- Deakin, Elizabeth, Jeremy Halpern, and Madeleine Parker. 2020. "Examining the Potential for Uber and Lyft to Be Included in Subsidized Mobility Programs Targeted to Seniors, Low Income Adults, and People with Disabilities." doi:10.7922/G2NK3C9S.
- Denton, Nancy A., and Joseph R. Gibbons. 2013. "Twenty-First-Century Suburban Demography: Increasing Diversity Yet Lingering Exclusion." Pp. 13–30 in *Social Justice in Diverse Suburbs: History, Politics, and Prospects*, edited by C. Niedt. Philadelphia: Temple University Press.
- Ding, Hao, Anastasia Loukaitou-Sideris, and Asha Weinstein Agrawal. 2020. "Sexual Harassment and Assault in Transit Environments: A Review of the English-Language Literature." *Journal of Planning Literature* 35(3):267–80. doi:10.1177/0885412220911129.
- Downs, Roger M., and David Stea, eds. 1973. *Image and Environment: Cognitive Mapping and Spatial Behavior*. Chicago: Aldin Publishing Company.
- Ewing, Reid, and Robert Cervero. 2001. "Travel and the Built Environment: A Synthesis." *Transportation Research Record* 1780(1):87–114. doi:10.3141/1780-10.
- Ewing, Reid, and Robert Cervero. 2010. "Travel and the Built Environment: A Meta-Analysis." *Journal of the American Planning Association* 76(3):265–94.
- Farrell, Chad R. 2016. "Immigrant Suburbanisation and the Shifting Geographic Structure of Metropolitan Segregation in the United States." *Urban Studies* 53(1):57–76. doi:10.1177/0042098014558537.
- Ferrari, Silvia, and Francisco Cribari-Neto. 2004. "Beta Regression for Modelling Rates and Proportions." *Journal of Applied Statistics* 31(7):799–815. doi:10.1080/0266476042000214501.
- Frey, William H. 2011. *Melting Pot Cities and Suburbs: Racial and Ethnic Change in Metro America in the 2000s*. State of Metropolitan America. Washington, D.C.: Metropolitan Policy Program, Brookings Institution.

- Frey, William H. 2022. *Today's Suburbs Are Symbolic of America's Rising Diversity: A 2020 Census Portrait*. Census 2020. Washington, D.C.: Brookings Institution.
<https://www.brookings.edu/articles/todays-suburbs-are-symbolic-of-americas-rising-diversity-a-2020-census-portrait/>.
- Gautier, Pieter A., and Yves Zenou. 2010. "Car Ownership and the Labor Market of Ethnic Minorities." *Journal of Urban Economics* 67(3):392–403. doi:10.1016/j.jue.2009.11.005.
- Ghimire, Subid, and Eleni Bardaka. 2023. "Active Travel among Carless and Car-Ownning Low-Income Populations in the United States." *Transportation Research Part D: Transport and Environment* 117:103627. doi:10.1016/j.trd.2023.103627.
- Ghimire, Subid, and Eleni Bardaka. 2024. "Do Low-Income Households Walk and Cycle to Reduce Their Transport Costs? Insights from the 2017 U.S. National Household Travel Survey." *International Journal of Sustainable Transportation* 18(5):421–36. doi:10.1080/15568318.2024.2338724.
- Giuliano, Genevieve. 2003. "Travel, Location and Race/Ethnicity." *Transportation Research Part A: Policy and Practice* 37(4):351–72.
- Giuliano, Genevieve. 2005. "Low Income, Public Transit, and Mobility." *Transportation Research Record* 1927(1).
<https://journals.sagepub.com/doi/10.1177/0361198105192700108>.
- Giuliano, Genevieve, and Susan Hanson, eds. 2017. *The Geography of Urban Transportation*. Fourth Edition. New York: The Guilford Press.
- Glaeser, Edward L., Matthew E. Kahn, and Jordan Rappaport. 2008. "Why Do the Poor Live in Cities? The Role of Public Transportation." *Journal of Urban Economics* 63(1):1–24.
- Goetz, Andrew R., Timothy M. Vowles, and Sean Tierney. 2009. "Bridging the Qualitative–Quantitative Divide in Transport Geography." *The Professional Geographer* 61(3):323–35. doi:10.1080/00330120902931960.
- Golledge, Reginald G., and Robert J. Stimson. 1997. *Spatial Behavior: A Geographic Perspective*. New York: The Guilford Press.
- Golub, Aaron, Richard A. Marcantonio, and Thomas W. Sanchez. 2013. "Race, Space, and Struggles for Mobility: Transportation Impacts on African Americans in Oakland and the East Bay." *Urban Geography* 34(5):699–728.
- Grengs, Joe. 2010. "Job Accessibility and the Modal Mismatch in Detroit." *Journal of Transport Geography* 18(1):42–54.

- Guerra, Erick, and Robert Cervero. 2011. "Cost of a Ride: The Effects of Densities on Fixed-Guideway Transit Ridership and Costs." *Journal of the American Planning Association* 77(3):267–90. doi:10.1080/01944363.2011.589767.
- Gurley, Tami, and Donald Bruce. 2005. "The Effects of Car Access on Employment Outcomes for Welfare Recipients." *Journal of Urban Economics* 58(2):250–72. doi:10.1016/j.jue.2005.05.002.
- Hall, Matthew, and Barrett Lee. 2010. "How Diverse Are US Suburbs?" *Urban Studies* 47(1):3–28.
- Hanson, Susan. 2006. "Viewpoint: Imagine." *Journal of Transport Geography* 14:232–33.
- Hanson, Susan. 2015. "Foreword 1: Transportation Geographies and Mobilities Studies: Toward Collaboration." Pp. 3–11 in *Transport, Mobility, and the Production of Urban Space*, edited by J. Cidell and D. Prytherch. New York and London: Routledge.
- Hanson, Susan. 2017. "Introducing Urban Transportation." Pp. 3–33 in *The Geography of Urban Transportation*, edited by G. Giuliano and S. Hanson. New York: The Guilford Press.
- Hasanzadeh, Kamyar, Jukka Heinonen, Sanna Ala-Mantila, Michal Czepkiewicz, Marketta Kytt, and Juudit Ottelin. 2019. "Beyond Geometries of Activity Spaces: A Holistic Study of Daily Travel Patterns, Individual Characteristics, and Perceived Wellbeing in Helsinki Metropolitan Area." *Journal of Transport and Land Use* 12(1):149–77.
- Howell, Aaron J., and Jeffrey M. Timberlake. 2013. "Racial and Ethnic Trends in the Suburbanization of Poverty in U.S. Metropolitan Areas, 1980–2010." *Journal of Urban Affairs* 36(1):79–98. doi:10.1111/juaf.12030.
- Howell, Amanda, Christina M. Currans, Steven Gehrke, Gregory Norton, and Kelly J. Clifton. 2018. "Transportation Impacts of Affordable Housing: Informing Development Review with Travel Behavior Analysis." *The Journal of Transport and Land Use* 11(1).
- Hu, Lingqian. 2015. "Job Accessibility of the Poor in Los Angeles." *Journal of the American Planning Association* 81(1):30–45.
- Ihlanfeldt, Keith R., and David L. Sjoquist. 1989. "The Impact of Job Decentralization on the Economic Welfare of Central City Blacks." *Journal of Urban Economics* 26(1):110–30. doi:10.1016/0094-1190(89)90031-4.
- Inland Empire residents afraid to leave their homes amid ICE activity. 2025. *NBC4 News*.
- Jackson, Kenneth T. 1985. *Crabgrass Frontier: The Suburbanization of the United States*. New York and Oxford: Oxford University Press.

- Johnson, Brian, and Jason Shifferd. 2016. "Who Lives Where: A Comprehensive Population Taxonomy of Cities, Suburbs, Exurbs, and Rural Areas in the United States." *The Geographical Bulletin* 57(1).
<https://digitalcommons.kennesaw.edu/thegeographicalbulletin/vol57/iss1/3>.
- Johnson, Hans P., Deborah Reed, and Joseph Michael Hayes. 2008. *The Inland Empire in 2015*. San Francisco: Public Policy Institute of California.
- Jones, Malia, and Anne R. Pebley. 2014. "Redefining Neighborhoods Using Common Destinations: Social Characteristics of Activity Spaces and Home Census Tracts Compared." *Demography* 51(3):727–52. doi:10.1007/s13524-014-0283-z.
- Kain, John F. 1968. "Housing Segregation, Negro Employment, and Metropolitan Decentralization." *The Quarterly Journal of Economics* 82(2):175–97.
doi:10.2307/1885893.
- Kataure, Virpal, and Margaret Walton-Roberts. 2015. "The Good, the Bad, and the Suburban: Tracing North American Theoretical Debates about Ethnic Enclaves, Ethnic Suburbs, and Housing Preference." in *The Housing and Economic Experiences of Immigrants in U.S. and Canadian Cities*, edited by C. Teixeira and W. Li. Toronto: University of Toronto Press.
- Kawabata, Mizuki. 2003. "Job Access and Employment among Low-Skilled Autoless Workers in US Metropolitan Areas." *Environment and Planning A: Economy and Space* 35(9):1651–68. doi:10.1068/a35209.
- King, David A., Michael J. Smart, and Michael Manville. 2019. "The Poverty of the Carless: Toward Universal Auto Access." *Journal of Planning Education and Research* 1–18.
- Kirkpatrick, L. Owen, and Casey Gallagher. 2013. "The Suburban Geography of Moral Panic: Low-Income Housing and the Revanchist Fringe." Pp. 31–53 in *Social Justice in Diverse Suburbs: History, Politics, and Prospects*, edited by C. Niedt. Philadelphia: Temple University Press.
- Klein, Nicholas J. 2024. "Subsidizing Car Ownership for Low-Income Individuals and Households." *Journal of Planning Education and Research* 44(1):165–77.
doi:10.1177/0739456X20950428.
- Klein, Nicholas J., Rounaq Basu, and Michael J. Smart. 2023a. "Transitions into and out of Car Ownership among Low-Income Households in the United States." *Journal of Planning Education and Research* 0739456X231163755. doi:10.1177/0739456X231163755.

- Klein, Nicholas J., Rounaq Basu, and Michael J. Smart. 2023b. "Transitions into and out of Car Ownership among Low-Income Households in the United States." *Journal of Planning Education and Research* 0739456X231163755. doi:10.1177/0739456X231163755.
- Klein, Nicholas J., Orly Linovski, Kate Lowe, and Michael J. Smart. 2025. *How Transport Journals Weed Out Qualitative Research and Why It Matters*. OSF. https://osf.io/preprints/socarxiv/mcqpu_v1.
- Klein, Nicholas J., and Michael J. Smart. 2017. "Car Today, Gone Tomorrow: The Ephemeral Car in Low-Income, Immigrant and Minority Families." *Transportation* 44:495–510. doi:10.1007/s11116-015-9664-4.
- Kneebone, Elizabeth. 2017. *The Changing Geography of U.S. Poverty. Testimony before the House Ways and Means Committee, Subcommittee on Human Resources*. Washington, D.C.: Brookings Institution.
- Kneebone, Elizabeth. 2019. "Suburban Poverty." in *The Wiley Blackwell Encyclopedia of Urban and Regional Studies*, edited by A. M. Orum. Hoboken and Chichester: John Wiley & Sons, Ltd.
- Kneebone, Elizabeth, and E. Garr. 2010. *The Suburbanization of Poverty: Trends in Metropolitan America, 2000 to 2008*. Washington, D.C.: Brookings Institution. https://www.brookings.edu/wp-content/uploads/2016/06/0120_poverty_paper.pdf.
- Kneebone, Elizabeth, and Natalie Holmes. 2015. *The Growing Distance between People and Jobs in Metropolitan America*. Washington, D.C.: Metropolitan Policy Program, Brookings Institution.
- Kramer, Anna. 2018. "The Unaffordable City: Housing and Transit in North American Cities." *Cities* 83:1–10.
- Kwan, Mei-Po. 2012. "The Uncertain Geographic Context Problem." *Annals of the Association of American Geographers* 102(5):958–68. doi:10.1080/00045608.2012.687349.
- Lefebvre, Henri. 1974. *La Production de l'espace*. Societe et Urbanisme. Paris: Editions Anthropos.
- Li, Wei. 1999. "Building Ethnoburbia: The Emergence and Manifestation of the Chinese Ethnoburb in Los Angeles' San Gabriel Valley." *Journal of Asian American Studies* 2(1):1–28.
- Lichter, Daniel T., Domenico Parisi, and Michael C. Taquino. 2015. "Toward a New Macro-Segregation? Decomposing Segregation within and between Metropolitan Cities and

- Suburbs.” *American Sociological Review* 80(4):843–73.
doi:10.1177/0003122415588558.
- Lichter, Daniel T., Domenico Parisi, Michael C. Taquino, and Steven Michael Grice. 2010. “Residential Segregation in New Hispanic Destinations: Cities, Suburbs, and Rural Communities Compared.” *Social Science Research* 39(2):215–30.
doi:10.1016/j.ssresearch.2009.08.006.
- Lichter, Daniel T., Brian C. Theide, and Matthew M. Brooks. 2023. “Racial Diversity and Segregation: Comparing Principal Cities, Inner-Ring Suburbs, Outlying Suburbs, and the Suburban Fringe.” *RSF: The Russell Sage Foundation Journal of the Social Sciences* 9(1):26–51.
- Lipsitz, George. 1995. “The Possessive Investment in Whiteness: Racialized Social Democracy and the ‘White’ Problem in American Studies.” *American Quarterly* 47(3):369–87.
doi:10.2307/2713291.
- Lipsitz, George. 2018. *The Possessive Investment in Whiteness: How White People Profit from Identity Politics*. Vol. Twentieth Anniversary Edition. Twentieth Anniversary Edition. Philadelphia: Temple University Press.
- Liu, Chang, and Eleni Bardaka. 2021. “The Suburbanization of Poverty and Changes in Access to Public Transportation in the Triangle Region, NC.” *Journal of Transport Geography* 90:102930. doi:10.1016/j.jtrangeo.2020.102930.
- Loeza, Ximena. 2024. “When a Lower Cost of Living Comes with an Hours-Long Commute.” *El Tímpano*, April 3.
- Logan, John R., and Brian J. Stults. 2011. *The Persistence of Segregation in the Metropolis: New Findings from the 2010 Census*. New York City: Russell Sage Foundation.
- Lowe, Kate. 2021. “Undone Science, Funding, and Positionality in Transportation Research.” *Transport Reviews* 41(2):192–209. doi:10.1080/01441647.2020.1829742.
- Lowe, Kate, and Kim Mosby. 2016. “The Conceptual Mismatch: A Qualitative Analysis of Transportation Costs and Stressors for Low-Income Adults.” *Transport Policy* 49:1–8.
doi:10.1016/j.tranpol.2016.03.009.
- Lucas, Marilyn T., and Charles F. Nicholson. 2003. “Subsidized Vehicle Acquisition and Earned Income in the Transition from Welfare to Work.” *Transportation* 30(4):483–501.
doi:10.1023/A:1024724224634.

- Lung-Amam, W., and A. Schafran. 2018. "From Sanford to Ferguson: Race, Poverty, and Protest in the American Suburb." in *The Routledge Companion to the Suburbs*, edited by B. Hanlon and T. Vicino. Routledge.
- Lynch, Kevin. 1960. *The Image of the City*. Cambridge and London: The MIT Press.
- Marcelli, Enrico A. 2004. "From the Barrio to the 'Burbs? Immigration and the Dynamics of Suburbanization." Pp. 123–50 in *Up Against the Sprawl: Public Policy and the Making of Southern California*, edited by J. Wolch, M. Pastor Jr., and P. Dreier. Minneapolis: University of Minnesota Press.
- Marvin, Alison R. 2023. "Recognizing the Needs of People on the Autism Spectrum and Their Families." <https://blog.ssa.gov/recognizing-the-needs-of-people-on-the-autism-spectrum-and-their-families/>.
- Massey, Douglas S., and Nancy A. Denton. 1993. *American Apartheid: Segregation and the Making of the Underclass*. Cambridge: Harvard University Press.
- McMillan, Penelope. 1987. "'Black Flight' From L.A. Reverses Trend, Study Discovers." *Los Angeles Times*, September 22.
- McNally, Michael G., Rezwana Rafiq, and Md. Yusuf Sarwar Uddin. 2023. "Impacts of the COVID-19 Pandemic on Telecommuting and Travel." Pp. 217–32 in *Pandemic in the Metropolis: Transportation Impacts and Recovery*, edited by A. Loukaitou-Sideris, A. M. Bayen, G. Circella, and R. Jayakrishnan. Cham: Springer International Publishing.
- McPhate, Mike. 2017. "California Today: The Rise of the Super Commuter." *The New York Times*, August 21.
- Mendenhall, Ruby, Kathryn Edin, Susan Crowley, Jennifer Sykes, Laura Tach, Katrin Kriz, and Jeffrey R. Kling. 2012. "The Role of Earned Income Tax Credit in the Budgets of Low-Income Households." *Social Service Review* 86(3):367–400. doi:10.1086/667972.
- Menendian, Stephen, Arthur Gailles, and Samir Gambhir. 2021. *The Roots of Structural Racism: Twenty-First Century Racial Residential Segregation in the United States*. Berkeley: Othering & Belonging Institute. <https://belonging.berkeley.edu/roots-structural-racism>.
- Mondschein, Andrew. 2020. "Cognitive Mapping, Mobility Technologies and the Decoupling of Imageability and Accessibility." Pp. 123–39 in *Urban Experience and Design: Contemporary Perspectives on Improving the Public Realm*, edited by J. B. Hollander and A. Sussman. New York and Oxon: Routledge.

- Montello, Daniel R. 1997. "The Perception and Cognition of Environmental Distance: Direct Sources of Information." Pp. 297–311 in *Spatial Information Theory: A Theoretical Basis for GIS*, edited by S. C. Hirtle and A. U. Frank. Berlin, Heidelberg: Springer.
- Moreno, Carlos. 2024. *The 15-Minute City: A Solution to Saving Our Time and Our Planet*. Hoboken: John Wiley & Sons.
- Morris, Eric A., Samuel Speroni, and Brian D. Taylor. 2023. "Going Nowhere Fast: Might Changing Activity Patterns Help Explain Falling Travel?" *Journal of Transport Geography* 110:103620. doi:10.1016/j.jtrangeo.2023.103620.
- Morris, Eric A., Samuel Speroni, and Brian D. Taylor. 2025. "Going Nowhere Faster: Did the Covid-19 Pandemic Accelerate the Trend Toward Staying Home?" *Journal of the American Planning Association* 91(3):361–79. doi:10.1080/01944363.2024.2385327.
- Murphy, Alexandra K. 2017. "The New American Suburb: Poverty, Race, and the Economic Crisis, Edited by Katrin Anacker: Burlington, VT, Ashgate, 2015." *Journal of Urban Affairs* 39(5):738–39. doi:10.1111/juaf.12286.
- National Immigration Law Center. 2025. "DACA – Deferred Action for Childhood Arrivals." <https://www.nilc.org/work/daca/>.
- Nicolaides, Becky M. 2024. *The New Suburbia: How Diversity Remade Suburban Life in Los Angeles after 1945*. Oxford and New York: Oxford University Press.
- Nielsen, Kristian S., Kimberly A. Nicholas, Felix Creutzig, Thomas Dietz, and Paul C. Stern. 2021. "The Role of High-Socioeconomic-Status People in Locking in or Rapidly Reducing Energy-Driven Greenhouse Gas Emissions." *Nature Energy* 6(11):1011–16. doi:10.1038/s41560-021-00900-y.
- NOAA National Centers for Environmental information. 2025. "Climate at a Glance: County Time Series." <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>.
- Ong, Paul, and Evelyn Blumenberg. 1998. "Job Access, Commute and Travel Burden among Welfare Recipients." *Urban Studies* 35(1):77–93.
- Ong, Paul M., and Douglas Houston. 2002. "Transit, Employment and Women on Welfare." *Urban Geography* 23(4):344–64. doi:10.2747/0272-3638.23.4.344.
- Ong, Paul M., and Douglas Miller. 2005. "Spatial and Transportation Mismatch in Los Angeles." *Journal of Planning Education and Research* 25:43–56. doi:10.1177/0739456X04270244.

- Orfield, Myron, and Thomas F. Luce. 2013. "America's Racially Diverse Suburbs: Opportunities and Challenges." *Housing Policy Debate* 23(2):395–430. doi:10.1080/10511482.2012.756822.
- Ospina, Raydonal, and Silvia L. P. Ferrari. 2010. "Inflated Beta Distributions." *Statistical Papers* 51(1):111–26. doi:10.1007/s00362-008-0125-4.
- Ospina, Raydonal, and Silvia L. P. Ferrari. 2012. "A General Class of Zero-or-One Inflated Beta Regression Models." *Computational Statistics & Data Analysis* 56(6):1609–23. doi:10.1016/j.csda.2011.10.005.
- Palm, Matthew, Jeff Allen, and Steven Farber. 2023. "Shifted out: The Well-Being and Justice Implications of Evening and Night Commuting." *Transportation Research Part D: Transport and Environment* 122:103875. doi:10.1016/j.trd.2023.103875.
- Pan, Alexandra Q., Elizabeth Deakin, and Susan A. Shaheen. 2023. "Crabgrass Confinement: Housing and Transportation Challenges of Low- and Moderate-Income Suburban Residents in the San Francisco Bay Area." *Case Studies on Transport Policy* 14:101059. doi:10.1016/j.cstp.2023.101059.
- Pan, Alexandra Q., and Susan Shaheen. 2025. "What Makes the Route More Traveled? Optimizing U.S. Suburban Microtransit for Sustainable Mobility." *Sustainability* 17(3):952. doi:10.3390/su17030952.
- Parisi, Domenico, Daniel T. Lichter, and Michael C. Taquino. 2019. "Remaking Metropolitan America? Residential Mobility and Racial Integration in the Suburbs." *Socius* 5:1–18. doi:10.1177/2378023119854882.
- Parker, Kim, Juliana Horowitz, Anna Brown, Richard Fry, D'Vera Cohn, and Ruth Igielnik. 2018. *What Unites and Divides Urban, Suburban and Rural Communities*. Washington, D.C.: Pew Research Center.
- Pastor, Manuel. 2013. "Maywood, Not Mayberry: Latinos and Suburbia in Los Angeles County." Pp. 129–54 in *Social Justice in Diverse Suburbs: History, Politics, and Prospects*, edited by C. Niedt. Philadelphia: Temple University Press.
- Pastor, Manuel. 2018. *State of Resistance: What California's Dizzying Descent and Remarkable Resurgence Mean for America's Future*. New York: The New Press.
- Paul, Julene, and Brian D. Taylor. 2024. "Pandemic Transit: Examining Transit Use Changes and Equity Implications in Boston, Houston, and Los Angeles." *Transportation* 51(2):615–43. doi:10.1007/s11116-022-10345-1.

- Pfeiffer, Deirdre. 2012. "African Americans' Search for 'More for Less' and 'Peace of Mind' on the Exurban Frontier." *Urban Geography* 33(1):64–90.
- Pfeiffer, Deirdre. 2013. "Moving to Opportunity: African Americans' Safety Outcomes in the Los Angeles Exurbs." *Journal of Planning Education and Research* 33(1):49–65. doi:10.1177/0739456X12459359.
- Plane, David A. 1981. "The Geography of Urban Commuting Fields: Some Empirical Evidence from New England." *The Professional Geographer* 33(2):182–88.
- PolicyLink and USC Equity Research Institute. 2024. "National Equity Atlas." <http://www.nationalequityatlas.org/>.
- PolicyLink and USC Equity Research Institute. 2020. "National Equity Atlas." <http://www.nationalequityatlas.org/>.
- powell, john a., and Jason Reece. 2013. "The Future of Fair Housing in a Diverse Suburbia." Pp. 213–28 in *Social Justice in Diverse Suburbs: History, Politics, and Prospects*, edited by C. Niedt. Philadelphia: Temple University Press.
- Pucher, John, and John L. Renne. 2003. "Socioeconomics of Urban Travel: Evidence from the 2001 NHTS." *Transportation Quarterly* 57(3):49–77.
- Pulido, Laura. 2000. "Rethinking Environmental Racism: White Privilege and Urban Development in Southern California." *Annals of the Association of American Geographers* 90(1):12–40.
- Pulido, Laura. 2015. "Geographies of Race and Ethnicity 1: White Supremacy vs White Privilege in Environmental Racism Research." *Progress in Human Geography* 39(6):809–17.
- Pulido, Laura, and Manuel Pastor. 2013. "Where in the World Is Juan—and What Color Is He? The Geography of Latina/o Racial Identity in Southern California." *American Quarterly* 65(2):309–41.
- Raphael, Steven. 1998. "The Spatial Mismatch Hypothesis and Black Youth Joblessness: Evidence from the San Francisco Bay Area." *Journal of Urban Economics* 43(1):79–111. doi:10.1006/juec.1997.2039.
- Raphael, Steven, and Lorien Rice. 2002. "Car Ownership, Employment, and Earnings." *Journal of Urban Economics* 52(1):109–30. doi:10.1016/S0094-1190(02)00017-7.
- Raphael, Steven, and Michael A. Stoll. 2001. "Can Boosting Minority Car-Ownership Rates Narrow Inter-Racial Employment Gaps?" Pp. 99–145 in *Brookings-Wharton Papers on*

- Urban Affairs*, edited by W. G. Gale and J. R. Pack. Washington, D.C.: Brookings Institution Press.
- Raphael, Steven, and Michael A. Stoll. 2010. *Job Sprawl and the Suburbanization of Poverty*. Metropolitan Opportunity Series. Washington, D.C.: Metropolitan Policy Program, Brookings Institution.
- Reardon, Sean F., and Kendra Bischoff. 2011. "Income Inequality and Income Segregation." *American Journal of Sociology* 116(4):1092–1153. doi:10.1086/657114.
- Rosenbloom, Sandra. 1992. "Why Working Families Need a Car." Pp. 39–56 in *The Car and the City: The Automobile, the Built Environment, and Daily Urban Life*. Ann Arbor: University of Michigan Press.
- Rothstein, Richard. 2017. *The Color of Law: A Forgotten History of How Our Government Segregated America*. New York and London: Liveright Publishing Corporation.
- Roy, Ananya, Ashley Bennett, Jennifer Blake, Jonny Coleman, Hannah Cornfield, La Donna Harrell, Terrie Klein, Samuel Lutzker, Hilary Malson, Jessica Mendez, Carla Orendorff, Gustavo Otzoy, Annie Powers, Chloe Rosenstock, Rayne Laborde Ruiz, William Sens Jr., and Pamela Stephens. 2022. *(Dis)Placement: The Fight for Housing and Community After Echo Park Lake*. Los Angeles: UCLA Luskin Institute on Inequality and Democracy.
- Roy, Kevin M., Carolyn Y. Tubbs, and Linda M. Burton. 2004. "Don't Have No Time: Daily Rhythms and the Organization of Time for Low-Income Families." *Family Relations* 53(2):168–78. doi:10.1111/j.0022-2445.2004.00007.x.
- Rugh, Jacob S., and Douglas S. Massey. 2014. "Segregation in Post-Civil Rights America: Stalled Integration or End of the Segregated Century?" *Du Bois Review: Social Science Research on Race* 11(2):205–32. doi:10.1017/S1742058X13000180.
- SAE International. 2021. *Taxonomy of On-Demand and Shared Mobility: Ground, Aviation, and Marine*. JA3163_202106. https://www.sae.org/standards/content/ja3163_202106/.
- Sanchez, Thomas W., Qing Shen, and Zhong-Ren Peng. 2004. "Transit Mobility, Jobs Access and Low-Income Labour Participation in US Metropolitan Areas." *Urban Studies* 41(7):1313–31.
- Schafran, Alex. 2018. *The Road to Resegregation: Northern California and the Failure of Politics*. Oakland: University of California Press.

- Schafran, Alex, and Jake Wegmann. 2012. "Restructuring, Race, and Real Estate: Changing Home Values and the New California Metropolis, 1989-2010." *Urban Geography* 33(5):630–54.
- Schouten, Andrew. 2021. "Residential Mobility and the Geography of Low-Income Households." *Urban Studies* 58(9):1846–65.
- Self, Robert O. 2003. *American Babylon: Race and the Struggle for Postwar Oakland*. Princeton: Princeton University Press.
- Sheller, Mimi. 2018. *Mobility Justice: The Politics of Movement in an Age of Extremes*. London and Brooklyn: Verso Books.
- Sheller, Mimi, and John Urry. 2006. "The New Mobilities Paradigm." *Environment and Planning A: Economy and Space* 38(2):207–26. doi:10.1068/a37268.
- Shen, Qing. 2001. "A Spatial Analysis of Job Openings and Access in a U.S. Metropolitan Area." *Journal of the American Planning Association* 67(1):53–68.
- Shen, Quin. 1998. "Location Characteristics of Inner-City Neighborhoods and Employment Accessibility of Low-Wage Workers." *Environment and Planning B: Planning and Design* 25(3):345–65. doi:10.1068/b250345.
- Singer, Audrey. 2004. *The Rise of New Immigrant Gateways*. Washington, D.C.: Center on Urban and Metropolitan Policy, The Brookings Institution.
- Singer, Audrey, Susan W. Hardwick, and Caroline B. Brettell. 2008. *Twenty-First Century Gateways: Immigrant Incorporation in Suburban America*. Washington, D.C.: Brookings Institution Press.
- Smart, Michael J., and Nicholas J. Klein. 2015. *A Longitudinal Analysis of Cars, Transit, and Employment Outcomes*. 12–49. San Jose: Mineta Transportation Institute.
- Smart, Michael J., and Nicholas J. Klein. 2020. "Disentangling the Role of Cars and Transit in Employment and Labor Earnings." *Transportation* 47(3):1275–1309. doi:10.1007/s11116-018-9959-3.
- Smeeding, Timothy M., Katherin Ross Phillips, and Michael O'Connor. 2000. "The EITC: Expectation, Knowledge, Use, and Economic and Social Mobility." *National Tax Journal* 53(4.2):1187–1209. doi:10.17310/ntj.2000.4S1.07.
- Social Explorer, Inc. 2025. "Social Explorer Tables, 2023 American Community Survey [5-Year Estimates]." <https://www.socialexplorer.com/explore-tables>.

- Soja, Edward W. 1980. "The Socio-Spatial Dialectic." *Annals of the Association of American Geographers* 70(2):207–25.
- Soja, Edward W. 2010. *Seeking Spatial Justice*. Minneapolis: University of Minnesota Press.
- Stoll, Michael A. 1998. "When Jobs Move, Do Black and Latino Men Lose? The Effect of Growth in Job Decentralisation on Young Men's Jobless Incidence and Duration." *Urban Studies* 35(12):2221–39. doi:10.1080/0042098983854.
- Stoll, Michael A. 2006. "Job Sprawl, Spatial Mismatch, and Black Employment Disadvantage." *Journal of Policy Analysis and Management* 25(4):827–54.
- Suro, Roberto, Jill H. Wilson, and Audrey Singer. 2011. *Immigration and Poverty in America's Suburbs*. Washington, D.C.: Metropolitan Policy Program, Brookings Institution.
https://www.researchgate.net/profile/Audrey-Singer-2/publication/291354908_Immigration_and_Poverty_in_America's_Suburbs/links/56a258a908aee24c585ccf3/Immigration-and-Poverty-in-Americas-Suburbs.pdf.
- Tao, Sui, Sylvia Y. He, Mei-Po Kwan, and Shuli Luo. 2020. "Does Low Income Translate into Lower Mobility? An Investigation of Activity Space in Hong Kong between 2002 and 2011." *Journal of Transport Geography* 82:102583. doi:10.1016/j.jtrangeo.2019.102583.
- Taylor, Brian D., Hiroyuki Iseki, Mark A. Miller, and Michael Smart. 2009. *Thinking Outside the Bus: Understanding User Perceptions of Waiting and Transferring in Order to Increase Transit Use. Research*. UCB-ITS-PRR-2009-8. Berkeley: California Path Program, Institute of Transportation Studies, University of California, Berkeley.
<https://escholarship.org/uc/item/4d75d18n>.
- Taylor, Brian D., and Eric A. Morris. 2015. "Public Transportation Objectives and Rider Demographics: Are Transit's Priorities Poor Public Policy?" *Transportation* 42(2):347–67.
- Taylor, Brian D., and Paul M. Ong. 1995. "Spatial Mismatch or Automobile Mismatch? An Examination of Race, Residence and Commuting in US Metropolitan Areas." *Urban Studies* 32(9):1453–73.
- Taylor, Brian D., Kelcie Ralph, and Michael Smart. 2015. "What Explains the Gender Gap in Schlepping? Testing Various Explanations for Gender Differences in Household-Serving Travel." *Social Science Quarterly* 96(5):1493–1510. doi:10.1111/ssqu.12203.
- Teaford, Jon C. 2020. *The American Suburb: The Basics*. New York: Routledge.

- Terbeck, Fabian J. 2023. “The Suburbanization of Poverty and Minority Populations in the 2000s: Two Parallel or Interrelated Processes?” *Journal of Urban Affairs* 45(8):1434–51. doi:10.1080/07352166.2021.1947143.
- The San Francisco Foundation, PolicyLink, and USC Equity Research Institute. 2025. “Bay Area Equity Atlas.” <https://bayareaequityatlas.org/>.
- The Untokening Collective. 2017. *Untokening 1.0—Principles of Mobility Justice*. <http://www.untokening.org/updates/2017/11/11/untokening-10-principles-of-mobility-justice>.
- The Untokening Collective. 2018. *Untokening Mobility: Beyond Pavement, Paint and Place*. <http://www.untokening.org/updates/2018/1/27/untokening-mobility-beyond-pavement-paint-and-place>.
- Thomas, Ann F. 2021. “The Racial Wealth Gap and the Tax Benefits of Homeownership.” *New York Law School Law Review* 66(2):247–76.
- Tilton, Jennifer, Lisa Benvenuti, Tessa VanRy, and Ashley Roman. 2025. *People’s History Race Dot Density Map 1900-2020. A People’s History of the Inland Empire Census Project Using IPUMS Data*. Program in Race and Ethnic Studies University of Redlands, Center for Spatial Studies University of Redlands, UCR Public History. <https://univredlands.maps.arcgis.com/apps/mapviewer/index.html?webmap=6f3c336e6be345ddac8f09744bcff93e>.
- Urry, John. 2007. *Mobilities*. Cambridge: Polity.
- U.S. Census Bureau. 2022. “Glossary.” <https://www.census.gov/programs-surveys/geography/about/glossary.html>.
- U.S. Census Bureau. n.d. “Labor Force Statistics Glossary.” Retrieved June 21, 2025. <https://www.census.gov/topics/employment/labor-force/about/glossary.html>.
- U.S. Department of Health & Human Services. 2017. “2017 Poverty Guidelines.” <https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines/prior-hhs-poverty-guidelines-federal-register-references/2017-poverty-guidelines#thresholds>.
- U.S. Department of Housing and Urban Development. n.d. “Veterans Affairs Supportive Housing (VASH).” Retrieved April 21, 2025. <https://www.hud.gov/helping-americans/housing-choice-vouchers-homeless-veterans>.
- Vigar, Geoff. 2017. “The Four Knowledges of Transport Planning: Enacting a More Communicative, Trans-Disciplinary Policy and Decision-Making.” *Transport Policy* 58:39–45. doi:10.1016/j.tranpol.2017.04.013.

- Walker, Kyle. 2018. "Immigrants in U.S. Suburbs." Pp. 193–207 in *The Routledge Companion to the Suburbs*, edited by B. Hanlon and T. Vicino. London: Routledge.
- Walmsley, D. J., and J. M. Jenkins. 1992. "Cognitive Distance: A Neglected Issue in Travel Behavior." *Journal of Travel Research* 31(1):24–29. doi:10.1177/004728759203100106.
- Wander, Madeline. 2024. "Do Low-Income Suburbanites Commute Farther and Longer Than Urbanites?: Comparing Commute Patterns by Income and Neighborhood Type in California." Presented at the Transportation Research Board Annual Meeting, January 9, Washington, D.C.
- Wang, Qi, Nolan Edward Phillips, Mario L. Small, and Robert J. Sampson. 2018. "Urban Mobility and Neighborhood Isolation in America's 50 Largest Cities." *PNAS* 115(30):7735–40.
- Weston, Lisa, and Susan Handy. 2004. "Mental Maps." Pp. 533–45 in *Handbook of Transport Geography and Spatial Systems*, edited by D. A. Hensher, K. J. Button, K. E. Haynes, and P. R. Stopher. Amsterdam: Elsevier.
- Wilbur, Michael, Afiya Ayman, Amutheezan Sivagnanam, Anna Ouyang, Vincent Poon, Riyan Kabir, Abhiram Vadali, Philip Pugliese, Daniel Freudberg, Aron Laszka, and Abhishek Dubey. 2023. "Impact of COVID-19 on Public Transit Accessibility and Ridership." *Transportation Research Record* 2677(4):531–46. doi:10.1177/03611981231160531.
- Woldeamanuel, Mintesnot, and Kenya Covington. 2014. "Public Transit Spatial Mismatch in Los Angeles Suburbs: Socio-Spatial Distribution of Service Quality, Neighborhood Need, and Labor Force Participation." in Vol. TRB 93rd Annual Meeting Compendium of Papers. Washington, D.C.: Transportation Research Board.
- Yoh, Allison, Hiroyuki Iseki, Michael Smart, and Brian D. Taylor. 2011. "Hate to Wait: Effects of Wait Time on Public Transit Travelers' Perceptions." *Transportation Research Record* 2216(1):116–24. doi:10.3141/2216-13.
- Zalewski, Andrew, Lora Byala, Joshua Weiland, Reinaldo Germano, Cecilia Viggiano, Naomi Stein, Brandon Irvine, Adam Blair, and Steven Landau. 2019. *Supporting Late-Shift Workers: Their Transportation Needs and the Economy*. Washington, D.C.: American Public Transportation Association.