

**Renting, Crowded, and Unaffordable? Social Vulnerabilities and the Accumulation of Precarious Housing Conditions in Los Angeles**

Eileen Díaz McConnell, Ph.D.  
Associate Professor  
School of Transborder Studies  
Arizona State University  
PO Box 876303  
Tempe AZ 85287-6303  
eemconn@asu.edu  
480.727.7083 voicemail

Inspired by recent research linking social vulnerabilities, precarious housing, and resilience, this study focuses on the characteristics of socially vulnerable people and a likely reality for this population: that they experience multiple precarious housing conditions at the same time. The analyses use the first wave of Los Angeles Family and Neighborhood Survey data to: 1) describe the distribution of three precarious housing conditions: renting, crowding, and housing affordability problems; 2) identify the social vulnerabilities associated with experiencing two or more of these overlapping conditions simultaneously; and to 3) estimate predicted probabilities of overlapping precarious housing for hypothetical cases of respondents. The descriptive and multivariate analyses are carried out with a sample of U.S.-born Whites, Blacks, and Latinos and three distinct Latino immigrant groups varying by citizenship and legal status. The results draw attention to a broad array of social vulnerabilities linked with group-level disparities in the accumulation of housing disadvantage, with implications for the literatures in social vulnerability, resilience, and housing.

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## Introduction

Scholarship in disciplines including development, disaster studies, ecology, urban planning, and psychology increasingly focus on the concept of resilience (e.g., Folke, 2006; Holling, 1973; Luthar, Cicchetti, & Becker, 2000; Masten & Obradovic, 2006; Cathy Wilkinson, 2012; Wilkinson, Porter, & Colding, 2010). Definitions and operationalizations of resilience vary both within and across disciplines (Adger, 2000; Luthar et al., 2000); “success under stress” is one concise way to define the concept (Pendall, Theodos, & Franks, 2012: 272). This literature includes an examination of the factors, pathways, and processes associated with resilience and the connection of resilience with outcomes for individuals, families, neighborhoods, cities, and at more macro levels (e.g., Folke, 2006; Hawley & DeHaan, 1996; Masten & Obradovic, 2006; Pendall, Foster, & Cowell, 2010; Van Zandt et al., 2012; Walsh, 2006). Scholars have considered how other factors are directly and indirectly linked with resilience. For instance, social vulnerabilities are the “characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from” extreme shocks, such as natural disasters (Blaikie, Cannon, Davis, & Wisner, 2003: 11).<sup>1</sup> Vulnerable people are more susceptible to harm and less resilient in response to an array of disruptions and negative life events (e.g., Blaikie et al., 2003; Cutter et al., 2003; Luthar, 1991; Luthar, 2003). Thus, as Adger (2000) puts it, social vulnerability is a “loose antonym” for resilience (348).

Recent work uses the social vulnerability perspective to explore how population characteristics and diversity are connected with precarious housing, with implications for resilience at the household, community and regional levels in the United States (Pendall et al., 2012; Van Zandt et al., 2012). For example, vulnerable people in precarious housing situations have lessened resources and abilities to cope with natural disasters, and thus experience “disproportionate losses” when such adverse events occur (Van Zandt et al., 2012). Researchers report that social vulnerabilities often overlap among

individuals/households and communities (Morrow, 1999; Pendall et al., 2012), but as yet have not considered another likely reality: that socially vulnerable people experience overlapping vulnerabilities in housing, as well. Inspired by these works, the current project examines the simultaneous overlap of three precarious housing conditions: renting, living in crowded housing, and residing in unaffordable housing.

Well-known sources of social vulnerability for each of the residential outcomes examined individually include stage of the life course, having lower levels of socioeconomic resources, being of non-White race/ethnicity, being foreign-born versus native-born, as described later in the paper. Scholarship further indicates that lacking citizenship and, more recently, that lacking legal permission to reside in the country are other important social vulnerabilities for immigrants relative to these outcomes. Although an emerging focus in research in housing and other areas, the resilience and social vulnerability literatures in many disciplines have paid relatively little attention to immigrants' legal status. For example, an influential work cited thousands of times—Blaikie and colleagues' At Risk: Natural Hazards, People's Vulnerability and Disasters (2003)—notes that “immigration status (whether ‘legal’ or ‘illegal’)” is one of several vulnerabilities that shapes differential impacts of natural disasters (11), but do not delve further into immigrants' legal status as a social vulnerability.<sup>2</sup> Thus, the present study aims to draw attention to the range of social vulnerabilities connected with precarious housing conditions.

The study carries out a descriptive and multivariate analyses with a sample of the three largest native-born groups in the U.S.—Non-Hispanic Whites, hereafter Whites, Blacks, and Latinos—and with three Latino immigrant groups: naturalized citizens, authorized non-citizens, and unauthorized non-citizens. The disaggregation of Latinos taps into their diversity by nativity, citizenship and legal status: nearly three-quarters of Latinos are either U.S. citizens at birth or are immigrants with naturalized

citizenship (Motel & Patten, 2013); the remainder are authorized non-citizen immigrants of differing eligibility to eventually become citizens (e.g., legal permanent residents, asylees, refugees, and others with more temporary authorization), or unauthorized non-citizens ineligible to permanently regularize their status. Mexican and Central American immigrants account for the majority of unauthorized migrants in the United States (Passel, Cohn, & Gonzalez-Barrera, 2013).

Data used in the analyses come from the Los Angeles Family and Neighborhood Study, collected between 2000 and 2002 in Los Angeles County. This county is the most populous in the nation (Mackun & Wilson, 2011) and has the largest Latino population and the largest unauthorized immigrant population of any U.S. county (Ennis, Ríos-Vargas, & Albert, 2011; Fortuny, Capps, & Passel, 2007).<sup>3</sup> The descriptive analyses identify the distribution of precarious housing situations (0→3) and other characteristics for the total sample and for each of the six groups. Next, multivariate analyses indicate which individual, family/household, and neighborhood-level characteristics comprise vulnerabilities when it comes to having two or more precarious housing conditions at the same time relative to fewer conditions. The analyses are carried out with the total sample and, then, with the Mexican, Central American, and other Latino immigrant sub-sample; the latter analyses incorporate migration-related characteristics that might comprise social vulnerabilities associated with having overlapping precarious housing conditions compared to fewer conditions. Finally, post-estimation analyses offer predicted probabilities of precarious housing conditions for diverse hypothetical cases of respondents, which illustrates how social vulnerabilities are linked with variations in the odds of having overlapping precarious housing conditions for different groups.

The study offers two primary contributions. First, recent work (e.g., Pendall, Theodos, & Franks, 2012) draws connections between social vulnerability, housing, and resilience; a useful next step is identifying who has overlapping precarious housing conditions and why. As described later, housing

scholarship increasingly examines the connections of a diverse set of individual, family/household, neighborhood, and more macro characteristics with residential outcomes. The present regression and post-estimation analyses indicate how an array of social vulnerabilities are linked with experiencing multiple precarious housing conditions simultaneously. The connections of these factors with poor housing situations are less well-known among researchers who do not specialize in housing; and yet, could be very relevant for thinking through connections of housing, vulnerabilities, and resilience. For instance, the results indicate that although there are significant disparities among the studied groups in the number of conditions they experience, controlling for variation in (often overlapping) social vulnerabilities completely explain unequal initial distributions of precarious housing conditions across most groups. Only one group, unauthorized non-citizen Latino immigrants, experience persistent unexplained disparities in the outcome, net of all included covariates. Immigrants' legal status is receiving more attention in housing and other literatures, and the unique position of immigrants lacking legal status in residential and other outcomes should be explicitly addressed as a social vulnerability in work focused on risk and resilience.

The second contribution stems from the tendency for researchers, policymakers, and others to focus on renting, crowding, and housing affordability problems individually and in isolation from one another. For instance, federal housing policy has long concentrated on these residential outcomes (Newman, 2008; Schwartz, 2010), but typically treat them as distinct housing domains. Yet, as this study emphasizes, vulnerable people typically experience several of these poor housing conditions at once. Thus, this study suggests how an additive approach to renting, owning, and housing affordability problems offers insights about the *accumulation* of housing disadvantages that socially vulnerable people experience. The next section summarizes the relevant literature for the study.

## **Background and Literature Review**

The first of three precarious housing conditions examined in this study is whether respondents rent or own their residence. The second is crowded housing, which indicates a poor fit between the size of the household and the size of the housing unit (Baer, 1976; Yust, 2012). The contemporary standard for crowding is housing units with more than 1 person per room (e.g., Baer, 1976; Myers, Baer, & Choi, 1996; Newman, 2008).<sup>4</sup> The third is housing affordability, indicated by a ratio of housing costs to total income. The typical rule of thumb is spending less than 30 percent of income on housing costs; those spending more are considered to have housing affordability problems (Combs, Combs, & Ziebarth, 1994; Jewkes & Delgadillo, 2010; Newman, 2008; Stone, 2006a).

All three outcomes are important for the well-being of children and adults. For instance, renting rather than owning a residence is connected with increased residential instability (McCabe, 2013); which in turn is associated with lower academic achievement and more behavior problems among children (Haurin, Parcel, & Haurin, 2002). Renters also tend to have less wealth than homeowners (Belsky & Prakken, 2004; Turner & Luea, 2009); and having more wealth is linked with better health and longer life expectancy (Deaton, 2002). Living in crowded housing is connected with decreased physical and psychological health of children and adults (Evans, Lepore, Shejwal, & Palsane, 1998; Evans, 2001; Leventhal & Newman, 2010; Solari & Mare, 2012). Housing affordability challenges are associated with declines in child cognitive achievement and educational outcomes (e.g., Brennan, 2011; Cohen, 2011; Conley, 2001).<sup>5</sup> Moreover, low-income households with housing affordability problems forces reductions in the resources they can allocate to other household expenditures, to savings and retirement planning, and to medical care that may result in poorer health and puts them at increased risk of homelessness (e.g., Joint Center for Housing Studies, 2012; Lipman, 2005; National Low Income Housing Coalition, 2013; Pollack, Griffin, & Lynch, 2010). This research suggests that living with

multiple precarious housing conditions places already vulnerable children and adults at risk for a broader array of negative consequences, with implications for resilience (Van Zandt et al., 2012).

### ***Sources of Social Vulnerability in Housing***

Common theoretical frameworks used to explain variation in residential outcomes include life course theory (Elder Jr., Johnson, & Crosnoe, 2003) and the locational attainment models of spatial assimilation and place stratification (e.g., Alba & Logan, 1992; Alba & Logan, 1993; Charles, 2006; Cort, 2010; Massey, 1985; Rosenbaum & Friedman, 2007), and when studying immigrants, theories of immigrant assimilation (e.g., Alba & Nee, 2003; Alba, Logan, Stults, Marzan, & Zhang, 1999; Friedman & Rosenbaum, 2004; Myers & Lee, 1998; Rosenbaum & Friedman, 2007). Although informed by these frameworks, this study emphasizes the social vulnerability perspective (Blaikie et al., 2003; Pendall et al., 2012; Van Zandt et al., 2012), and thus emphasizes the individual, household, and neighborhood-level characteristics that increase the likelihood of experiencing two or more precarious housing conditions.

*Life Cycle Stage.* Extensive housing research has identified the characteristics associated with the three outcomes. For example, those in earlier stages of the life cycle are more vulnerable to precarious housing conditions. Respondents who are younger are more likely to rent versus own (e.g., Alba & Logan, 1992; Burr, Mutchler, & Gerst, 2011; Coulson, 1999; DeSilva & Elmelech, 2012; Elmelech, 2004; Flippen, 2001b), are more crowded (Hall & Greenman, 2013; Myers & Lee, 1996; Pendall et al., 2012) and are more likely to have housing affordability problems (DeVaney, Chiremba, & Vincent, 2004; Elmelech, 2004; Luea, 2008; Oh, 1995). Similarly, relative to households without children, respondents with children are vulnerable when it comes to crowding (e.g., Burr, Mutchler, & Gerst, 2010; Elmelech, 2004; Friedman & Rosenbaum, 2004; Schill, Friedman, & Rosenbaum, 1998) and to having housing affordability problems (Elmelech, 2004), but not when it comes to renting over owning (Elmelech, 2004; Hall & Greenman, 2013). Unmarried individuals are more likely to rent (Burr et al.,

2010; DeSilva & Elmelech, 2012; Elmelech, 2004) and to be crowded (Burr et al., 2010; Hall & Greenman, 2013) but are less likely to have housing affordability problems (Elmelech, 2004). Another lesser-studied source of vulnerability pertains to living arrangements. Extended living arrangements is an important survival strategy for economic vulnerable groups (e.g., Chavez, 1990; Goerman, 2005; Leach, 2014), and multivariate analyses suggest that those living in extended living arrangements are more crowded than those living only with immediate family (Burr et al., 2010). Respondents' lower incomes and less education increase the likelihood of renting rather than owning a residence (e.g., Burr et al., 2011; Coulson, 1999; DeSilva & Elmelech, 2012; Elmelech, 2004; Krivo, 1986), crowding (Burr et al., 2010; Clark, Deurloo, & Dieleman, 2000; Conley, 2001; Hall & Greenman, 2013; Myers & Lee, 1996; Painter & Yu, 2010), and having housing affordability problems (DeVaney et al., 2004; Elmelech, 2004; Hall & Greenman, 2013) than their higher income and more educated counterparts.

*Race and Ethnicity.* Researchers have further shown that race/ethnicity shapes residential outcomes. In the case of renting versus owning, both Blacks and Latinos are more likely to rent than own, controlling for other differences (Alba & Logan, 1992; Charles, 2006; Elmelech, 2004; Pendall et al., 2012; Rosenbaum, 1996; Rosenbaum & Friedman, 2007).<sup>6</sup> However, being non-White is not necessarily an across-the-board- social vulnerability for all groups or all housing outcomes. For instance, some work suggests that Blacks are less likely to be crowded than similar Whites (Pendall et al., 2012; Rosenbaum & Friedman, 2007), while other studies indicate that Blacks are more likely to be crowded than Whites and other groups (Conley, 2001). Latinos are more crowded than Whites or Blacks, controlling for whether or not they are recent immigrants (Pendall et al., 2012). Turning to housing affordability, some studies indicate that similar Blacks and Whites are equally likely to have housing affordability problems (DeVaney et al., 2004; Elmelech, 2004; McConnell 2013), while other work suggests that it depends on tenure (Pendall et al., 2012). Research is equally mixed about whether



Latinos are more likely to have housing affordability problems than Whites. For example, multivariate analyses that control for nativity and other characteristics show that Latinos are equally likely to have housing affordability problems as similarly low-income Whites (McConnell 2012, 2013), while other studies show that specific Latino groups such as Puerto Ricans are less likely to be burdened than Whites (Elmelech, 2004).<sup>7</sup>

*Nativity.* Many housing studies show that being foreign born is a vulnerability relative to precarious housing conditions. For instance, compared to natives, immigrants have lower homeownership rates (e.g., Borjas, 2002; DeSilva & Elmelech, 2012; Flippen, 2001a; Krivo, 1995; Myers & Lee, 1998; Painter, Gabriel, & Myers, 2001) and are more crowded (e.g., Lobo, Salvo, & Hurley, 2012; Myers & Lee, 1996; Painter & Yu, 2010; Rosenbaum & Friedman, 2007; Schill et al., 1998).<sup>8</sup> Studies also observe that immigrants are very likely to report housing affordability challenges (Capps et al., 2002; Lipman, 2003; McArdle & Mikelson, 1994), such as Latin American immigrants being more likely to have housing affordability problems than native Whites (Schill et al., 1998) and immigrant homeowners more likely to have housing affordability problems than non-immigrant homeowners (Pendall et al., 2012). However, recent work, described below, suggests that for Latinos, being an immigrant is not a persistent social vulnerability relative to these outcomes, net of other factors.

*Immigrants' Citizenship Status.* Of the limited housing research explicitly examining citizenship differences among immigrants, nearly all of it concentrates on one outcome: renting versus owning a home. This work indicates that non-citizen immigrants are more likely than naturalized citizen immigrants to rent than own (e.g., Bradley, Green, & Surette, 2007; Burr et al., 2011; Cahill & Franklin, 2013; Coulson, 1999; Toussaint-Comeau & Rhine, 2004). Surveys suggest that non-citizen immigrants are more likely to be crowded than non-citizen immigrants (Blake. et al. 2007; Lipman 2003) and have more problems paying for housing in Los Angeles than naturalized U.S. citizens (Capps et al., 2002).

*Immigrants' Legal Status.* In the current social, political, and economic context, although there are important distinctions among immigrants on the basis of citizenship status, it is particularly disadvantageous to be illegally present in the country.<sup>9</sup> Indeed, extensive federal, state and local-level resources are allocated to apprehending, removing and prosecuting contemporary unauthorized immigrants, with concomitant increases in legislation focused on this group (e.g., National Conference of State Legislatures, 2013; Rosenblum & Meissner, 2014; U.S. Border Patrol, 1994; Varsanyi, Lewis, Provine, & Decker, 2012). A growing body of literature focuses on immigrants' legal status, typically those from Mexico and Central America.<sup>10</sup> For instance, scholars document the wide array of challenges that unauthorized immigrants from Latin America experience in the U.S. (e.g., Abrego, 2006; Chavez, 1990; Cort, 2010; Gonzales, 2011; Massey & Pren, 2012; Menjívar & Abrego, 2012; Menjívar & Kanstroom, 2014). Such challenges have real-world implications for the approximately 11 to 12 million unauthorized immigrants in the United States and the mixed-status households in which many unauthorized immigrants reside (Passel, Cohn, Krogstad, & Gonzalez Barrera, 2014).

Recent work reveals that lacking legal status is a social vulnerability for unauthorized immigrants relative to precarious housing conditions. Indeed, unauthorized immigrants encounter significant housing challenges in the U.S., with very high levels of residential crowding and substantial housing affordability problems (e.g., Chavez, 1990; Standish et al., 2010; Yoshikawa, 2011; Zavella, 2011). Multivariate analyses have addressed the three outcomes individually. For instance, Hall and Greenman (2013) use a national data source with imputed information about legal status to examine whether there are citizenship and legal status differences in homeownership and crowding for Mexicans and Central Americans. McConnell (2013, 2015, in press) uses subsamples of survey data for Los Angeles to examine homeownership, crowding, and housing affordability problems.<sup>11</sup> These works reveal that unauthorized Latino immigrants are more likely to rent than own, to live in housing units

with more persons per room, and to allocate more than thirty percent of income to housing costs than other Latino immigrants and U.S.-born groups (Hall and Greenman, 2013; McConnell 2013, 2015, in press). In fact, these studies confirm that residual disparities in these outcomes are *only* present for immigrants lacking legal status.<sup>12</sup> Combining all three residential outcomes is expected to emphasize even more directly the extreme social vulnerability of unauthorized non-citizen immigrants in the accumulation of precarious housing conditions than considering each of these conditions in isolation.

*Other Migration Characteristics.* Extensive research indicates that immigrants exhibiting relatively low levels of incorporation and integration in the U.S. are vulnerable relative to precarious housing situations. For instance, immigrants who are recently arrived to the U.S. and who lack English fluency are more likely to rent than own (e.g., Alba & Logan, 1992; Borjas, 2002; DeSilva & Elmelech, 2012; Elmelech, 2004; Painter et al., 2001; Pendall et al., 2012), to be crowded (e.g., Burr et al., 2010; Hall & Greenman, 2013; Krivo, 1995; Myers & Lee, 1996; Painter & Yu, 2010; Pendall et al., 2012), and to have housing affordability problems (Borjas, 2002; Elmelech, 2004; Hao, 2007; McConnell & Akresh, 2010; Pendall et al., 2012) relative to more experienced and English-fluent immigrant peers.

Lesser-studied migration characteristics also might constitute social vulnerabilities. For example, immigrants often experience long-term family separation across borders, with immigrants leaving behind their own children in the home country (e.g., Abrego, 2014; Menjívar, 2000; Zavella, 2011). When possible, many of these immigrants send money home to support immediate family members left behind (e.g., Massey, Alarcón, Durand, & Gonzalez, 1987; Menjívar, 2000; Sana, 2005).<sup>13</sup> Such connections may impose financial constraints that increase the likelihood of precarious housing in the U.S. For instance, immigrants with sons or daughters in Latin America are less likely to own than rent compared with immigrants without such attachments (McConnell, in press). To my knowledge, previous work has not demonstrated how such family connections are linked with the residential crowding or

housing affordability of Latin American immigrants. Nevertheless, the presence of these types of origin-country attachments may motivate immigrant respondents to live with overlapping precarious housing conditions so that more financial resources can be sent to the home country.

### ***Overlapping Social Vulnerabilities and Overlapping Precarious Housing Conditions***

Thus far, the literature review summarizes known vulnerabilities with respect to the three precarious housing conditions separately. Prior work suggests that social vulnerabilities overlap and are linked with poor housing outcomes (Pendall and colleagues 2012); the present study extends this work to consider the connections of an extensive set of social vulnerabilities with the overlap of precarious housing conditions. Consistent with past empirical and theoretical literature, the analyses are likely to show that respondents with less than high school education, lower income, younger, a single parent, and living in extended living arrangements are more likely to experience two or more of these conditions relative to fewer conditions than respondents who do not have these characteristics.

A central place where we can see the playing out of the relationship of overlapping social vulnerabilities and overlapping precarious housing conditions is in group-level differences by race, nativity, citizenship, and legal status. In line with recent work, I expect that baseline models will show that native-born Blacks and Latinos are more likely to have overlapping precarious housing conditions than native Whites, as are naturalized citizen and authorized non-citizen Latino immigrants. However, additional multivariate analyses are expected to confirm that these initial race/ethnicity, nativity, and citizenship gaps are due to group-level variation in other overlapping social vulnerabilities. That is, controlling for low education, income, earlier stage in the life cycle, and other factors, being non-White, foreign born, or being an authorized non-citizen are not independently linked with having two or more precarious housing conditions compared to fewer conditions. Thus, for all of these groups, their socio-demographic profiles and other characteristics are social vulnerabilities that place them at greater risk of

experiencing multiple precarious housing conditions simultaneously compared to White natives. On the other hand, consistent with recent work with unauthorized Latino immigrants, controlling for these social vulnerabilities will help explain but not fully eliminate the higher odds of two or more conditions or this group compared to others. Additional analyses limited to the Latino immigrant sample are expected to confirm that social vulnerabilities with respect to migration, although relevant to the outcome, do not eliminate the especially vulnerable position of unauthorized non-citizen Latino immigrants in multiple housing domains compared to other Latino immigrants.

### **Data and Methods**

The analyses are carried out with data from the first wave of the Los Angeles Family and Neighborhood Survey (L.A.FANS) collected between April 2000 and January 2002 from approximately 3,000 households in Los Angeles County (Sastry & Pebley, 2003). Poor and very poor census tracts, households with children, and Latinos were oversampled, with approximately 40 randomly selected households completing the survey in each of 65 census tracts, used to represent neighborhoods. Respondents selected the language of the personal interview, either English or Spanish. L.A.FANS collected information directly from respondents about nativity, country of birth, whether immigrants are naturalized citizens, and other information that can be used to classify non-citizen immigrants as authorized or unauthorized. Respondents were assured of the confidentiality of their responses and the privacy protocols established to protect their identities (Pebley & Sastry, 2004), which likely encouraged respondents to complete the survey and to provide honest answers to questions about nativity, citizenship and legal status. Analyses of L.A.FANS data indicate very low non-response rates to questions used to identify legal status and suggest that the data provides estimated profiles of the demographic characteristics of the unauthorized immigrants in Los Angeles that are similar to other estimates derived for Los Angeles (Bachmeier, Van Hook, & Bean, 2014). Researchers have used

L.A.FANS data to examine the relationship of immigrants' legal status with diverse outcomes (e.g., Cort, Lin, & Stevenson, 2014; Goldman, Smith, & Sood, 2005; McConnell 2013).

The analyses use the public and restricted versions of several L.A.FANS modules. One randomly selected adult (RSA) was selected from the roster of full-time adult household residents to answer most questions used in the analyses.<sup>14</sup> A member of the RSA's immediate family who was the most informed about finances reported financial information pertaining to the respondent's immediate family (spouse/partner or children) rather than the household (Peterson et al., 2004). Data about the adult respondent and family/household are linked with a restricted-version of L.A.FANS that identifies respondents' census tract of residence and the L.A. Neighborhood Services and Characteristics database (L.A.NSC), a publicly available database of census-tract level information created by L.A.FANS staff (Peterson, Pebley, & Sastry, 2007). The files are merged so that each record includes information about the respondent and immediate family, household, and census tract. The final analytic sample size is 1356.<sup>15</sup> 669 are Latino immigrants, a comparable sample size of immigrants to other specialized surveys collected in Los Angeles (Capps et al., 2002; McConnell & Marcelli, 2007; Zhan, Anderson, & Zhang, 2012; Zhou, Lee, Agius Vallejo, Tafoya-Estrada, & Xiong, 2008).

### ***Analytic Approach***

The analyses begin with a descriptive overview of the total sample, the three native-born groups, and the three Latino immigrant groups. The descriptive analyses and ancillary multivariate analyses, not shown, indicate that dependent variable should be a binary variable, with a value of 1 for two or more precarious housing conditions (renting, crowded, and/or housing affordability problems), 0 otherwise.<sup>16</sup> Odds ratios generated from these specifications are interpreted for each independent variable as the odds of having two or more precarious conditions compared to fewer numbers of conditions, holding other variables constant. Features of the complex survey design of L.A.FANS are addressed by using the

survey (svy) commands in STATA 11 for both descriptive and multivariate analyses. Setting the survey features and using the svy commands address the effect of clustering of respondents in census tracts, strata of poor and non-poor neighborhoods, sampling weights and yield the best standard error estimates for the models.

Multivariate analyses with the total sample involve two logistic regression specifications: the first is a baseline model estimating the main effects of nativity, citizenship, and legal status and the second model adds the full set of background variables including indicators of social vulnerability.<sup>17</sup> These two specifications are carried out twice; the only change is the reference category. The reference group is U.S. born Whites in the first set, naturalized citizens in the second set, and unauthorized non-citizens are the reference group in the third set. Additional logistic regression analyses are carried out with the Latino immigrant sample in order to incorporate potential social vulnerabilities pertaining to migration. Three specifications are estimated with the Latino immigrant sample: a baseline model with the main effects of immigrants' citizenship and legal status, a second model incorporates the same set of background variables used with the total sample, and a third specification adds the migration-related variables. These specifications are executed with naturalized citizens as the reference group in the first set and unauthorized non-citizens as the reference group in the second set. Finally, to aid in interpretation of the results and to highlight the connections of social vulnerabilities with overlapping precarious housing conditions, the Margins command in STATA (Long & Freese, 2014) is used in post-estimation analyses to calculate the predicted probabilities of overlapping precarious housing conditions for diverse hypothetical profiles of respondents.

#### *Dependent Variable*

The dependent variable indicates two or more precarious housing conditions, depending on whether respondent rents their residence and/or meets the standards for crowding and housing

affordability problems. Crowding is indicated by dividing the number of total household members by the number of rooms in the housing unit, excluding bathrooms and the kitchen; those with a PPR over one are crowded. Respondents who spend more than thirty percent of income on housing costs are living in unaffordable housing.<sup>18</sup> For renters, housing costs comprise the annual total of rent payments provided in the survey. Some adjustments were needed for homeowners to better reflect housing costs.<sup>19</sup> Housing costs could be underestimated for some groups and overestimated for others.<sup>20</sup> Table 1 provides more information about the variables used in the analyses.

#### Table 1 About Here

##### *Independent Variables*

*Nativity, Citizenship, and Legal Status.* U.S. born Whites, Blacks, and Latinos are native-born respondents who identify as White, Black/African American or Latino/Hispanic/Latin American, respectively. Latino immigrants are respondents born in Mexico, Central America, or other parts of Latin America. Naturalized citizens are immigrants responding affirmatively to a survey question asking about U.S. citizenship. Authorized non-citizens identify as a legal permanent resident or report having asylum, refugee status, temporary protected status, or a valid visa. Immigrants were not directly asked whether they lack authorization to reside in the country. Instead, immigrant respondents are classified as unauthorized non-citizens if they responded negatively to questions about naturalized citizenship, other forms of legal permission, or if they stated that they have an expired visa. This is an accepted approach for identifying unauthorized immigrants in survey research (e.g., Capps et al., 2002; Goldman et al., 2005).

*Other variables.* Additional covariates included in the specifications are operationalized from the perspective of social vulnerability: such as less than high school education, a single parent, and respondent is not an immediate family member of the household head, which suggests the presence of



extended living arrangements. Following Pendall et al. (2012), income and age are entered in the models as continuous log transformations of those variables. Lacking financial access is a social vulnerability particularly relevant to Latinos and African Americans (e.g., Hogarth, Anguelov, & Lee, 2005), immigrants (Osili & Paulson, 2009), and immigrants lacking U.S. citizenship or legal status (e.g., Amuedo-Dorantes & Bansak, 2006). Those without bank accounts are likely to experience other barriers to establishing credit histories (Yoshikawa, 2011; Zhan et al., 2012) which may reduce options for achieving mortgage financing to purchase a home and to satisfy credit requirements that landlords often require to rent a housing unit. Previous work shows that lacking a bank account is linked with owning over renting and having housing affordability problems (McConnell 2013, in press).

Other background variables incorporated in the models capture potential sources of heterogeneity relevant to precarious housing conditions, such as the respondents' current employment status and gender of the respondent. Indicators of country/region of origin/ancestry for Latinos (Mexican, Central American, Other Latino, and unknown origin/ancestry) are included as these groups have different demographic profiles (Lopez, Gonzalez-Barrera, & Cuddington, 2013) and experience different U.S. immigration policy contexts. A variable, recently moved, indicates respondents' residential instability.<sup>21</sup> Three neighborhood-level variables tap into immigrant, economic, and housing context; entered here as location quotients (LQ) that measure the relative concentration of the respondent's census tract compared to the average for all census tracts in Los Angeles County. Thus, a value of one for the variable tapping into high recent immigrant context indicates that the census tract has a higher than county average on this characteristic.

Logistic regression analyses with the Latino immigrant sample include variables tapping into various aspects of the migration experience, most are operationalized as reflecting vulnerabilities. Linguistic incorporation is typically operationalized in U.S. immigration research as English

proficiency. This wave of L.A.FANS did not collect information about immigrant respondents' proficiency in English, but does specify whether respondents selected the English or Spanish version of the survey. The analyses include a binary indicator that the respondent used the Spanish survey, suggesting that respondents feel more comfortable or prefer communicating in Spanish over English. Another variable is years in the United States.<sup>22</sup> The final two variables suggest emotional and financial attachment to the origin country: having one or more sons/ daughters in Latin America and mother in Latin America. As noted earlier, very few housing studies include variables tapping into these connections to the origin country.

## **Results**

### ***Descriptive Analyses***

Figure 1 presents the number of precarious housing conditions for the total sample and for the six groups. The sharp differences across groups are immediately apparent. For instance, more than half of native Whites experience *no* precarious housing conditions and only 3 percent of this group simultaneously rent, are crowded, and live in unaffordable housing. Nearly a third of African Americans have no precarious housing conditions and 11 percent experience all three; U.S. born Latinos have similar distributions of precarious housing conditions. Non-citizen Latino immigrants are in less advantageous positions compared with natives, and unauthorized non-citizens are in by far the worst situation: none have zero precarious conditions and 60 percent have all three precarious housing conditions at the same time. Table 2 indicates that renting is the most frequent precarious housing condition for each group, among other information. Figure 2 provides the distributions of the dependent variable used in the analyses, having two or more precarious housing situations for the total sample and for each of the six groups. Analyses, not shown, confirm that these distributions are statistically significant across groups. These distributions may not appear all that surprising based on prior research

that separately addresses these outcomes. Nevertheless, using an additive approach puts group-level disparities in the housing “bundle” of renting, crowding, and housing affordability problems in sharper relief.

Figure 1 About Here

Table 2 About Here

Figure 2 About Here

Table 3 provides the descriptives of the independent variables for the total sample and the six groups. The total sample has a median family income of \$33,000, averages around 41 years old, mostly high school graduates, live with immediate family rather than in extended households, have a bank account, have lived in current residence for more than a year, and reside in neighborhoods with higher proportions of immigrants, lower median household incomes, and lower median home prices than the county average. Most respondents are not single parents and live in neighborhoods where the average concentration of recent immigrants is lower than the county average. Latinos in the analytic sample are predominantly of Mexican origin/ancestry, as is true for Los Angeles County and the U.S. as a whole.<sup>23</sup>

Statistical testing, not shown, indicates variation in social vulnerabilities among natives by race/ethnicity. For instance, U.S. born White respondents are less socially vulnerable than Black or Latino natives in the areas of income, having a bank account, are less likely to be single parents, and less likely to live in neighborhoods that have higher proportions of recent immigrants, lower incomes, and lower median home prices than the county average. The descriptives and associated statistical testing also indicate variation among Latinos. For example, all three Latino immigrant groups are less likely than U.S. born Latinos to have graduated from high school and to live in neighborhoods with higher relative concentrations of recent immigrants. Many more differences are observed among Latino

immigrants. Indeed, relative to naturalized citizens, authorized and unauthorized non-citizens have lower levels of high school completion, lower incomes, are younger, less likely to have bank accounts, more recent arrival to the U.S., more likely to complete the survey in Spanish, and a mother in Latin America. Contrasts of authorized and unauthorized non-citizen Latino immigrants indicate similar education level, neighborhood context, and transnational attachments; however, unauthorized immigrants have lower incomes, are younger, are less likely to have a bank account, have fewer years of U.S. residence, and are more likely to complete the Spanish survey of L.A. FANS than authorized non-citizens.

Table 3 About Here

### *Multivariate Analyses*

Table 4 presents the baseline and fully-specified models with the total analytic sample, with changes in the reference categories to illuminate several points. Consequently, the odds ratios for variables beginning with the “less than high school” row are identical across specifications with different contrasts (e.g., models 2, 4, and 6 in Table 4). As described earlier, low socioeconomic resources, younger stage of the life cycle, single parenting, and immigrant neighborhood and housing context are known sources of social vulnerability in predicting renting versus owning, housing affordability, and crowding. Table 4 confirms that some are vulnerabilities associated with the accumulation of overlapping precarious housing conditions for this analytic sample. For instance, respondents with less than high school have about 1.9 times higher odds of having two or more precarious housing conditions compared to fewer conditions than their more educated counterparts. The results also suggest that a far lesser-studied characteristic, lacking a bank account, also is associated with poorer housing outcomes. Indeed, those without a bank account have nearly twice the odds (odds ratio of 1.98) of experiencing two or more precarious housing conditions relative to lesser conditions than those with a bank account. Latino respondents with missing information about their origin/ancestry are less likely to experience the

outcome than those who identify as Mexican. Other variables, such as respondent is female, currently employed, and respondent is not part of the household head's immediate family are not associated with the outcome.

#### Table 4 About Here

Turning to group-level differences, the baseline model of Table 4 shows that all groups are more likely to have two or more precarious housing conditions than U.S. born Whites. However, for nearly all groups, these initial differences are fully explained in the fully-specified model (Models 1 and 2, Table 4). Indeed, controlling for other variables, U.S. born Blacks and Latinos, and naturalized citizen Latino immigrants are equally likely as U.S. born Whites to have overlapping precarious housing conditions. Specifications with naturalized citizen Latino immigrants (Models 3 and 4) as the reference group show similar patterns, that is, that nearly all groups have equal odds of two or more conditions relative to fewer conditions, in the baseline model or the fully-specified model. Thus far, the results indicate that being a non-White native is not a social vulnerability relative to Whites vis-à-vis the outcome except as it is manifested through being more likely to have other social vulnerabilities. Similarly, among Latinos, simply being foreign born (e.g., in the case of naturalized citizens) are not independent sources of social vulnerability when compared to natives with similar characteristics.

Interestingly, however, the analyses presented in Table 4 indicate that authorized non-citizen Latino immigrants are more likely to have overlapping precarious housing conditions than the three native born groups and naturalized citizen Latino immigrants. The discrepancy declines across specifications (Models 1-2, 3-4) suggesting that controlling for other social vulnerabilities reduces this disadvantage. Nevertheless, the second and fourth specifications show that, net of included covariates, authorized non-citizens are more likely to have two or more precarious housing conditions than most other groups. Previous work observes this pattern for homeownership (McConnell, in press), but not for

housing cost burden or crowding (McConnell 2013, 2015).<sup>24</sup> These connections are further examined in the next set of analyses.

Finally, as suggested by the descriptive analyses and in previous scholarship, unauthorized non-citizen immigrant Latinos are in the worst position of all groups when it comes to the odds of simultaneously experiencing two or more of the precarious housing conditions, net of other included covariates. This is shown most strikingly in the final column of Table 4, where the odds ratios range from about 0.10 times the odds of the highest level of the outcome for U.S. born Blacks to 0.28 times the odds for authorized non-citizen Latino immigrants, relative to unauthorized non-citizen Latino immigrants (Model 6). The disparities between unauthorized non-citizen Latinos and all others decline between the baseline and full models (models 5 and 6), indicating that controlling for other social vulnerabilities (e.g., low income, young ages, not having a bank account) helps explain some of the initial gaps. Nevertheless, unauthorized non-citizens remain persistently disadvantaged, by a large margin, compared to all groups including their authorized non-citizen Latino immigrant counterparts.

Table 5 presents the results of analyses limited to the Latino immigrant sample, which incorporates migration-related characteristics. Three patterns of results are most notable. First, the fully-specified model for Latino immigrants presented in Table 5 (models 3 and 6) shows that some sources of vulnerability identified in analyses with the total sample also hold for Latino immigrants: low income, younger age, and single parenting. For instance, a one unit increase in the log of family income is associated with an approximately 0.19 decrease in the odds of having two or more precarious housing conditions compared to fewer conditions. Two variables not significant in the analyses with the total sample are significant for Latino immigrants: respondents who are female and respondent who are currently employed both have lower odds of having two precarious housing conditions relative to their male and unemployed peers. On the other hand, some social vulnerabilities identified for the total

sample, such as less than high school, not having a bank account, and immigrant and home price context of the neighborhood are not significant in analyses with the Latino immigrant sample (models 3 and 6, Table 5), suggesting that these variables are associated with the outcome for natives but not for Latino immigrants.

#### Table 5 About Here

Second, the analyses indicate that, of the four variables tapping into immigrant incorporation and attachment to the origin country, only having a mother who resides in Latin America is linked with the outcome, net of other variables. Respondents with mothers in Latin America have nearly four times the odds of having overlapping precarious housing conditions compared to immigrants who do not (third model, Table 6). Having a son or daughter in Latin America is not independently linked with the outcome; perhaps because relatively few immigrants are in this situation (Table 3) and the analyses do not account for the age of the son(s)/daughter(s) in Latin America. Descriptive analyses presented earlier suggest that relative to other Latino immigrants, unauthorized non-citizens have fewer years of U.S. experience and are more likely to opt to take the L.A.FANS survey in Spanish; however, neither variable is associated with the outcome in the final model of Table 6. The latter variable is an indirect measure of linguistic incorporation, which could explain the lack of significance for the variable. Another possibility is that both years of U.S. residence and language of survey are linked with the outcome indirectly via differences in income, being employed, citizenship, and legal status.

Third, Table 5 shows that accounting for differences in migration-related variables does eliminate the disparities between authorized non-citizens and naturalized citizens identified earlier (model 2, Table 4; model 3, Table 5). However, the inclusion of such variables does not eliminate gaps for unauthorized non-citizens relative to other immigrants. Indeed, the sixth model shows that the odds of having two or more precarious housing conditions relative to lower numbers of conditions are about

0.26 and .42 times lower for naturalized citizens and authorized non-citizens, respectively, than for unauthorized non-citizens, controlling for other characteristics. Thus, all else equal, simply lacking U.S. citizenship is not a persistent social vulnerability relative to the accumulation of precarious housing conditions—but lacking legal status is—net of migration characteristics and other factors.

### ***Predicted Probabilities for Different Respondent Profiles***

Using the final logistic regression models carried out with the total sample (model 2 in Table 4), predicted probabilities of having two or more precarious housing conditions are estimated for ideal types of respondents setting specific values of some independent variables and assigning the values of other variables at their means (Logan and Freese 2014). These hypothetical profiles are drawn from the descriptive statistics presented in Table 3 using the typical characteristics for each group on variables associated with the outcome with the total analytic sample (model 2 of Table 4). A second set of predicted probabilities are generated to illustrate how possessing several social vulnerabilities changes the predicted probabilities of having overlapping precarious housing conditions.

The first ideal type is a U.S.-born White high school graduate, 49 years old, not a single parent, has a family income of \$51,000, and has a bank account. A similar, more socially vulnerable respondent is a U.S.-born White respondent who is younger (34 years old) and a single parent but the same education level, income, and has a bank account. The second ideal type is a U.S.-born Black high school graduate, 40 years old, not a single parent, \$28,000 family income, and has a bank account. The more socially vulnerable African American respondent is a single parent without a bank account, but otherwise has the same characteristics as the ideal type. A third hypothetical profile is a U.S. Born Latino high school graduate, 34 years old, not a single parent, income of \$31,600, and has a bank account. A more socially vulnerable native-born Latino respondent is similar but did not complete high



school and is a single parent. Figure 2 presents the estimated predicted probabilities based on these characteristics.

### Figure 2 About Here

As would be expected given the previously discussed results of the associations of some vulnerabilities with the outcome, Figure 2 shows large gaps in the predicted probabilities of having two or more precarious housing conditions across the hypothetical profiles of typical White, Black, and Latino native respondents. Comparing the typical respondent with a more socially vulnerable respondent of the same race and nativity but otherwise similar characteristics hints at how overlapping social vulnerabilities (e.g., younger, less education, single parenting, no bank account) are associated with very different likelihoods of having two or more precarious housing conditions. For instance, the typical U.S. born Black respondent in the sample has a predicted probability of less than 20 percent of having two or more precarious housing conditions compared with no conditions. However, a similar but more socially vulnerable respondent (single parent, no bank account) has double the probability of having two or more precarious housing conditions (42.8 percent probability). U.S. born Whites and Latinos with more vulnerable profiles experience similar increases in the probability of simultaneous poor housing situations compared to when they do not possess those characteristics. The same exercise with the Latino immigrant sample and the fully-specified model for that sample, not shown, suggests similar increases in the likelihood of two or more conditions relative to when immigrant respondents are less vulnerable.<sup>25</sup> These simulations are useful for illustrating how different social vulnerabilities help shape the accumulation of housing disadvantage.

## Discussion and Conclusion

Extensive research documents how renting, crowding, and unaffordable housing are associated directly and indirectly with the well-being of children, adults, and communities. Recent work connects social vulnerability and housing (Pendall et al., 2012) and suggests that difficult housing situations reduce the capacity for resilience (Van Zandt et al., 2012). The present study's additive approach draws attention to the accumulation of housing challenges that socially vulnerable groups experience, the diverse array of vulnerabilities linked with those challenges, and the uneven distribution of multiple precarious housing conditions across social groups.

Previous work suggests that among other factors, being non-White, an immigrant, lacking U.S. citizenship or legal authorization to reside in the country are sources of social vulnerability for these outcomes separately. Using a sample of diverse native-born groups and Latino immigrants, the multivariate analyses show that although many groups are disadvantaged relative to native-born Whites; most gaps are completely explained by differences in sources of social vulnerability such as less education, lower income, younger ages, and not having a bank account. Yet, to the extent that different groups have different profiles, they also have different likelihoods of experiencing more than one precarious housing condition at a time. For example, Figure 2 indicates that the typical White native respondent in the sample has a predicted probability of less than ten percent of experiencing two or more simultaneous conditions, while the typical native Black and Latino respondents have predicted probabilities that are two or three times higher, respectively, of the same outcome.

More research is needed that explores how housing more generally and the “bundle” of housing (such as housing tenure, crowding, and housing affordability) might be connected with the capacity for resilience among children and adults. One potentially fruitful avenue is via residential mobility; those who rent, are crowded, or have housing affordability problems are in situations that encourage frequent

moving. Recent work suggests that residential mobility is linked with changes in family and other contexts, which could in turn shape children's development at different developmental periods (Anderson, Leventhal, Newman, & Dupéré, 2014). This could apply to resilience, as well. That is, the accumulation of precarious housing conditions could work together over and above each of the conditions on its' own to lead to increased residential mobility, to shifts in family, school, neighborhood contexts, and consequently, to differing capacities for children to bounce back after shocks, traumas, and negative life events.

Moreover, the Latino immigrant analyses confirm that relative to naturalized citizens and authorized non-citizens, unauthorized non-citizens not only possess a host of social vulnerabilities known to be associated with precarious housing conditions, but controlling for these and other characteristics, such as familial attachments to the origin country, do not eliminate their much higher odds of overlapping precarious housing conditions than other groups. These results, along with previous research, underscore the need for continued exploration of the many vulnerabilities of immigrants who lack legal status, while also remaining mindful of the social construction of these categories. Indeed, as powerfully argued by numerous scholars (e.g., De Genova, 2004; Menjívar, 2006, 2011; Menjívar & Kanstroom, 2014), the state's creation of binary categories like legal and illegal is inherent to *how* and *why* unauthorized immigrants are socially vulnerable (Menjívar, 2011) and why they are predisposed to overlapping vulnerabilities. Clearly, the diverse realities of immigrants by citizenship and legal status deserve greater attention in resilience literatures in disciplines such as disaster studies, ecology, and urban planning, given the implications of illegality for capacities for resilience among immigrants themselves, their families, and the communities and regions in which they reside.

Finally, the results have implications for housing policy. For instance, although many federal, state, and local housing programs have been developed to provide decent and affordable housing to disadvantaged individuals and families; this study suggests that taking a more comprehensive approach to understanding the housing profiles of vulnerable people also could be useful. The study also offers insights for specific programs. For example, federal housing assistance for low-income households tends to focus on renting units in private housing; such as providing Section 8 vouchers to help households meet the gap between rent costs and thirty percent of their income (Schwartz, 2010). Median family income for many of the groups in this sample are below 50 percent of the area median income (AMI) (\$52,100) for Los Angeles in 2000 (U.S. Department of Housing and Human Development, 2000), 50 percent of the AMI is generally the upper limit of families eligible for housing vouchers. Local public housing agencies are required to provide three-quarters of Section 8 vouchers to families with income below 30 percent of the AMI (U.S. Department of Housing and Human Development, n.d.). The low median family incomes of many groups in this study suggest that many respondents would meet this criteria. At present, there are far fewer vouchers available than eligible applicants, and the waiting list for assistance can be many years. Nevertheless, the extremely low financial resources, other social vulnerabilities, and the high likelihood of experiencing all three precarious housing conditions for authorized and unauthorized non-citizen Latino immigrants point to the severe and unmet housing needs of these groups. This is especially true for unauthorized non-citizens, who are not eligible for programs such as vouchers to provide rental assistance but may reside in households with family members eligible for this assistance (U.S. Department of Housing and Human Development, n.d.).

The study has a number of limitations. For instance, the study analyzes data for one county, Los Angeles County, an area with lower than average homeownership rates, higher than average housing costs (Census Bureau), and recently dubbed the “epicenter of crowded housing” in the United States

(Alpert Reyes & Menezes, 2014). Los Angeles has had a fragmented approach to immigrant integration compared to other places who have been more open to immigrants (Pastor & Mollenkopf, 2012). Analyses of data collected in other housing, economic, and immigrant contexts could suggest different results about the distribution of multiple precarious housing conditions and their overlap among socially vulnerable groups. Moreover, this study uses data from 2000-2002; analyses with more recent data could offer insights about overlapping precarious housing conditions after the Great Recession. Although not available in L.A. FANS, analyses of data sources containing information about the age, physical condition of housing units, and whether units are single-unit or multi-unit residences could provide a more expanded profile of the housing bundle with respect to precarious housing conditions. Finally, Presidential executive actions in 2012 and 2014 providing stays of deportation and work permits to some unauthorized immigrants lacking legal status suggest that, if these actions are implemented on a long-term basis, eventually it could be important to investigate whether there are meaningful differences in the residential outcomes of those who meet the requirements to benefit from these actions and those who do not.

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<sup>1</sup>Definitions of social vulnerability vary. For instance, Adger (2000) defines social vulnerability as “the exposure of groups of people or individuals to stress as a result of the impacts of environmental change...Social vulnerability in general encompasses disruption to livelihoods and loss of security...” (348). Cutter and colleagues (2003) defines it as, “those social factors that influence or shape the susceptibility of various groups to harm and that also govern their ability to respond” (243).

<sup>2</sup>Immigration researchers have emphasized the vulnerabilities of international immigrants (e.g., Bustamante 2002; Martínez, Slack, and Vandervoet 2013) but do not link the concept with resilience.

<sup>3</sup>LA County is in the top seven counties for Whites and Blacks (Lewis Mumford Center for Comparative Urban and Regional Research, 2001).

<sup>4</sup>Although an influential standard for crowding, some scholars argue that crowding standards are subjective judgment evaluations reflecting national context, social class, cultural norms, and other factors (Evans, Leopore, & Allen, 2000; Pader, 1994, 2002).

<sup>5</sup>Recent work suggests that spending too little on housing costs can also be problematic for children (Newman & Holupka, 2015).

<sup>6</sup>DeSilva & Elmelech (2012) find that net of other variables, Mexicans and Non-Hispanic Whites are equally likely to own as rent, while Blacks, Asians, Puerto Ricans, and other Hispanics are more likely to rent as own.

<sup>7</sup>DeVaney et al. (2004), cited earlier in this section, combines Latinos in an “other races” group and finds that this group is more likely to have housing affordability problems than Whites.

<sup>8</sup>Shier and others (2014) also employ the language of vulnerability to explore being homeless or living temporarily with family or friends as precarious housing.

<sup>9</sup> Although legal status as authorized or unauthorized is often treated as an individual-level characteristic, the immigration policy context and state level policies towards different groups delineate the eligibility for citizenship and authorized means of entry and U.S. residence (e.g., De Genova, 2004; Menjívar, 2006, 2011).

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<sup>10</sup>Yoshikawa (2011) studies undocumented immigrants from more diverse origins.

<sup>11</sup>These works use different samples, different sets of covariates, and operationalizations of variables including Latino immigrants' citizenship and legal status compared to the present study. For example, analyses of housing affordability (McConnell 2013) use a low-income sample of native Whites, Blacks, Latinos and Latino immigrants differentiated into two groups: authorized or unauthorized; the specifications for immigrant analyses tap into length of U.S. residence and English proficiency but not additional variables considered in the present work. Similarly, analyses of crowding employ a Latino-only sample and the dependent variable is a continuous variable of persons per room (McConnell 2015).

<sup>12</sup>Two studies do not show that being unauthorized disadvantages in housing outcomes, controlling for these variables—one concerns owning versus renting (McConnell & Marcelli, 2007) and the other uses a lesser-used operationalization of housing affordability (McConnell 2012).

<sup>13</sup>Other work report a positive association between owning and remitting (Marcelli and Lowell 2005); another study finds a negative parabolic relationship of amount of remittances and owning (relative to renting) for Latin American immigrants (McConnell and Akresh 2008). Unfortunately, L.A.FANS does not have data about remittances.

<sup>14</sup> This study includes only adults who filled out the adult module as the RSA or, in households with children under 18, as the RSA or the primary care giver (PCG) of a randomly selected child. This study exclude households in which there were more than one nuclear family resided in the home, and the RSA and the PCG could be from different nuclear families and both families could have filled out the household survey depending on respondent selection criteria. Respondents from a “second” nuclear family were excluded, due to concerns about their correlated errors with the “first” family and the focus of this study on outcomes measured at the household level (e.g., rent, crowding, housing affordability). Multivariate analyses incorporate an indicator of whether the respondent is an immediate family member of the household head to account for differences in household structure. Finally, some respondents reported a ratio of income to housing costs over 100 percent; either because they reported housing costs greater than their income or reported income but no housing costs. The sample excludes these respondents, due to concerns about the quality of their housing cost and/or income data. Ancillary regression analyses including such respondents indicates identical results to those presented here.

<sup>15</sup>As a very small number of respondents in L.A.FANS are immigrants who identify as non-Hispanic White or Black, only native-born members of either group are included in the study. Due to the small sample size and heterogeneity of US and foreign-born Asians and Pacific Islanders in L.A.FANS data, they are excluded from the analyses. Previous analyses of these data with outcomes such as housing cost burden (McConnell 2013) rely on a low-income sample; the income restriction has been removed for this study.

<sup>16</sup>As descriptive information later shows, no unauthorized non-citizen Latino immigrants have 0 precarious housing conditions; this indicates that the dependent variable should not take the form of a 0→3 distribution. However, ancillary analyses that do take that approach, Ordinary Least Squares (OLS) regression analyses and Ordinal Logistic regression analyses yields the same substantive conclusions and nearly identical results as those presented here.

<sup>17</sup>Collinearity diagnostics calculated for each model indicate that multicollinearity is not a serious problem biasing the results (Menard 1995).

<sup>18</sup>Income includes salary and wages earned from employment, public assistance, and assets such as rental property, stocks and bonds.

<sup>19</sup>L.A.FANS asked homeowners about the value of their home and asked homeowners with mortgages whether the mortgage amount included taxes or property insurance. For homeowners who reported that their mortgage payment excluded one or both of these items, their housing costs were increased to reflect these other items based on alternate information. For homeowners who reported that their mortgage payment does not reflect property taxes, their housing costs also include annual property taxes of 1.16 percent, the average property tax rate for Los Angeles County (Christensen & Esquivel, 2010) based on the self-assessed value of their home provided to L.A.FANS. Housing costs for those whose mortgage payments do not reflect homeowners' insurance premiums include the average homeowners' annual premium for California from U.S. Census Bureau data for the year that the respondent was surveyed: \$592 in 2000, \$599 in 2001, and \$660 in 2002 (U.S. Census Bureau n.d.). L.A.FANS did not ask homeowners without mortgages about housing costs; for these respondents, housing costs are estimated property taxes and homeowners' insurance based on the value of their home. Data from an imputed file created by L.A.FANS staff (Bitler & Peterson, 2004) are used when there is missing information about income, housing costs, or the home value of owned homes.

<sup>20</sup>L.A.FANS did not ask renters or homeowners about utility or other housing-related expenditures so housing costs may be underestimated for renters; a common feature of data sets used to study housing affordability (DeVaney et al., 2004; Luea, 2008). Homeowners with mortgages can deduct mortgage interest and property taxes from their federal income taxes; this provides a significant tax savings that reduces their overall housing costs. Thus, any underestimation may be more likely for renters than for homeowners with mortgages.

<sup>21</sup> Nearly all respondents who had recently moved came from elsewhere in California.

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<sup>22</sup>Sensitivity analyses were carried out with this variable. Analyses using alternative operationalizations of length of U.S. residence, such as a binary indicator of immigrant arrived since 1990, also is not significantly linked with the outcome.

<sup>23</sup>In 2000, about 72 percent of Latinos in Los Angeles identify as Mexican (U.S. Census Bureau, 2000).

<sup>24</sup>See note 10 for how these analyses differ.

<sup>25</sup>For instance, an authorized non-citizen Latino immigrant respondent who is 37 years old, not a single parent, family income of \$20,000, is employed, and mother is not in Latin America has a 60.4 percent probability of having two or more conditions; if the same respondent's mother is in Latin America, the probability of two or more conditions increases to 85.6 percent.

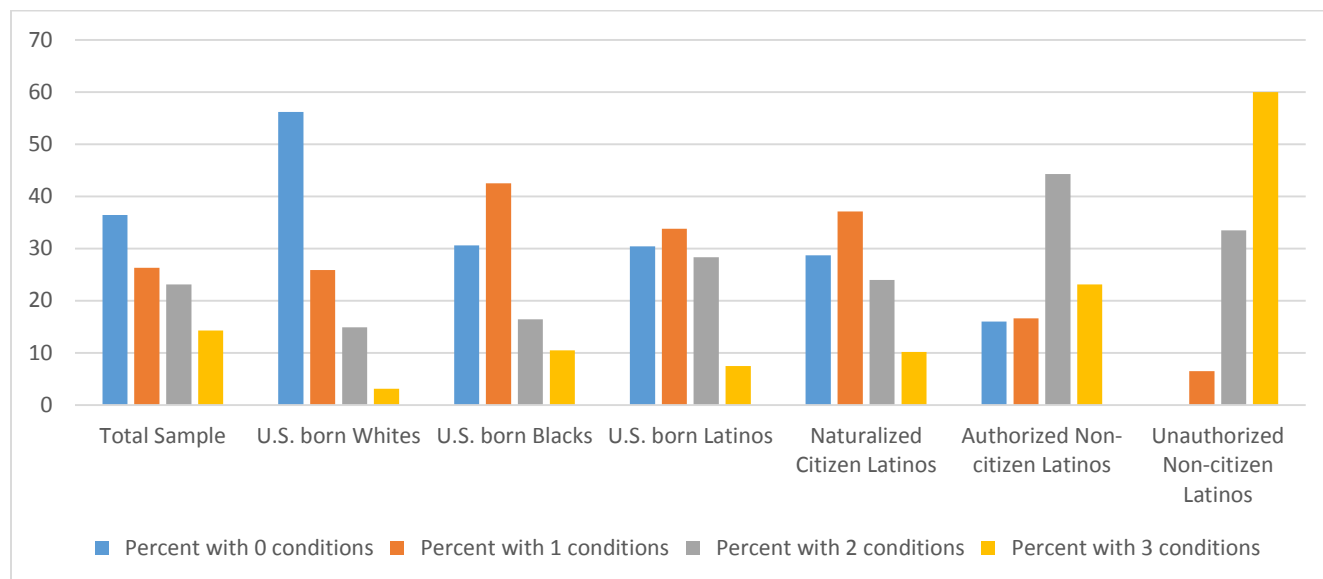
Table 1. Description of Variables Used in the Analyses

Variable label	Operationalization
<b>Dependent Variable</b>	
Two or more Precarious Housing Conditions	1 if two or more of the following conditions exists: housing unit is rented, more than 1 person per room in the unit, and/or spends more than 30 percent of family income on housing costs, 0 otherwise.
<b>Independent Variables</b>	
<i>Nativity, Citizenship and Legal Status</i>	
U.S. Born White	1 if respondent is Non-Hispanic White and born in U.S., 0 otherwise
U.S. Born Black	1 if respondent is Black and born in U.S., 0 otherwise
U.S. born Latino	1 if respondent is Latino and born in U.S., 0 otherwise
Latino immigrants	
Naturalized citizen	1 if respondent is Latino, not born in U.S., and is naturalized U.S. citizen; 0 otherwise
Authorized non-citizen	1 if respondent is Latino, not born in U.S., not citizen, and authorized to be in country; 0 otherwise
Unauthorized non-citizen	1 if respondent is Latino, not born in U.S., not citizen, not authorized to be in country; 0 otherwise
Less than high school	Respondent has fewer than 12 years of education
Logged income	Log of respondent's family annual income
Logged Age	Log of respondent's age
Single parent	Respondent is not married or cohabitating and has children under 17
No bank account	1 if respondent's family does not have checking or savings accounts, certificates of deposit, or money market funds, 0 otherwise
Recently moved	1 if moved to current residence in the calendar year of the survey, 0 otherwise
Female	1 if respondent is female, 0 otherwise
Currently employed	1 if respondent is currently employed
Mexican	1 if respondent is Mexican/Mexicano or Mexican American, 0 otherwise
Central American	1 if respondent is Central American, 0 otherwise
Other Latino	1 if respondent is Caribbean, other Latin American, or other Hispanic, 0 otherwise



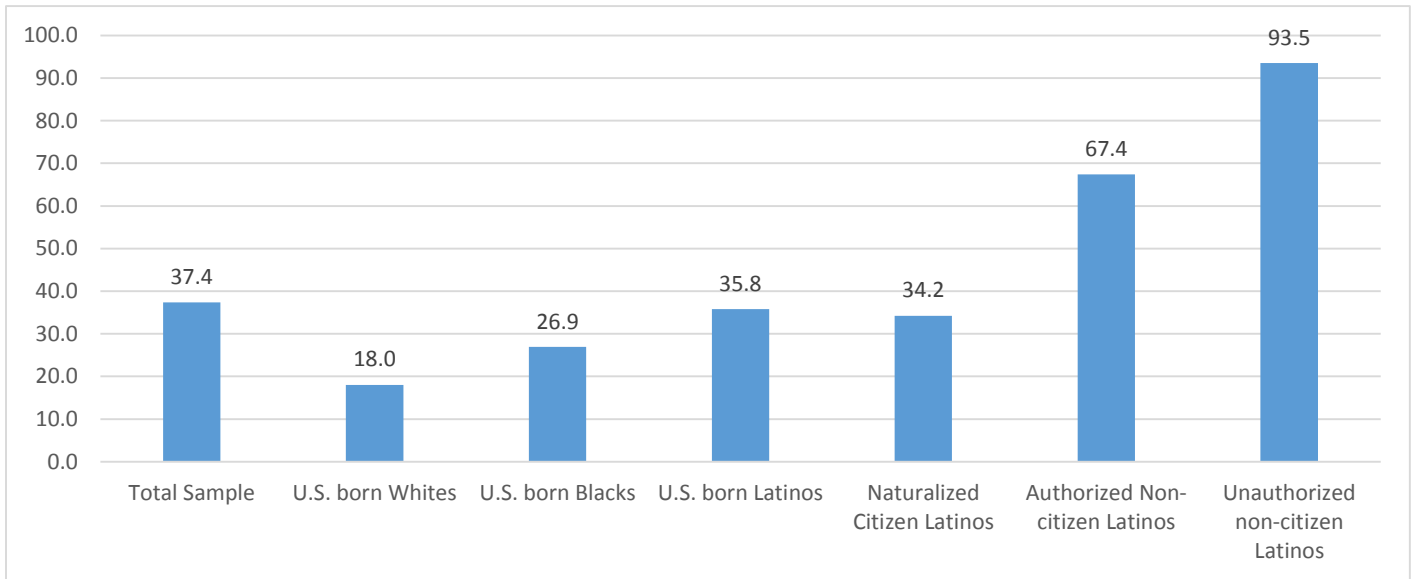
LQ high recent immigrant context	1 if respondent lives in a census tract population with a higher percent of immigrants arriving since 1995 than the Los Angeles County average.
LQ low income context	1 if respondent lives in census tract with median household income in 1999 below the Los Angeles County average
LQ median housing price	1 if respondent lives in census tract with median home price in year before survey below the Los Angeles County average
<i>Immigrant-only analyses</i>	
Years in the United States	Number of years respondent has lived in the U.S.
Spanish survey	1 if respondent used the Spanish version of the survey, 1 used English version
Son/daughter in Latin America	1 if respondent has at least one son or daughter of any age living in Latin America, 0 otherwise
Mother in Latin America	1 if respondent's mother lives in Latin America, 0 otherwise

Figure 1. Weighted Distribution of Number of Precarious Housing Conditions, Analytic Sample



Source: Los Angeles Family and Neighborhood Survey, Wave 1.

Figure 2. Weighted Distribution of Two or more Precarious Housing Conditions, Analytic Sample



Source: Los Angeles Family and Neighborhood Survey, Wave 1.

Table 2. Weighted Descriptives of Analytic Sample

	Total Sample	U.S. born Whites	U.S. born Blacks	U.S. born Latinos	Latino Immigrants		
					Naturalized Citizens	Authorized Non-Citizens	Unauthorized Non-Citizens
<b>Dependent Variable</b>							
Mean number of Precarious Housing Conditions	1.15 [0.08]	0.65 [0.09]	1.07 [0.10]	1.13 [0.10]	1.16 [0.10]	1.75 [0.08]	2.54 [0.06]
Percent with 0 conditions	36.4	56.2	30.6	30.4	28.7	16.0	0.0
Percent with 1 conditions	26.3	25.9	42.5	33.8	37.1	16.6	6.5
Percent with 2 conditions	23.1	14.9	16.4	28.3	24.0	44.3	33.5
Percent with 3 conditions	14.3	3.1	10.5	7.5	10.2	23.1	60.0
Type of Condition							
Percent renting	48.9	31.0	53.7	45.5	42.5	71.9	94.6
Percent crowded	31.1	10.4	24.1	35.6	35.7	54.8	85.0
Percent with housing affordability problems	35.1	23.4	29.0	31.7	37.6	47.9	73.9
N	1356	350	164	173	152	271	246

Source: Los Angeles Family and Neighborhood Survey, Wave 1.  
Numbers in brackets are standard errors.

Table 3. Weighted Descriptives of Analytic Sample

	Total Sample	U.S. born Whites	U.S. born Blacks	U.S. born Latinos	Latino Immigrants		
					Naturalized Citizens	Authorized Non-Citizens	Unauthorized Non-Citizens
<b>Independent Variables</b>							
Nativity/legal status/citizenship (%)	100.0	25.8	12.1	12.8	11.2	20.0	18.1
Less than High school (%)	26.9	7.6	8.0	19.9	44.3	73.1	66.2
Median income (\$)	33,000	51,000	28,000	31,600	25,000	22,000	15,340
Median age	41	49	40	34	42	37	30
Single parent (%)	12.4	5.7	25.4	17.5	10.9	15.2	17.1
No bank account (%)	32.8	14.0	39.0	24.7	33.6	55.0	80.7
Recently moved	26.5	20.0	27.9	25.6	21.4	27.8	52.2
Not immediate family (%)	6.0	3.0	2.9	7.2	2.2	9.2	18.4
Female	53.4	53.7	56.1	65.6	52.4	49.4	43.1
Currently employed	67.5	61.5	66.8	77.8	71.9	70.8	75.3
Latino origin/ancestry <sup>a</sup>							
Mexican (%)	74.3	----	----	82.9	72.0	65.0	77.9
Central American (%)	16.7	----	----	1.0	15.0	29.6	18.4
Other Latino (%)	8.5	----	----	14.7	12.4	5.3	3.5
Unknown	0.7	----	----	1.9	0.1	0.0	0.3
Live in high recent immigrant neighborhood context (%)	38.4	16.1	35.2	32.8	62.0	69.9	77.1
Live in low median income neighborhood context (%)	57.4	33.0	78.9	58.7	71.8	83.0	89.3
Live in low median home price neighborhood context (%)	67.4	46.8	72.9	81.0	88.0	90.2	89.4
Mean Years in the U.S.	----	----	----	----	27.5	17.6	9.2
Spanish survey (%)	---	---	---	---	63.7	83.4	97.8

Son/Daughter in Latin America (%)	---	---	---	---	11.9	16.7	18.3
Mother in Latin America (%)	----	----	----	----	17.8	35.6	40.0
Total N	1356	350	164	173	152	271	246

Source: Los Angeles Family and Neighborhood Survey, Wave 1.

Due to rounding, sums may not add up and percents may not equal 100.0. Numbers in brackets are standard errors.

<sup>a</sup>Distributions for the total sample refer only to those identifying as Latino.

Table 4. Odds Ratios from Logistic Regression Analyses of Two or More Precarious Housing Conditions on Independent Variables, Total Sample.

	US born White (reference)		Naturalized Citizen Latino (reference)		Unauthorized Non- Citizen Latino (reference)	
	1 Baseline	2 Full	3 Baseline	4 Full	5 Baseline	6 Full
U.S. Born White	----	----	0.4198** (0.129)	0.9130 (0.383)	0.0152*** (0.008)	0.1310*** (0.073)
U.S. Born Black	1.6889 (0.614)	0.7830 (0.392)	0.7090 (0.241)	0.7149 (0.356)	0.0257*** (0.014)	0.103*** (0.056)
U.S. Born Latino	2.5548*** (0.757)	1.4579 (0.533)	1.0725 (0.275)	1.3311 (0.445)	0.0388*** (0.020)	0.1909*** (0.086)
Naturalized Citizen	2.3820*** (0.732)	1.0953 (0.459)	----	----	0.0362*** (0.019)	0.1435*** (0.075)
Authorized Non-citizen	9.5065*** (2.664)	2.1095* (0.459)	3.991*** (1.039)	1.9260 <sup>@</sup> (0.392)	0.1445*** (0.071)	0.2763** (0.123)
Unauthorized Non-citizen	65.7942*** (35.043)	7.6350*** (4.258)	27.6209*** (14.500)	6.971*** (3.633)	----	----
Less than High school		1.9217* (0.549)		1.9217* (0.549)		1.9217* (0.549)
Logged income		0.2682*** (0.065)		0.2682*** (0.065)		0.2682*** (0.065)
Logged age		0.1288*** (0.066)		0.1288*** (0.066)		0.1288*** (0.066)
Single parent		1.9557* (0.528)		1.9557* (0.528)		1.9557* (0.528)
No bank account		1.9844* (0.519)		1.9844* (0.519)		1.9844* (0.519)
Recently moved		1.4137 (0.374)		1.4137 (0.374)		1.4137 (0.374)
Not immediate family		0.5841 (0.231)		0.5841 (0.231)		0.5841 (0.231)
Female		0.7642 (0.163)		0.7642 (0.163)		0.7642 (0.163)
Currently employed		0.8739 (0.261)		0.8739 (0.261)		0.8739 (0.261)
Latino origin/ancestry						
Mexican (ref)		----		----		----
Central American		1.3218 (0.4390)		1.3218 (0.4390)		1.3218 (0.4390)
Other Latino		0.7963 (0.466)		0.7963 (0.466)		0.7963 (0.466)
Unknown		0.0229** (0.0261)		0.0229** (0.0261)		0.0229** (0.0261)
High recent immigrant neighborhood context		2.2017* (0.721)		2.2017* (0.721)		2.2017* (0.721)

Low income neighborhood context		0.9862 (0.418)		0.9862 (0.418)		0.9862 (0.418)
Low median home price neighborhood context		0.4100* (0.156)		0.4100* (0.156)		0.4100* (0.156)

Source: Los Angeles Family and Neighborhood Survey, Wave 1.

Notes: Standard Errors in parentheses. @ p<.10 \* p<.05, \*\*p < .01, \*\*\*p<.001



Table 5. Odds Ratios from Logistic Regression Analyses of Two or more Precarious Housing Conditions on Independent Variables, Latino Immigrants

	Naturalized Citizen (reference)			Unauthorized Non-Citizen (reference)		
	1 Baseline	2 Control	3 Immigration	4 Baseline	5 Control	6 Immigration
Naturalized Citizen	----	----	----	0.0362*** (0.019)	0.1273*** (0.057)	0.2562** (0.127)
Authorized Non-citizen	3.9909*** (1.041)	2.3677* (0.828)	1.6229 (0.596)	0.1445*** (0.071)	0.3014** (0.113)	0.4158** (0.137)
Unauthorized Non-citizen	27.6209*** (14.488)	7.8558*** (3.529)	3.9034** (1.941)	----	----	----
Less than High school	----	0.7673 (0.221)	0.7384 (0.210)	----	0.7673 (0.221)	0.7384 (0.210)
Logged income	----	0.2162*** (0.070)	0.1883*** (0.063)	----	0.2162*** (0.070)	0.1883*** (0.063)
Logged age	----	0.0983*** (0.052)	0.0910*** (0.062)	----	0.0983*** (0.052)	0.0910*** (0.062)
Single parent	----	1.9371 <sup>@</sup> (0.754)	2.1491 <sup>@</sup> (0.968)	----	1.9371 <sup>@</sup> (0.754)	2.1491 <sup>@</sup> (0.968)
No bank account	----	1.3470 (0.405)	1.2281 (0.476)	----	1.3470 (0.405)	1.2281 (0.476)
Recently moved	----	0.7698 (0.238)	0.7815 (0.256)	----	0.7698 (0.238)	0.7815 (0.256)
Not immediate family	----	0.7151 (0.508)	0.5175 (0.411)	----	0.7151 (0.508)	0.5175 (0.411)
Female	----	0.4920* (0.1617)	0.4894 <sup>@</sup> (0.1848)	----	0.4920* (0.1617)	0.4894 <sup>@</sup> (0.1848)
Currently employed	----	0.4522* (0.175)	0.4135* (0.180)	----	0.4522* (0.175)	0.4135* (0.180)
Latino origin/ancestry						
Mexican (ref)	----	----	----	----	----	----
Central American	----	1.2831 (0.449)	0.8378 (0.310)	----	1.2831 (0.449)	0.8378 (0.310)
Other Latino	----	0.8987 (0.578)	0.9034 (0.603)	----	0.8987 (0.578)	0.9034 (0.603)
Unknown origin/ancestry	----	0.1391* (0.057)	0.1137* (0.047)	----	0.1391* (0.057)	0.1137* (0.047)

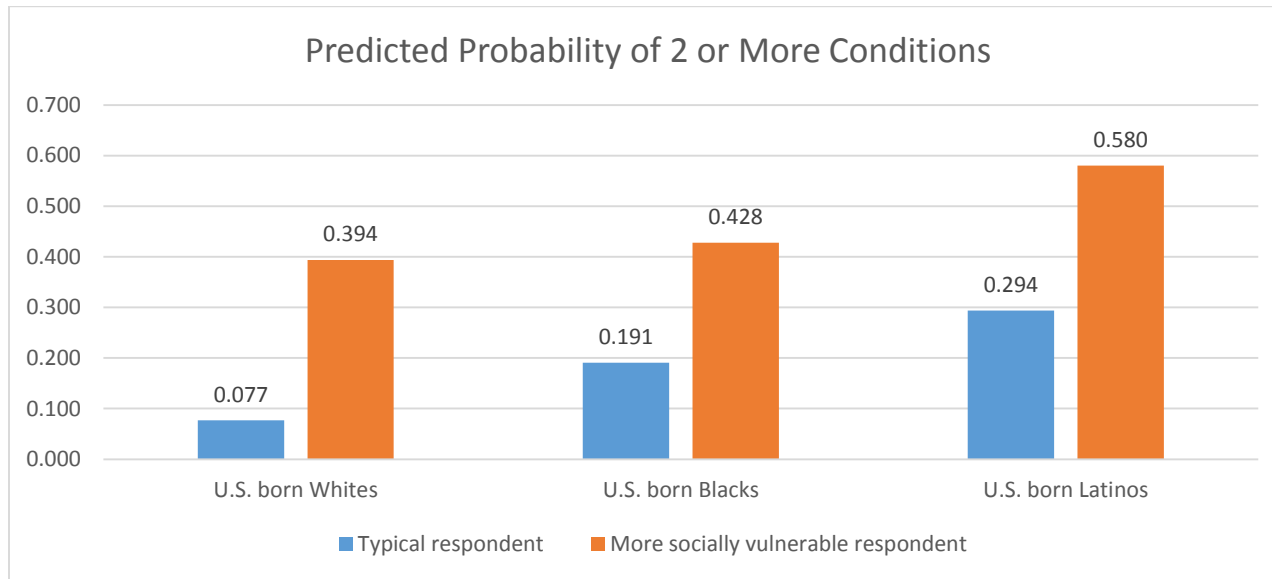
		(0.1330)	(0.103)		(0.1330)	(0.103)
High recent immigrant neighborhood context	----	1.5461 (0.668)	1.6428 (0.793)	----	1.5461 (0.668)	1.6428 (0.793)
Low income neighborhood context	----	1.6682 (1.025)	1.5353 (0.993)	----	1.6682 (1.025)	1.5353 (0.993)
Low median home price neighborhood context		0.8980 (0.2787)	0.7113 (0.271)		0.8980 (0.2787)	0.7113 (0.271)
Years in the U.S.	----	----	0.9753 (0.019)	----	----	0.9753 (0.019)
Spanish survey	----	----	1.7569 (0.744)	----	----	1.7569 (0.744)
Son/Daughter in Latin America	----	----	2.0774 (1.075)	----	----	2.0774 (1.075)
Mother in Latin America	----	----	3.8947*** (0.422)	----	----	3.8947*** (0.422)

Source: Los Angeles Family and Neighborhood Survey, Wave 1.

Notes: Standard Errors in parentheses.

@ p<.10 \* p<.05, \*\*p < .01, \*\*\*p<.001

Figure 2. Predicted Probabilities of Precarious Housing Conditions for Hypothetical Ideal Types



Note: Author's calculations of predicted probabilities, L.A.FANS Wave 1.