



# Exploring Homeowners' Openness to Building Accessory Dwelling Units in the Sacramento Metropolitan Area

Jamey M. B. Volker Susan Handy

## ABSTRACT

**Problem, research strategy, and findings:** Accessory dwelling units (ADUs) are once again a hot topic, as communities across the United States face housing shortages and rising housing costs. For planners and policymakers attempting to facilitate ADU development, it is important to understand the homeowners who do not yet have one. Yet there is remarkably limited research on whether those homeowners are open to building an ADU, what motivations and obstacles they perceive regarding adding one, and why some homeowners do not want to build one at all. We surveyed 502 single-family homeowners in the Sacramento (CA) metropolitan area to investigate those three questions. Our findings suggest that up to 47% of single-family detached homeowners in the city of Sacramento could be open to building an ADU. Homeowners' top-ranked motivation for adding one was housing themselves, family, or friends in the future. Cost-related concerns ranked as the biggest perceived obstacles. Homeowners who did not want an ADU cited a mixture of logistical challenges and potentially more immutable personal preferences.

**Takeaway for practice:** Our findings suggest five lessons for planners. First, permissive regulation is an essential, but not sufficient, step toward addressing homeowners' perceptions of regulatory obstacles. Second, local government regulations are not the only source of ADU restrictions. Third, even where ADUs are technically allowed, it can still be an arduous process to get one permitted. Fourth, cost remains a big obstacle to building ADUs. Fifth, homeowners—especially low-income households—need better financing options.

**Keywords:** accessory dwelling units, housing, single-family zoning

Accessory dwelling units (ADUs) have been an integral part of the urban fabric of cities across the United States for more than 100 years. They largely dropped off the public policy radar around World War II as cities suburbanized and used their zoning powers to protect single-family neighborhoods, including by banning ADUs (Antoninetti, 2008; Liebig et al., 2006). But they have once again become a hot topic as planners, policymakers, and advocates seek solutions to housing shortages and rising housing costs (Casey, 2020; Sanchez-Moyano & Galante, 2016; Solomon, 2021). In designing policies to facilitate ADU development, it is crucial to understand the homeowners who do not yet have one, including how open they are to building an ADU, what motivations and obstacles they perceive regarding adding one,

and why some homeowners do not want to build one at all. Although there is a growing body of research on ADU owners and renters, very few studies have looked at homeowners without ADUs.

In this study, we used a survey of 502 single-family detached homeowners in the Sacramento (CA) metropolitan area, including a large subsample in the city of Sacramento itself ( $n = 396$ ), to explore a) whether homeowners without an ADU were open to building one, b) what motivations and obstacles homeowners who were open to building an ADU perceived, and c) the rationales of homeowners who did not want an ADU. In the rest of this article, we provide a primer on ADUs, describe our mixed-methods approach to answering our research questions, present the findings of each analysis, then tie our results together and discuss lessons for planners.

Our findings suggest that between 33% and 47% of single-family detached homeowners in the city of Sacramento could be open to building an ADU. Diving deeper with our full sample from the Sacramento metro area, we found that the top-ranked motivation for building an ADU was housing oneself, family, or friends in the future, which has ramifications for both housing supply and affordability. Cost-related concerns ranked as the biggest obstacles to adding an ADU, followed by permitting and regulatory difficulties. Financing difficulties ranked curiously near the bottom of the list overall, but they were ranked higher by lower income homeowners, Black and Hispanic homeowners, and younger homeowners. Homeowners who did not want an ADU cited a mixture of logistical challenges as well as potentially more immutable personal preferences. The most frequently listed “top” reasons for not wanting an ADU related to lack of space or structural impediments.

### Primer on Accessory Dwelling Units

ADUs are small, self-contained dwellings that share the same lot as a larger primary dwelling, usually a single-family detached house. They are frequently between 600 and 1,000 ft<sup>2</sup> in size, and they have independent sleeping quarters, cooking facilities, and bathrooms (City of Sacramento, 2021b; Peterson, 2018). They are primarily used for housing, but they can also be used for other purposes like home offices and storage (M. J. Brown & Palmeri, 2014; Chapple et al., 2017; Gebhardt et al., 2018).

ADUs can be standalone structures in the yard of the primary dwelling (detached ADUs), attached to the primary dwelling, or converted from a portion of the larger dwelling itself, like an attic or basement (internal ADU). Figure 1 shows a detached ADU in the backyard of a Sacramento home.

ADUs are touted as a relatively quick and inexpensive way to increase housing supply, particularly in areas like California with major housing supply shortages (Casey, 2020; Woetzel et al., 2016). ADUs generally cost less to build than comparably sized apartment units in multifamily buildings and can be permitted and built much more quickly (Chapple et al., 2017; Garcia, 2017). They are also theoretically better at avoiding not-in-my-backyard opposition because they are less esthetically intrusive—especially internal ADUs—and increase density more incrementally (Anacker & Niedt, 2019; Chapman & Howe, 2001).

Because ADUs are generally smaller and cost less to build, the rental housing they provide can also be relatively affordable compared with other rental housing options (A. Brown et al., 2020; Chapple et al., 2017; Wegmann & Chapple, 2012). That does not mean that they will always be truly affordable (rent  $\leq$ 30% of household income, according to the common standard)

for low-income households ( $\leq$ 80% of area median income [AMI]). Ramsey-Musolf (2018) reviewed the general plan housing elements for 57 cities in California and found no indication that any of the 759 ADUs constructed over the previous housing plan cycle were available as low-income housing. However, studies indicate that ADUs rented on the market are commonly at least affordable for moderate-income households. Chapple et al. (2021) surveyed owners of recently permitted ADUs across California and found that the median reported rental price was affordable to the median two-person household in the San Francisco Bay Area and Central Coast region. ADUs rented to family members are often even less expensive, and sometimes even free (M. J. Brown & Palmeri, 2014; Chapple et al., 2017; Crane, 2020; Wegmann et al., 2012).

Within our study region, the Sacramento Area Council of Governments (SACOG; 2020) recently surveyed the rents for ADUs listed online and found that 51% would be affordable to moderate-income households (80%–120% AMI), 41% would be affordable to low-income households (50%–80% AMI), and 7% would be affordable to very-low-income households (30%–50% AMI) in Sacramento, Placer, and El Dorado counties. Those numbers just include ADUs listed on the open market. The analysis concluded that 56% of the region’s ADUs would be affordable to low-income, very-low-income, or extremely low-income ( $<$ 30% AMI) households if just 15% were rented to family or friends at low cost (SACOG, 2020). Based on this analysis, the City of Sacramento projected that 336 ADUs will be constructed between 2021 and 2029 that will be affordable to lower income households (City of Sacramento, 2021a).

### ADU Regulations, Obstacles, and Trends

ADUs have a long history in the United States, dating back to the mid-1800s in Eastern Seaboard cities like Philadelphia (PA) and Washington (DC; Antoninetti, 2008; Peterson, 2018). But ADUs were never regularized when local governments began adopting zoning ordinances in the early 1900s. Instead, by the 1940s ADUs were largely banned across the United States (B. B. Brown & Cropper, 2001; Peterson, 2018). By 2012, only an estimated 330 local governments nationwide allowed ADUs (Pfeiffer, 2015). Many more jurisdictions now allow ADUs (Been et al., 2014; Chapple et al., 2020; Infranca, 2014; Pfeiffer, 2015, 2019). But even where ADUs are nominally allowed, zoning restrictions and permitting requirements like those listed in Table 1 can make it infeasible for most homeowners to build legally permitted ADUs.

Even where those requirements are met, local governments sometimes require design review or other



Figure 1. Detached backyard ADU in Sacramento. Left panel: Separate ADU entrance on parallel street. Right panel: View of the ADU from back of owner's home. Photo credits: Dov Kadin.

**Table 1. Common types of regulatory restrictions on ADU construction.**

Category	Examples	Relevant sources
Space and size restrictions	Maximum floor–area ratios Lot coverage maximums Minimum setbacks Lot size minimums ADU size maximums	Anacker & Niedt (2019); Chapple et al. (2020, 2021); Cho (2016); Durning (2013); Morales (2019); Nick-Kearney (2019); Peterson (2018); Pfeiffer (2019); Ramsey-Musolf (2018); Wegmann et al. (2012)
Occupancy restrictions	Requiring the plot owner to live in the primary dwelling Requiring the ADU occupants to be related to the plot owner	Anacker & Niedt (2019); Chapple et al. (2020); Cho (2016); Durning (2013); Nick-Kearney (2019); Peterson, (2018); Ramsey-Musolf (2018)
Parking requirements	Requiring additional off-street parking spaces for the ADU Requiring replacement of any off-street parking spaces removed to create the ADU	Anacker & Niedt (2019); A. Brown et al. (2020); Chapple et al. (2020, 2021); Cho (2016); Durning (2013); Morales (2019); Peterson, (2018); Pfeiffer (2019); Ramsey-Musolf (2018); Shoup (2011); Wegmann et al. (2012)

discretionary review, which can be time consuming and expensive and provide neighbors a forum for opposition (Been et al., 2014; Cho, 2016). ADU permitting and impact fees can also be prohibitive (Chapple et al., 2017; Garcia, 2017; Pfeiffer, 2019; Raetz et al., 2019).

It can also be difficult for homeowners to obtain financing to build an ADU (Peterson, 2018). Many lenders refuse to finance loans to build ADUs unless they are based on the homeowners' equity in the primary house (Been et al., 2014; J. Brown & Watkins, 2012; Chapple et al., 2017; Wegmann, 2015). In addition, lenders typically do not consider rental income anticipated from an ADU when determining whether the homeowner qualifies for financing to build it (Been et al., 2014; J. Brown & Watkins, 2012), largely due to federal financing guidelines. Fannie Mae, for example, generally

requires that “borrower[s] must qualify for the mortgage without considering any rental income from the ADU” (Fannie Mae, 2021). This is especially problematic for lower income homeowners and those with little equity in their house. That includes many Black and Hispanic homeowners, who respectively had 51% and 63% of the median equity of non-Hispanic White homeowners as of 2016 (Neal et al., 2020).

### **California Liberalizes ADU Regulations**

The largest-scale effort to ease ADU permitting has been in California, beginning with the 1982 Second Unit Law (California Senate Bill 1534, 1981–1982; Government Code Section 65852.2). The Second Unit Law required that local governments either adopt an

**Table 2. Key motivations and obstacles reported in previous studies of ADU owners.**

	Chapple et al. (2021)	Gebhardt et al. (2018) <sup>b</sup>	Chapple et al. (2017)	M. J. Brown & Palmeri (2014)	Chapman & Howe (2001) <sup>c</sup>
Location	California	Portland (OR)	Portland (OR) Seattle (WA) Vancouver (Canada)	Portland (OR)	Seattle (WA)
Sample size	752	236	414	200	45
#1 Motivation <sup>a</sup>	—	Extra income	Extra income	Extra income	Extra income
#2 Motivation <sup>a</sup>	—	Housing family or friends	Housing family or friends	Housing family or friends	Homeownership (making mortgage affordable)
#1 Obstacle <sup>a</sup>	Permitting process	Regulatory or design constraints (combined)	Financing	Cost and financing (combined)	—
#2 Obstacle <sup>a</sup>	Design constraints (followed closely by construction costs)	Permitting process	Costs	Design constraints	—

Notes: a. Where possible, we generalized the categories of top motivations and obstacles across the studies to facilitate comparison, rather than list the categories from the five surveys verbatim. b. The “motivations” reported from the Gebhardt et al. (2018) study are more accurately the respondents’ “original purposes” for their ADUs. c. Chapman and Howe (2001) did not discuss the biggest obstacles encountered by homeowners in building their ADUs, but they did note that homeowners experienced “negligible” neighbor opposition.

ordinance permitting ADUs or grant a special permit for ADUs meeting state-specified standards. But the law allowed local governments so much leeway that they could effectively prohibit ADUs in most instances through the types of restrictions discussed above (Nemirow & Chapple, 2012; Ramsey-Musolf, 2018).

ADU permitting remained stagnant across most of the state until the legislature amended the Second Unit Law in 2016 and 2017 (Garcia, 2017; Ramsey-Musolf, 2018). Among other changes, those amendments a) reduced parking requirements for ADUs, b) reduced utility connection fees and capacity charges, c) provided streamlined permitting for most internal ADUs, and d) authorized local governments to permit “junior” ADUs, which are small internal ADUs (California Assembly Bill 2299, 2015–2016; California Assembly Bill 2406, 2015–2016; California Department of Housing & Community Development, 2018; California Senate Bill 1069, 2015–2016).

In 2019, the state legislature took its biggest step yet toward liberalizing ADU regulations. Table A-1 in Technical Appendix A lists the key changes to the Second Unit Law and related statutory provisions by category of restriction alleviated. For example, the amendments prohibit lot coverage, floor–area ratio, or open space requirements that would prevent construction of an 800 ft<sup>2</sup> ADU. The Second Unit Law also now requires local governments to ministerially permit any ADU meeting the configurations shown in Technical Appendix Table A-2 (Government Code Section 65852.2(e)).

These changes allow ADUs on most single-family lots across the state. But permissive regulations do not translate into increased ADU permitting and construction unless homeowners without an ADU are actually open to (i.e., motivated to at least consider) building one. In addition, even homeowners who are open to building an ADU can face additional obstacles that make it difficult to actually build one. Previous studies of ADU owners are a good starting point for understanding the motivations and obstacles facing homeowners, but there has been limited existing research on homeowners without ADUs.

### ***Motivations and Obstacles Experienced by ADU Owners***

Most of the evidence about the motivations and obstacles experienced by ADU owners comes from a few studies of permitted ADUs in the Pacific Northwest and California. Table 2 summarizes the five survey-based studies we could locate. Overall, the top two most common rationales for adding an ADU were extra income and housing family or friends. Costs and financing were the most listed obstacles, followed closely by regulatory or design-related constraints.

### ***What About Homeowners Who Do Not Have ADUs?***

Very few studies have investigated homeowners without an ADU. We could only locate three survey-based studies that were not restricted to older adults. Rudel



(1984) surveyed 92 single-family homeowners without an ADU in Babylon (NY). The City of Sausalito (CA; 2011a, 2011b) surveyed nearly 600 homeowners who did not own an ADU. And Wegmann and Chapple (2012) surveyed 508 single-family homeowners in the San Francisco Bay Area.

More than 40% of the Babylon homeowners reported that they were “considering” building an ADU. In the Bay Area, 31% of homeowners who did not already own an ADU indicated that they had already attempted to build an ADU, were actively planning to add one, or might consider building one. Only 23% of the Sausalito homeowners had “thought about” adding an ADU, but that number might have been depressed by the fact that about 25% of the respondents did not own a single-family detached home. Rudel (1984) and the City of Sausalito (2011a, 2011b) both found that the most frequently cited motivation for considering an ADU was extra income. The City of Sausalito found that housing family or friends was the second most cited rationale. Wegmann and Chapple (2012) did not investigate homeowner motivation, but they did find that among homeowners who had tried to build an ADU, the two most frequently listed reasons for failing were regulatory or design constraints and cost.

A few studies have also specifically assessed the openness of older adults to adding an ADU. Varady (1988, 1990) surveyed 171 homeowners aged 59 to 85 in Baltimore (MD) and found that 9% of respondents reported interest in creating an internal ADU. The author’s multiple discriminant analyses highlighted need (e.g., for extra income to cover high medical costs) as the major motivation (Varady, 1988, 1990). More recently, the 2018 AARP Home and Community Preferences Survey found that providing housing for family or friends was the most cited motivation for people aged 50-plus who were willing to consider adding an ADU (Spevak, 2019).

Overall, there is some localized evidence of a sizeable demand for ADUs among homeowners who do not yet have one. There is also some evidence that extra income and housing family members or friends are two of the primary motivations for homeowners open to building an ADU. But the studies are limited in number and geographical scope. And none of the studies explored the motivations and obstacles facing homeowners in detail or investigated why some homeowners do not want to build an ADU.

## Exploring Homeowner Openness to Building an ADU

We used a survey of single-family detached homeowners in the Sacramento metropolitan area to explore a)

whether homeowners without an ADU were open to building one, b) what motivations and obstacles homeowners who were open to building an ADU perceived, and c) the rationales of homeowners who did not want an ADU.

### Study Setting

The city of Sacramento and the surrounding metropolitan area are ideal locations to study homeowners’ openness to building ADUs. The city itself—where nearly 80% of our respondents lived—has great physical potential for ADU construction. Most (61%) housing units in the city are single-family detached houses (U.S. Census Bureau, 2019b). In addition, Sacramento had some of the least restrictive ADU permitting regulations in the state at the time of our survey (Chapple et al., 2020; Pfeiffer, 2019). Table A-3 in Technical Appendix A outlines some key features of Sacramento’s ADU regulations then in effect. Sacramento has since loosened its ADU regulations even further to comply with the state’s 2019 amendments to the Second Unit Law (City of Sacramento, 2021b; Matt Hertel, Principal Planner, City of Sacramento, personal communication, 2020).

Sacramento also has a potentially large latent demand for ADUs, with homeowners wanting extra income to offset mortgage payments for increasingly expensive homes and renters seeking alternate options in an increasingly tight rental market. Sacramento added more people between 2018 and 2019 than all but one of California’s 482 cities, and it grew at a faster rate (1.49%) than any of the other top 10 most populous cities in the state (California Department of Finance, 2019). Yet its housing stock increased by only 0.2% between 2017 and 2019 (U.S. Census Bureau, 2017, 2019a). That helped reduce the city’s rental vacancy to 2.1% in 2019 (U.S. Census Bureau, 2019a) and increase the typical home value in the city by 17% in 2021 dollars, from \$328,000 in January 2017 to \$383,000 in December 2019 (Zillow, 2021). In addition, a large proportion of the city’s residents are young adults (38.9% between 20 and 44 years old; U.S. Census Bureau, 2019b), the same age range as most ADU renters (Chapman & Howe, 2001; Gebhardt et al., 2018; Rudel, 1984).

These conditions would seemingly foster both ADU construction and rental demand. However, the number of ADU permit applications in Sacramento has remained relatively low compared with the jump in applications seen in other large cities following California’s relaxation of ADU restrictions starting in 2016 (Bertolet & Gabobe, 2019; Chapple et al., 2020; Garcia, 2017; Los Angeles City Planning, 2020). Sacramento received only 83 ADU permit applications in 2019 (Matt Hertel, Principal Planner, City of Sacramento, personal communication, 2020) and

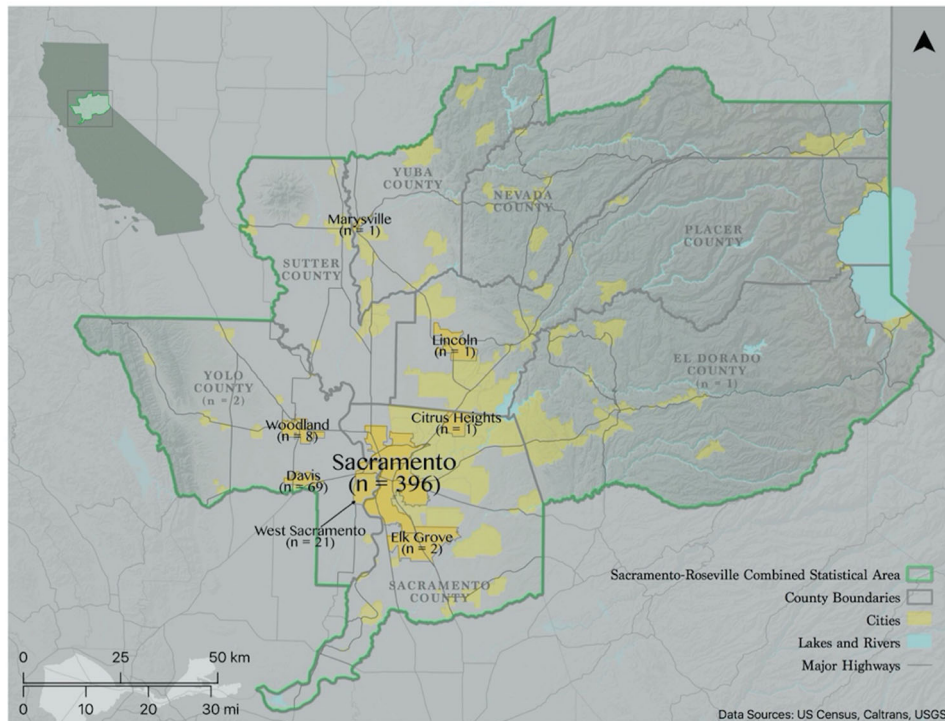


Figure 2. Geographic distribution of survey respondents.

162 in 2020 (City of Sacramento, 2021a). Based on these numbers, the city projected that on average only 75 ADUs will be built each year between 2021 and 2029 (City of Sacramento, 2021a). Sacramento is thus ripe for an investigation into homeowners' openness to building an ADU, including the motivations and obstacles they expect to face and the reasons they might not want one.

### Data Collection, Respondent Snapshot, and Sampling Biases

We based our analysis on an online survey of single-family detached homeowners in the Sacramento metropolitan area. We include the survey instrument in [Technical Appendix B](#), along with information on question selection, pretesting, and institutional review board approval. Budget restrictions prevented us from using simple random sampling with mail or phone recruitment. Instead, we recruited participants via email from three separate databases: a set of double-opt-in panels maintained by Qualtrics and two lists of respondents to previous surveys (the 2018–2019 Campus Travel Survey at the University of California, Davis, and two surveys regarding the JUMP bikeshare program in Sacramento, West Sacramento, and Davis) who indicated an interest in taking a future survey on ADUs. We provide additional details on survey recruitment in [Technical Appendix C](#).

In total, we garnered 663 respondents. We then excised 106 respondents who either did not answer the primary questions of interest or failed to answer at least five other questions. We further culled the remaining 557 complete cases by removing all respondents who did not own a single-family detached home and/or lived outside of the Sacramento metro area. We ended up with a final sample size of 502 single-family detached homeowners living in the Sacramento metro area, including 396 in the city of Sacramento itself. [Figure 2](#) shows the geographic distribution of the respondents.

[Table 3](#) summarizes the housing stock and socio-demographic characteristics of both the full Sacramento metro area sample ( $n = 502$ ) and the city of Sacramento subsample ( $n = 396$ ) and compares them with the entire homeowner populations in the city of Sacramento and the Sacramento–Roseville–Folsom metropolitan area. The samples were both younger and more educated and had a greater percentage of people who lived in the same home for less than 10 years than their respective reference populations. The Sacramento city subsample had a higher proportion of non-Hispanic Whites than the overall city population, whereas the full metro area sample had a lower proportion than its reference area. The sociodemographic differences between the samples and reference populations likely resulted in large part from coverage error, which is inherent in most nonrandom surveys (Dillman, 2007;

**Table 3. Characteristics of sampled homeowners compared with all Sacramento homeowners.**

	City of Sacramento subsample	City of Sacramento	Full Sacramento-area sample	Sacramento metropolitan area <sup>b</sup>
Sample size	396	—	502	—
Housing stock <sup>a</sup>				
No. of owner-occupied housing units	396	93,509 (±4,345)	502	516,370 (±8,299)
No. of owner-occupied single-family detached units	396	83,412 (±3,876)	502	466,280 (±7,792)
Homeowner sociodemographics <sup>a</sup>				
Median age or age bracket, years	46 (45–54)	55–64	48 (45–54)	55–64
Median household income or income bracket	\$75,000–\$99,999	\$87,326 (±\$1,802)	\$100,000–\$124,999	\$96,105 (±\$840)
Share with bachelor's degree or higher	63.1%	45.7% (± 1.0%)	68.5%	44.2% (± 0.4%)
Share non-Hispanic White	60.4%	48.3% (±0.9%)	64.3%	68.2% (±0.3%)
Share with 10 or fewer years in current home <sup>c</sup>	49.5%	37.7%	49.2%	37.2%
Average household size	2.87	2.76 (±0.04)	2.87	2.78 (±0.02)

Notes: a. Housing stock estimates for the City and Sacramento and the Sacramento–Roseville–Folsom metropolitan area obtained from Table S2504 from the American Community Survey's 2019 1-year estimates (U.S. Census Bureau, 2019a). Demographic estimates obtained from Tables S2502, S2503, and B25010 from the American Community Survey's 2019 5-year estimates (U.S. Census Bureau, 2019b). Demographic estimates are for all owner-occupied housing units, most of which are single-family detached units. b. The census data for the Sacramento metro area are from the Sacramento–Roseville–Folsom metropolitan area, which is smaller than the Sacramento–Roseville combined statistical area shown in Figure 2 but more representative of than just the city. c. For the city of Sacramento and the Sacramento–Roseville–Folsom metropolitan area, this equals the share of homeowners who moved into their current home in 2010 or later (9 or fewer years before the 2019 American Community Survey).

Mercer et al., 2018). Coverage was imperfect because our sampling frame did not include all homeowners in the city of Sacramento, let alone the entire metro area. Instead, it was restricted to homeowners who used the internet (digital recruitment bias) and were either members of Qualtrics' opt-in panels or had responded to one of the three previous surveys described above.

The nonrandomness and associated imperfect coverage of our sample made it difficult to estimate representative statistics for the population of homeowners in the study area. The digital recruitment bias, for example, could lead to a higher than actual estimate of openness to building an ADU because homeowners without internet access had less access to resources about ADUs and might correspondingly be less comfortable with ADUs. There was also a risk of nonresponse bias. For example, it is possible that our recruits were more likely to complete the survey if they were already interested in ADUs, which could have biased our estimates of homeowner openness to building an ADU. However, even with nonrandom samples,

adjustments can be made to reduce bias and provide better indications of population-level characteristics (Baker et al., 2013; Mercer et al., 2018). And that is what we did with our estimates of homeowner openness to building an ADU in the city of Sacramento. The bulk of our analysis, however, was exploratory and not intended to provide statistically representative estimates. We thus used our full, unweighted sample to explore homeowners' motivations for and obstacles to building an ADU and their rationales for not wanting one.

### Answering Our Three Questions

The first goal of our study was to gauge how open single-family detached homeowners were to building an ADU. We first asked respondents whether they owned an ADU on the same parcel as their current home. For those who did not, we asked whether they had "ever attempted to build or considered building an ADU on the same parcel as [their] current home." We classified homeowners as open to building an ADU if they would at least consider building one. This was a

broader classification than used in previous studies and included all homeowners who responded either that they a) were “currently in the process of building an ADU,” b) were “currently considering building an ADU” but were “not yet in the permitting or construction process,” c) had “attempted to build an ADU in the past,” d) had “considered building an ADU in the past” but had “never attempted to permit or build one,” or e) “would consider building one in the future.” We categorized respondents as not open to building an ADU if they answered that they “do not want an ADU on the same parcel as [their] home.”

We focused our analysis on homeowners in the city of Sacramento because that subsample had better coverage than the full metro area sample. We used raking (iterative proportional fitting)<sup>1</sup> to weight the subsample using age, household income, race and ethnicity (% non-Hispanic White), education (% with bachelor’s degree or higher), and the share of householders with 10 or fewer years in their current home. We then estimated a modeled 95% confidence interval using the Wald interval for binomial proportions with an adjustment for the increased variance caused by weighting the sample (Franco et al., 2019).<sup>2</sup> The weighted estimate and modeled confidence interval provide a better indication of the actual shares of single-family detached homeowners who already owned an ADU or could be open to building one than our unweighted estimate. However, raking and other weighting techniques are unlikely to remove all bias from nonrandom samples like ours (Mercer et al., 2018; Salganik, 2017). We also cannot say what percentage of homeowners who reported being open to building an ADU would ever actually add one.

The second goal of our study was to better understand what motivates homeowners who are open to building an ADU and what obstacles they perceive to doing so. For this exploratory analysis, we used our unweighted sample from the full Sacramento metro area. To flesh out the motivations facing the 214 homeowners without an ADU who reported being open to building one, we asked them to rank eight potential motivations on a 3-point scale, from *no motivation* to *major motivation*. We also asked the 214 homeowners to rank 14 potential obstacles on a 3-point scale, from *no obstacle* to *major obstacle*. We compiled our lists of potential motivations and obstacles based on the literature and informal discussions with homeowners. We calculated average rankings for each motivation and obstacle. We also used *t* tests and bivariate correlations to explore the relationships between the motivations and obstacles and income, race and ethnicity, and age.

The third goal of our study was to better understand the rationales of homeowners who do not want an ADU. We again used our unweighted

sample from the full Sacramento metro area for this exploratory analysis. We asked the 246 respondent homeowners who were not open to adding an ADU to list (in an open-ended response) the top reasons they did not want one. To analyze the data, the lead author first reviewed the responses multiple times and inductively developed a list of nine categories of reasons for not wanting an ADU (shown later). The lead author then coded each response for the presence of each theme and subsequently reviewed the coding decisions twice. We tallied the number of responses coded for each category and qualitatively reviewed them to explore which rationales could potentially be obviated with ADU-supportive policies and resources.

## Are Homeowners Open to Building ADUs?

Overall, 8% of respondent homeowners from our full Sacramento-area sample ( $n = 502$ ) reported owning an ADU on the same lot as their primary residence, and 43% indicated they were open to building an ADU. Zooming in to the city of Sacramento itself, the results from our weighted subsample ( $n = 396$ ) indicate that 8.1% of homeowners already owned an ADU and 40.5% were open to adding one. Applying a 95% Wald-type confidence interval to the weighted subsample, our results suggest that between 4.4% and 11.8% of single-family detached homeowners in Sacramento might already own an ADU and between 33.8% and 47.2% could be open to building one.

## What Motivates Homeowners to Consider Building an ADU?

Of the 460 respondents who did not already own an ADU, 214 reported being open to building an ADU. Table 4 lists verbatim the eight potential motivations for adding an ADU that we asked those respondents to rank, as well as their average rankings. Housing oneself, a family member, or a friend in the future was the clear top choice (2.46 average ranking on a 3-point scale). Creating an office or other activity space was the second most highly ranked motivation (2.17). Financial motivations had the third and fifth highest rankings (2.14 for increasing property value; 2.02 for gaining additional income from renting the ADU). “Other” motivations, which were mostly not specified, had the lowest ranking (1.20) and the lowest number of responses (155), indicating that the seven specified options captured respondents’ primary motivations well. Looking at sociodemographic correlates, we found little statistical difference in the average rankings by race and ethnicity.



**Table 4. Ranking respondents' motivations for building an ADU.**

Motivation	Average ranking <sup>a</sup>
Housing myself, a family member, or a friend in the future	2.46 (n = 213)
Creating an office, workshop, playhouse, or other useful activity space	2.17 (n = 214)
Increasing my property value	2.14 (n = 214)
Housing myself, a family member, or a friend right away	2.08 (n = 214)
Gaining additional income (from renting the ADU)	2.02 (n = 214)
Creating additional storage space	1.86 (n = 214)
Helping with the housing crisis	1.77 (n = 214)
Other. Please specify:	1.20 (n = 155)

Note: a. 1 = no motivation, 2 = minor motivation, 3 = major motivation.

**Table 5. Ranking respondents' perceived obstacles to building an ADU.**

Obstacle	Average ranking <sup>a</sup>
Construction costs	2.69 (n = 200)
Development fees and permitting costs	2.63 (n = 191)
Difficulty working with local government staff (including permitting delays)	2.37 (n = 166)
Other zoning restrictions on ADU construction and siting	2.33 (n = 147)
ADU setback restrictions	2.30 (n = 147)
Confusing ADU regulations	2.28 (n = 159)
Difficulty working with contractors (including construction delays)	2.26 (n = 191)
ADU parking requirements	2.13 (n = 154)
ADU height restrictions	2.12 (n = 151)
Difficulty obtaining financing	2.10 (n = 197)
Financial risk	2.02 (n = 193)
Opposition from neighbors	2.00 (n = 172)
Limitations on using ADUs for short-term rentals (e.g., via Airbnb, VRBO, or HomeAway)	1.80 (n = 154)
Other. Please specify:	1.41 (n = 98)

Note: a. 1 = no obstacle, 2 = minor obstacle, 3 = major obstacle.

The bivariate correlations between age and income and the motivation rankings were also all quite low ( $\leq |0.18|$ ).

### What Obstacles Do Homeowners Perceive to Building an ADU?

Table 5 lists verbatim the 14 potential obstacles to building an ADU that we presented to the 214 respondents who reported being open to constructing one, as well as the average ranking for each. Construction costs and development fees were the only two obstacles rated as a "major obstacle" (3 on the rating scale) by most respondents. Difficulty working with government staff and issues with regulations were also highly ranked. Financing difficulties and financial risk ranked near the bottom of the list, followed by opposition from neighbors and short-term rental limitations. The "other" category had the lowest average ranking (1.41) as well

as the lowest number of responses ( $n = 98$ ), indicating that the specified options captured respondents' primary obstacles well. Only 16 respondents specified the "other" obstacle; the most cited was insufficient lot space.

Diving deeper, we found that the low average rankings for financing difficulties and risk masked three sociodemographic correlates. First, looking at race and ethnicity, Blacks ranked financing as a greater obstacle than non-Hispanic Whites ( $p < .05$ ) and both financing ( $p < .1$ ) and financial risk ( $p < .05$ ) were bigger obstacles for Hispanics. Second, although we found at least a small negative correlation between household income and homeowners' rankings of all 14 obstacles, income had by far the strongest correlation with difficulty obtaining financing ( $r = -0.37$ ). Third, age likewise had its strongest correlation with difficulty obtaining financing ( $r = -0.32$ ), followed closely by financial risk ( $r = -0.30$ ) and ADU height restrictions ( $r = -0.30$ ).

### Why Do Some Homeowners Not Want to Build an ADU?

Of the 460 respondents who did not already own an ADU, 246 reported not wanting an ADU on the same parcel as their home, and 244 of them told us why. The 244 respondents who answered the open-ended question provided a total of 320 rationales, which we sorted into nine categories. Table 6 tallies the responses for each category and provides examples. The most frequently listed “top” reasons for not wanting an ADU were not enough space or structural impediments (49.6% of respondents), no need (31.0%), and privacy concerns (14.3%).

Looking at the most frequently cited rationale—lack of space or structural impediments—most responses indicated that it would be physically challenging to fit an ADU on the respondent’s property, like, “Our backyard is already very small and there is no place to add an additional dwelling.” A smaller group of space-related responses reflected personal preferences more so than logistical obstacles, such as, “I like keeping both cars in the garage so would not consider converting it to a studio apt” and “Small lot; prefer garden and landscaping and open space.” These responses indicate that the homeowner enjoyed having their space and did not want to sacrifice it for an ADU even if it were feasible to do.

**Table 6. Respondents’ top reasons for not wanting an ADU.**

Category of reasons	Examples	% Listing reason in category <sup>a</sup>	No. listing reason in category
Not enough space or structural impediments	“My lot is an odd shape and there isn’t room for an ADU” “My home is not structured to have an ADU” “No room to fit an ADU in without destroying the minimal space currently occupied by attractive and mature landscaping”	49.6	121
Simply do not want or do not need	“Don’t want” “I just want my property as it is” “Home is perfect the way it is”	31.0	78
Privacy concerns	“Strangers in the back yard, no thank you” “My home & property is MINE & MINE ALONE” “I enjoy my privacy and I have a young child that I wouldn’t want exposed to people I don’t know and/or trust well enough” “I like to be naked in my backyard”	14.3	35
Cost	“The cost and time to build” “Not within my budget” “Would increase my property taxes”	6.2	15
Difficulty maintaining the ADU or managing tenants	“Do not want to deal with the complications it brings” “Don’t want to worry about being a landlord and the responsibilities that go along with that” “Would be a bother to manage”	6.2	15
Other personal or neighborhood quality preferences	“Interference with peace and quiet” “Ghetto looking” “Congestion, parking issues, security” “I don’t want another car on my street since I don’t have another place to park a car”	7.0	17
Zoning incompatibility or HOA restrictions	“It is against the CC&Rs” “My house falls within a homeowners association, where it is not allowed to have an ADU” “Not allowed in my neighborhood”	5.3	13
Hassles with permitting, design, construction, or related	“It’s too complicated” “Unfamiliar with the laws” “Too much hassle”	4.5	11
Other reasons	“I just bought my house” “I think I would just move to another place adding an ADU” “Decrease the value of my home” “Planning to sell within 3 years” “I plan to downsize by selling my house and even build an ADU somewhere else out of this neighborhood”	6.2	15
Total	—	—	320

Note: a. Does not sum to 100% because respondents could list more than one reason. A total of 68 respondents listed rationales in more than one category.

Like the preference-driven group of space-related rationales, respondents' second, third, and fifth most frequently listed rationales for not wanting an ADU—simply not wanting or needing one (31.0%), privacy concerns (14.3%), and other personal or neighborhood quality preferences (7.0%)—also tended to reflect more intransigent personal preferences rather than logistical challenges. By contrast, the rationales related to cost (6.2%), zoning incompatibility or homeowners' association (HOA) restrictions (5.3%), and hassles with permitting, design, or construction (4.5%) mostly stated logistical obstacles that could be at least partially obviated by governmental and private sector actions.

### Tying It All Together

In this study, we used a survey of 502 single-family detached homeowners in the Sacramento metro area to explore how open homeowners are to building an ADU, what motivations and obstacles they perceived regarding adding one, and why some homeowners did not want to build one at all. The weighted results from our Sacramento city subsample ( $n = 396$ ) suggest that between 33.8% and 47.2% of single-family detached homeowners could be open to building one, totaling 28,000 to 39,000 homeowners. For context, the city estimated in its most recent general plan housing element that there was capacity for just 17,768 housing units on vacant sites that did not already have projects in the pipeline (City of Sacramento, 2021a). Even if our estimates were biased upwards due to digital recruitment and survey nonresponse, our results still suggest that there is substantial homeowner openness to adding an ADU, bolstering the limited existing evidence on this from other cities (City of Sausalito, 2011a, 2011b; Rudel, 1984; Wegmann & Chapple, 2012). Anecdotal reports also indicate that homeowner demand for ADUs has increased since the COVID-19 pandemic began, though perhaps more for use as home offices than housing (Anas, 2020; Jameson et al., 2021).

Our results indicate that creating an office or other non-housing activity space was already a popular (second-ranked) motivation for building an ADU in the Sacramento area even before the pandemic. But the top-ranked motivation was housing—specifically, housing oneself, a friend, or a family member in the future. That has ramifications for both housing supply and affordability, since ADUs rented longterm to family or friends are frequently priced well below market rates (M. J. Brown & Palmeri, 2014; Chapple et al., 2017; Crane, 2020; Wegmann et al., 2012). However, even ADUs built by homeowners who are motivated by rental income (fifth-ranked motivation) could be relatively affordable, as indicated by SACOG's (2020) recent analysis of online listings for ADUs in the Sacramento region.

Of course, just because a homeowner is open to building an ADU does not mean they will necessarily construct one. We found that construction and permitting costs were the highest ranked obstacles for homeowners open to building an ADU, followed by permitting and regulatory difficulties. Those are similar to the biggest obstacles that ADU owners reported facing in previous surveys (Table 2), with one exception: ADU owners ranked financing along with cost as a top obstacle, whereas the respondents in our study ranked financing difficulties and risk near the bottom of the list. One potential explanation is that financing is more of an abstract obstacle until one decides to actually build an ADU. However, while financing might not be perceived as a major obstacle by most homeowners without ADUs, our survey findings indicate that financing obstacles could be particularly onerous for lower income homeowners, Black and Hispanic homeowners, and younger homeowners. This is not surprising because all three groups have less home equity than the median homeowner (Goodman et al., 2017; Neal et al., 2020), which means less access to conventional financing (Peterson, 2018).

Cost and financing did not factor as prominently for those homeowners in our survey who reported not wanting an ADU. Instead, the most frequently listed "top" reasons for not wanting an ADU related to a lack of space or structural impediments. Most space-related responses expressed logistical challenges, as did most responses related to cost, zoning incompatibility or HOA restrictions, and hassles with permitting, design, or construction. Many of these challenges could potentially be alleviated by regulatory changes or creative architecture (Peterson, 2018), like allowing junior ADUs and reducing spatial restrictions (Technical Appendix Table A-1).

On the other hand, a smaller group of space-related responses reflected potentially more immutable personal preferences, as did most responses in the second most common category of rationales—simply not wanting or needing one—and those related to privacy concerns or other personal or neighborhood quality preferences. It is unlikely that relaxing ADU restrictions or even reducing ADU cost or financing obstacles would directly change these types of preferences. However, changes in a homeowner's circumstances—like needing additional income, having a family member fall ill, or needing a home office to work remotely—could potentially cause them to revisit ADUs (Varady, 1990).

### Lessons for Planners

Our study expands the limited existing literature on homeowners who do not already own an ADU. We focused on the Sacramento metro area, an urbanized

region with relatively high housing costs, low rental vacancy rates, a housing supply dominated by single-family detached houses, and permissive ADU regulations. Homeowners in other geographies might respond differently to the prospect of adding an ADU. Homeowners in areas with lower housing costs or higher rental vacancy rates might be less motivated to build an ADU as a rental unit. Homeowners in rural areas with larger lot sizes might be less constrained by space-related impediments. And most homeowners in the United States, particularly those outside of California, likely face stricter zoning requirements and greater permitting hassles. However, our results suggest some general lessons for planners and policymakers about the type of policies and actions that could address homeowner concerns about building a permitted ADU.

First, permissive regulation is an essential, but not sufficient, step toward addressing homeowners' perceptions of regulatory obstacles and space-related reasons for not wanting an ADU. Almost all of our respondents lived in cities (Sacramento, Davis, or Citrus Heights) with relatively permissive ADU regulations (Chapple et al., 2020), yet most respondents who were open to building an ADU still ranked most regulatory-related issues as at least a minor obstacle. This suggests that educating homeowners about local ADU regulations could lessen the perception of regulations as a barrier. Many local governments in California have already taken heed (Chapple et al., 2020). San Jose, for example, has a dedicated "ADU Ally" to field ADU-related questions, provides an "ADU Universal Checklist" to help homeowners navigate the permitting process, maintains a website with ADU resources, and hosts "ADU Tuesdays" events providing expedited plan review and permitting (City of San Jose, 2021). In Sacramento, the city is developing an online "ADU Toolkit" and an ADU outreach plan (City of Sacramento, 2021a). However, insufficient funding for educational programs remains an issue for many jurisdictions (Chapple et al., 2020).

Second, local government regulations are not the only source of ADU restrictions. A number of respondents in our study listed HOA restrictions (or covenants, conditions, and restrictions) as a top reason they did not want to build an ADU. This is a potential problem for any jurisdiction with common-interest developments, and it can be a particularly tough obstacle to address because pre-empting HOA restrictions might require state legislation, like it did in California (Civil Code Section 4751).

Third, even where ADUs are technically allowed, it can still be an arduous process to get one permitted. Creating a ministerial (by-right) review process reduces the permitting burden, and it is required by state law in California (Government Code Section 65852.2). But that

by itself does not ensure a quick permitting decision or change the public's perception of bureaucratic red tape. Despite state law requiring ministerial permitting, respondents in our study still ranked permitting difficulties as the third greatest obstacle to building an ADU. This highlights the importance of both better educating homeowners about the permitting process and speeding the process up. Local governments can speed up the process by setting time limits for issuing a permitting decision, like the 60-day time limit now required under California state law (Government Code Section 65852.2). An increasing number of jurisdictions also offer free permit-ready ADU designs, such as San Diego and Humboldt counties in California (Chapple et al., 2020; City News Service, 2019).

Fourth, regardless of permitting and regulations, cost remains a big obstacle to building ADUs. Local governments—or state legislatures—can help address this by reducing permitting fees, utility hookup costs, and parking requirements, all of which California has done through its amendments to the Second Unit Law. In a similar vein, Portland (OR) waived its system development charge for new ADUs in 2010. That reduced development fees by \$8,000 to \$12,000, amounting to about 5% to 15% of an ADU project cost (Peterson, 2018). That coincided with a surge in ADU permits (Gebhardt et al., 2018), with about three times as many ADU permits issued in 2010 than the year before (Chapple et al., 2017). Local governments can also reduce pre-development "soft" costs by providing free, permit-ready ADU floor plans (Chapple et al., 2020; City News Service, 2019) or direct financial assistance. San Jose, for example, provides forgivable loans up to \$20,000 to cover homeowners' soft costs (Hase, 2019). Those initial soft costs are often only a small fraction of the total ADU development costs, but they can be a critical roadblock for homeowners who are unable to qualify for financing based on their equity. Those homeowners might still qualify for a renovation-type loan but would generally need to have permitted designs in hand first (Peterson, 2018). So, for households without sufficient savings to pay for ADU design and permitting, government assistance with those initial costs could have an outsized impact on making ADU development financially feasible.

Fifth and finally, homeowners need better financing options. In particular, our findings underscore a need for programs to provide financing assistance to lower income homeowners and homeowners with limited equity (Chapple et al., 2020, 2021), like many Black and Hispanic homeowners (Neal et al., 2020). Some local efforts have begun to address these needs by reducing soft costs (as just discussed) and providing ADU-specific financing products and services, like bridge loans (Housing Trust Silicon Valley, 2020), forgivable



construction loans (Chapple et al., 2020; Hase, 2019), and backyard ground-leasing programs. But there remains a need for conventional lending programs that accommodate homeowners with lower incomes and limited equity by accounting for expected ADU rental income during the borrower qualification process and allowing homeowners to borrow against the future value of the ADU (Chapple et al., 2017, 2020).<sup>3</sup> That type of reform will require state- and federal-level action, but local governments can play a strong supporting role through the aforementioned local programs and by partnering with community groups to help inform lower income homeowners and homeowners with limited equity, like many Black and Hispanic homeowners, about ADU options. Facilitating ADU construction for Blacks and Hispanics could help offset their home equity disadvantage and chip away at the historical inequality of access to homeownership they have faced (McCabe, 2016; Rothstein, 2017).

#### ABOUT THE AUTHORS

**JAMEY M. B. VOLKER** ([jvolker@ucdavis.edu](mailto:jvolker@ucdavis.edu)) is a postdoctoral researcher with the Institute of Transportation Studies at the University of California (UC), Davis, and a practicing environmental lawyer. **SUSAN HANDY** ([slhandy@ucdavis.edu](mailto:slhandy@ucdavis.edu)) is a professor in the Department of Environmental Science and Policy at UC Davis and director of the National Center for Sustainable Transportation.

#### ORCID

Jamey M. B. Volker  <http://orcid.org/0000-0002-4559-6165>  
Susan Handy  <http://orcid.org/0000-0002-4141-1290>

#### ACKNOWLEDGMENTS

We thank Cam Denney for his excellent cartographic skills in preparing the map of the study area. We also thank the editor and the three anonymous reviewers for their constructive insights and suggestions; they greatly improved the article.

#### RESEARCH SUPPORT

The National Center for Sustainable Transportation at the University of California, Davis, provided crucial funding for this research through a dissertation fellowship to Dr. Volker.

#### SUPPLEMENTAL MATERIAL

Supplemental data for this article can be found on the publisher's website.

#### NOTES

1. Raking (iterative proportional fitting) is one of the most common methods for weighting survey responses so that the marginal proportions of the survey data come close to matching those of the population for a given set of parameters (Battaglia et al., 2009; Collier, 2018; Mercer et al., 2018). Here, based on the differences shown in Table 3, we chose to weight our Sacramento subsample on age, household income, race and ethnicity (% non-Hispanic White), education (% with bachelor's degree or higher), and the share of householders with 10 or fewer years in their

current home. We then raked the data using the *anesrake* package in R (R Core Team, 2019), which uses the American National Election Study's weighting algorithm (Collier, 2018). That algorithm iteratively adjusts the weights for each parameter until the survey marginals are relatively well aligned with the population marginals across all parameters (Collier, 2018).

2. The Wald interval is one way of estimating a confidence interval for proportions (Franco et al., 2019). It tends to produce an overly narrow confidence interval for extreme proportions, but it performs better for proportions closer to 0.5 like we found in this study. For nonrandom survey samples that have been weighted, the Wald interval can be adjusted to account for the increased variance caused by weighting (Franco et al., 2019), which we did here.

3. There are some programs that include ADU rent as qualifying income for homebuyers looking to purchase a house with an existing ADU (California Housing Finance Agency, 2017; Fannie Mae, 2019).

#### REFERENCES

- Anacker, K. B., & Niedt, C. (2019). Classifying regulatory approaches of jurisdictions for accessory dwelling units: The case of Long Island. *Journal of Planning Education and Research*. Advance online publication. <https://doi.org/10.1177/0739456X19856068>
- Anas, B. (2020). COVID has prompted a surge in demand for one specific type of home addition. Should you try it? *Apartment Therapy*. <https://www.apartmenttherapy.com/adu-covid-36806693>
- Antoninetti, M. (2008). The difficult history of ancillary units: The obstacles and potential opportunities to increase the heterogeneity of neighborhoods and the flexibility of households in the United States. *Journal of Housing for the Elderly*, 22(4), 348–375. <https://doi.org/10.1080/02763890802458320>
- Baker, R., Brick, J. M., Bates, N. A., Battaglia, M., Couper, M. P., Dever, J. A., Gile, K. J., Tourangeau, R. (2013). *Non-probability sampling: Report of the AAPOR task force on non-probability sampling*. <https://www.aapor.org/Education-Resources/Reports/Non-Probability-Sampling.aspx#ESTIMATION%20AND%20WEIGHT%20ADJUSTMENT%20METHODS>
- Battaglia, M. P., Hoaglin, D. C., & Frankel, M. R. (2009). Practical considerations in raking survey data. *Survey Practice*, 2(5), 1–10. <https://doi.org/10.29115/sp-2009-0019>
- Been, V., Gross, B., & Infranca, J. (2014). *Responding to changing households: Regulatory challenges for micro-units and accessory dwelling units*. [https://furnancenter.org/files/NYUFurnanCenter\\_RespondingtoChangingHouseholds\\_2014.pdf](https://furnancenter.org/files/NYUFurnanCenter_RespondingtoChangingHouseholds_2014.pdf)
- Bertolet, D., & Gabobe, N. (2019, April 5). *LA ADU story: How a state law sent granny flats off the charts: California's successful ADU reform offers a lesson for Washington on balancing local and state control of land use*. Sightline Institute. <https://www.sightline.org/2019/04/05/la-adu-story-how-a-state-law-sent-granny-flats-off-the-charts/>
- Brown, A., Mukhija, V., & Shoup, D. (2020). Converting garages into housing. *Journal of Planning Education and Research*, 40(1), 56–68. <https://doi.org/10.1177/0739456X17741965>
- Brown, B. B., & Cropper, V. L. (2001). New urban and standard suburban subdivisions: Evaluating psychological and social goals. *Journal of the American Planning Association*, 67(4), 402–419. <https://doi.org/10.1080/01944360108976249>

- Brown, J., & Watkins, T. (2012). Understanding and appraising properties with accessory dwelling units. *The Appraisal Journal*, 80(4), 297–309.
- Brown, M. J., & Palmeri, J. (2014). *Accessory dwelling units in Portland, Oregon: Evaluation and interpretation of a survey of ADU owners*. State of Oregon Department of Environmental Quality. <https://accessorydwellings.files.wordpress.com/2014/06/adusurveyinterpret.pdf>
- California Assembly Bill 2299. (2015–2016). *Chapter 735 (Cal. Stat. 2016)*. [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160AB2299](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2299)
- California Assembly Bill. (2015–2016). 2406. *Chapter 755 (Cal. Stat. 2016)*. [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160AB2406](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2406)
- California Civil Code. *Division 4, Section 4751*. [https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill\\_id=201920200AB670&showamends=false](https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201920200AB670&showamends=false)
- California Department of Finance. (2019). *E-1 population estimates for cities, counties and the state with annual percent change—January 1, 2018 and 2019*. <https://www.dof.ca.gov/forecasting/demographics/estimates/documents/PriceandPopulation2019.pdf>
- California Department of Housing and Community Development. (2018). *Accessory dwelling unit memorandum*. <https://www.hcd.ca.gov/policy-research/docs/2016-12-12-ADU-TA-Memo.docx.pdf>
- California Government Code. *Title 7, Division 1, section 65852.2*. <https://codes.findlaw.com/ca/government-code/gov-sect-65852-2.html>
- California Housing Finance Agency (2017). *Accessory Dwelling Unit (ADU)*. Program Bulletin #2017-03. <https://www.calhfa.ca.gov/homeownership/bulletins/2017/2017-03.pdf>
- California Senate Bill 1069. (2015–2016). *Chapter 720 (Cal. Stat. 2016)*. [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201520160SB1069](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB1069)
- California Senate Bill 1534. (1981–1982). *Chapter 1440 (Cal. Stat. 1982)*.
- Casey, D. (2020, April 16). *COVID-19 stopped the economy, but our housing shortage remains. CaRLA continues to fight for the answer to both: ADUs*. California Renters Legal Advocacy and Education Fund. <https://carlaef.org/2020/04/16/covid-19-stopped-the-economy-but-our-housing-shortage-remains-carla-continues-to-fight-for-the-answer-to-both-adus/>
- Chapman, N. J., & Howe, D. A. (2001). Accessory apartments: Are they a realistic alternative for ageing in place? *Housing Studies*, 16(5), 637–650. <https://doi.org/10.1080/02673030120080099>
- Chapple, K., Ganetsos, D., & Lopez, E. (2021). *Implementing the backyard revolution: Perspectives of California's ADU owners*. UC Berkeley Center for Community Innovation. <https://www.aducalifornia.org/wp-content/uploads/2021/04/Implementing-the-Backyard-Revolution.pdf>
- Chapple, K., Garcia, D., Valchuis, E., & Tucker, J. (2020). *Reaching California's ADU potential: Progress to date and the need for ADU finance*. UC Berkeley Turner Center for Housing Innovation and Center for Community Innovation. <https://turnercenter.berkeley.edu/reaching-adu-potential-california-finance>
- Chapple, K., Lieberworth, A., Ganetsos, D., Valchuis, E., Kwang, A., & Schten, R. (2020). *ADUs in California: A revolution in progress*. UC Berkeley Center for Community Innovation. <https://www.aducalifornia.org/wp-content/uploads/2020/10/ADU-Progress-in-California-Report-October-Version.pdf>
- Chapple, K., Lieberworth, A., Hernandez, E., Ganetsos, D., Alvarado, A., & Morgan, J. (2020). *The ADU scorecard: Grading ADU ordinances in California*. UC Berkeley Center for Community Innovation. <https://www.aducalifornia.org/wp-content/uploads/2020/02/ADU-Scorecard-InterimReport-200201-1.pdf>
- Chapple, K., Wegmann, J., Mashhood, F., & Coleman, R. (2017). *Jumpstarting the market for accessory dwelling units: Lessons learned from Portland, Seattle and Vancouver*. UC Berkeley Turner Center for Housing Innovation, UC Berkeley Center for Community Innovation, and the Urban Land Institute. [https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/Jumpstarting\\_the\\_Market\\_-\\_ULI.pdf](https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/Jumpstarting_the_Market_-_ULI.pdf)
- Chapple, K., Wegmann, J., Nemirow, A., & Dentel-Post, C. (2012). *Yes in my backyard: Mobilizing the market for secondary units*. UC Berkeley Center for Community Innovation. [https://communityinnovation.berkeley.edu/sites/default/files/yes\\_in\\_my\\_backyard\\_mobilizing\\_the\\_market\\_for\\_secondary\\_units.pdf?width=1200&height=800&iframe=true](https://communityinnovation.berkeley.edu/sites/default/files/yes_in_my_backyard_mobilizing_the_market_for_secondary_units.pdf?width=1200&height=800&iframe=true)
- Cho, J. (2016). Second units in the Silicon Valley. *The Urban Lawyer*, 48(3), 459–488.
- City News Service. (2019, September 25). San Diego County offering free, pre-approved housing plans for granny flats. KPBS. <https://www.kpbs.org/news/quality-of-life/2019/09/25/san-diego-county-free-housing-plans-granny-flats>
- City of Sacramento. (2021a). *2021–2029 housing element*. [https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Long-Range/Housing-Element/00\\_Sac-HE\\_AdoptionDft\\_Aug2021\\_2.pdf?la=en](https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Long-Range/Housing-Element/00_Sac-HE_AdoptionDft_Aug2021_2.pdf?la=en)
- City of Sacramento. (2021b). *Accessory dwelling units (ADUs)*. <https://www.cityofsacramento.org/Community-Development/Resources/Accessory-Dwelling-Units>
- City of San Jose. (2021). *Accessory dwelling units (ADUs)*. <https://www.sanjoseca.gov/business/development-services-permit-center/accessory-dwelling-units-adus>
- City of Sausalito. (2011a). *Accessory dwelling unit survey technical report: Two-family and multi-family zoning districts*. <https://www.sausalito.gov/home/showpublisheddocument/9557/636326254065130000>
- City of Sausalito. (2011b). *Accessory dwelling unit survey technical study: Single-family zoning districts*. <https://www.sausalito.gov/home/showdocument?id=9555>
- Collier, A. (2018). *Survey raking: An illustration*. <https://datawookie.dev/blog/2018/12/survey-raking-an-illustration/>
- Crane, R. E. (2020). *Is granny in that flat? How regulations shape the construction and use of accessory dwelling units in Los Angeles* [Doctoral dissertation, University of California, Los Angeles]. eScholarship University of California. <https://escholarship.org/uc/item/2wh204vz>
- Dillman, D. (2007). *Mail and internet surveys: The tailored design method* (2nd ed.). Wiley & Sons.
- Durning, A. (2013). *ADUs and don'ts: The gauntlet of rules that in-law and cottage units must run*. Sightline Institute.
- Fannie Mae. (2019). *HomeReady accessory unit income and boarder income flexibilities*. <https://singlefamily.fanniemae.com/media/8251/display>
- Fannie Mae. (2021). *Selling guide. Chapter B2-3-04*. <https://selling-guide.fanniemae.com/Selling-Guide/Origination-through-Closing/Subpart-B2-Eligibility/Chapter-B2-3-Property-Eligibility/#Accessory.20Dwelling.20Units>
- Franco, C., Little, R. J. A., Louis, T. A., & Slud, E. V. (2019). Comparative study of confidence intervals for proportions in complex sample surveys. *Journal of Survey Statistics and*

- Methodology*, 7(3), 334–364. <https://doi.org/10.1093/jssam/smy019>
- Garcia, D. (2017). *ADU update: Early lessons and impacts of California's state and local policy changes*. UC Berkeley Turner Center for Housing Innovation. [https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/ADU\\_Update\\_Brief\\_December\\_2017\\_.pdf](https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/ADU_Update_Brief_December_2017_.pdf)
- Gebhardt, M., Gilden, B., & Kidron, Y. (2018). *Accessory dwelling units in Portland, Oregon ISS survey 1st report*. Institute for Sustainable Solutions Publications and Presentations (No. 118). [https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1119&context=iss\\_pub](https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1119&context=iss_pub)
- Goodman, L., Kaul, K., & Zhu, J. (2017). *What the 2016 survey of consumer finances tells us about senior homeowners*. Urban Institute. <https://www.urban.org/sites/default/files/publication/94526/what-the-2016-survey-of-consumer-finances-tells-us-about-senior-homeowners.pdf>
- Hase, G. (2019, September 9). San Jose to consider forgivable loans for backyard cottages. *San Jose Inside*. <https://www.san-joseinside.com/2019/09/09/san-jose-to-consider-forgivable-loans-for-backyard-cottages/>
- Housing Trust Silicon Valley. (2020). *Small homes, big impact*. <https://housingtrustsv.org/programs/homeowner-programs/accessory-dwelling-unit-program/>
- Infranca, J. (2014). Housing changing households: Regulatory challenges for micro-units and accessory dwelling units. *Stanford Law and Policy Review*, 25(1), 53–90.
- Jameson, M. (2021, April 15). ADUs, “granny flats” and work studios are hot properties—and increasingly legal, too. *The Mercury News*. <https://www.mercurynews.com/2021/04/15/adus-in-law-units-and-work-sheds-are-hot-properties-and-increasingly-legal-too/>
- Liebig, P., Koenig, T., & Pynoos, J. (2006). Families' values and attitudes regarding responsibility for the frail elderly. *Journal of Aging & Social Policy*, 18(3–4), 155–172. <https://doi.org/10.1300/J031v18n03>
- Los Angeles City Planning. (2020). *Housing progress reports*. <https://planning.lacity.org/resources/housing-reports>
- McCabe, B. (2016). *No place like home: Wealth, community and the politics of homeownership*. Oxford University Press.
- Mercer, A., Lau, A., & Kennedy, C. (2018, January 26). *For weighting online opt-in samples, what matters most?* Pew Research. <https://www.pewresearch.org/methods/2018/01/26/for-weighting-online-opt-in-samples-what-matters-most/>
- Morales, R. (2019). *Evaluating accessory dwelling unit (ADU) friendliness: The case of the San Gabriel Valley* [Master's thesis, California State Polytechnic University, Pomona]. ScholarWorks. <https://scholarworks.calstate.edu/concern/theses/kk91fn80x?locale=en>
- Neal, M., Choi, J. H., & Walsh, J. (2020). *Before the pandemic, homeowners of color faced structural barriers to the benefits of homeownership*. Urban Institute. <https://www.urban.org/sites/default/files/publication/102781/before-the-pandemic-homeowners-of-color-faced-structural-barriers-to-the-benefits-of-homeownership.pdf>
- Nemirow, A., & Chapple, K. (2012). *Yes, but will they let us build? The feasibility of secondary units in the East Bay*. UC Berkeley Institute of Urban and Regional Development. [https://www.aducalifornia.org/wp-content/uploads/2021/05/yes\\_but\\_will\\_they\\_let\\_us\\_build.pdf](https://www.aducalifornia.org/wp-content/uploads/2021/05/yes_but_will_they_let_us_build.pdf)
- Nick-Kearney, K. (2019). *Accessory dwelling units and micro-housing: How less is more in California housing* [Master's thesis, California State University, Sacramento]. ExLibris Esploro: Sac State Scholars. <https://csu-csus.esploro.exlibrisgroup.com/esploro/outputs/graduate/Accessory-dwelling-units-and-micro-housing-how/99257830919401671>
- Peterson, K. (2018). *Backdoor revolution: The definitive guide to ADU development*. Accessory Dwelling Strategies, LLC.
- Pfeiffer, D. (2015). Retrofitting suburbia through second units: Lessons from the Phoenix region. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 8(3), 279–301. <https://doi.org/10.1080/17549175.2014.908787>
- Pfeiffer, D. (2019). *Regulating ADUs in California: Local approaches & outcomes*. UC Berkeley Turner Center for Housing Innovation. [https://californialanduse.org/download/Pfeiffer\\_Regulating\\_ADUs\\_in\\_California.pdf](https://californialanduse.org/download/Pfeiffer_Regulating_ADUs_in_California.pdf)
- Raetz, H., Garcia, D., & Decker, N. (2019). *Residential impact fees in California: Current practices and policy considerations to improve implementation of fees governed by the Mitigation Fee Act*. UC Berkeley Turner Center for Housing Innovation. [https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/Residential\\_Impact\\_Fees\\_in\\_California\\_August\\_2019.pdf](https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/Residential_Impact_Fees_in_California_August_2019.pdf)
- Ramsey-Musolf, D. (2018). Accessory dwelling units as low-income housing: California's Faustian bargain. *Urban Science*, 2(3), 89. <https://doi.org/10.3390/urbansci2030089>
- R Core Team. (2019). *R: A language and environment for statistical computing* [Computer software]. R Foundation for Statistical Computing. <https://www.R-project.org/>
- Rothstein, R. (2017). *The color of law: A forgotten history of how our government segregated America*. Liveright Publishing Corporation.
- Rudel, T. K. (1984). Household change, accessory apartments, and low income housing in suburbs. *The Professional Geographer*, 36(2), 174–181. <https://doi.org/10.1111/j.0033-0124.1984.00174.x>
- Sacramento Area Council of Governments (SACOG). (2020). *SACOG regional accessory dwelling unit affordability analysis*. [https://www.sacog.org/sites/main/files/file-attachments/adu\\_affordability\\_analysis\\_methodology\\_2020-3-31\\_0.pdf?1588207020](https://www.sacog.org/sites/main/files/file-attachments/adu_affordability_analysis_methodology_2020-3-31_0.pdf?1588207020)
- Salganik, M. J. (2017). *Bit by bit: Social research in the digital age* (Open review edition). Princeton University Press.
- Sanchez-Moyano, R., & Galante, C. (2016). *Small houses, big impact: Accessory dwelling units in underutilized neighborhoods*. UC Berkeley Turner Center for Housing Innovation. <https://turnercenter.berkeley.edu/research-and-policy/small-houses-big-impact-making-the-case-for-accessory-dwelling-units-in-und/>
- Shoup, D. (2011). *The high cost of free parking*. American Planning Association.
- Solomon, A. (2021). What's blocking an ADU boom? *Planning Magazine*. <https://planning.org/planning/2021/summer/whats-blocking-an-adu-boom/>
- Spevak, E. (2019). *The ABCs of ADUs*. AARP. <https://www.aarp.org/livable-communities/housing/info-2019/accessory-dwelling-units-guide-download.html>
- U.S. Census Bureau (2017). *1-Year American community survey estimates*.
- U.S. Census Bureau (2019a). *1-Year American community survey estimates*.
- U.S. Census Bureau (2019b). *5-Year American community survey estimates*.
- Varady, D. P. (1988). Factors affecting middle-income elderly interest in accessory apartment conversion. *Journal of Architectural and Planning Research*, 5(1), 81–88.

Varady, D. P. (1990). Which elderly home owners are interested in accessory apartment conversion and home-sharing. *Journal of Housing for the Elderly*, 6(1-2), 87-100. <https://doi.org/10.1300/J081V06N01>

Wegmann, J. (2015). *Financing ancillary apartments on residential properties: Challenges and solutions*. UC Berkeley Institute of Governmental Studies.

Wegmann, J., & Chapple, K. (2012). *Understanding the market for secondary units in the East Bay* (No. 2012-03). UC Berkeley Institute of Urban and Regional Development. <https://escholarship.org/uc/item/9932417c>

Wegmann, J., Nemirow, A., & Chapple, K. (2012). *Scaling up secondary unit production in the East Bay: Impacts and policy*

*implications* (No. 2012-05). UC Berkeley Institute of Urban and Regional Development. [https://www.adu-california.org/wp-content/uploads/2021/05/scaling\\_up\\_secondary\\_unit\\_production\\_in\\_the\\_east\\_bay.pdf](https://www.adu-california.org/wp-content/uploads/2021/05/scaling_up_secondary_unit_production_in_the_east_bay.pdf)

Woetzel, J., Mischke, J., Peloquin, S., & Weisfield, D. (2016). *A tool kit to close California's housing gap: 3.5 million homes by 2025*. McKinsey & Company. <https://www.mckinsey.com/~media/mckinsey/industries/public%20and%20social%20sector/our%20insights/closing%20californias%20housing%20gap/closing-californias-housing-gap-full-report.pdf>

Zillow. (2021). *Zillow home value index*. <https://www.zillow.com/sacramento-ca/home-values/>