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A Granny Flat of One's Own? The Households that Build Accessory-Dwelling Units in Seattle's King County

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Abstract

This paper inserts itself in current debates about the legalization of Accessory-Dwelling Units (ADUs), by casting a new light on the profiles of households filing ADU permits in the unincorporated areas of Seattle's King County. Correlations between the concentration of minority households and the permitting of ADUs might call into question preconceived notions that such legalizations benefit suburban, older, white middle-class households in the first place. We seek to address the relationship between legalizing ADUs in King County, the major county of the Seattle metropolitan area, and general characteristics of households who build ADUs, based on age, race, and income. Findings underline premises for further evidence about the fact that minority homeowners benefit from the local permitting of ADUs. These findings could be the translation of a particular adequacy between ADU legalization and the long-term projects of local homeowners to transform their residential space.

Keywords: Accessory-Dwelling Units, Informality, Housing Policy, Homeownership, Real Estate Analysis

Introduction

Since 2010, Seattle joined the list of cities at the forefront of Accessory-Dwelling Unit (ADU) legalizations. Accessory-Dwelling Units are independent units built either within single-family homes or on their lots. These separate living spaces are usually equipped with kitchen and bathroom facilities. Additional space in existing housing units can sometimes provide opportunities for some households. Such might be the case for parents whose children return home after college, young couples looking after their aging parents, or families who want to rent an unused garage as a source of extra monthly income. Housing policies and regulatory structures have historically given these circumstances very little consideration. This topic matters because it explores affordable housing alternatives that were long informal and underestimated in local housing markets.

This paper intends to analyze the outcomes of the Seattle initial citywide legalization of ADUs in 2010 by looking at a recently released dataset specific to one of the counties making up the larger Seattle metropolitan area. We therefore evaluate

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the relationship between the permitting of ADUs in the unincorporated areas of King County and the characteristics of households who build these ADUs in terms of race, income, and age.

This paper complicates the preconceived notion that anticipates households with ADUs to be white, older, middle-class homeowners with a good knowledge of the regulatory tools available to them. This preconceived notion has even shaped the local conversation about the pros and cons of the policy. One recurrent comment made by obstructionists against the upzoning of Seattle neighborhoods this June was that such a legalization would “create tremendous uncertainty for 300,000 mostly middle-class residents supporting the city through homeownership” (The Seattle Times 2018). Such a preconceived notion about the typical profile of households that would be concerned by the policy is striking. Therefore, the main hypothesis of this analysis is that there could be a correlation between ADU permitting and the concentration of certain minority groups in the unincorporated areas of King County. These include urban areas of Seattle as well as suburban and rural areas, and findings could inform the likelihood of ADU permitting for other households at the metropolitan level.

We first ground our hypothesis in literature that justifies the rationale of this study, despite the fact that research about ADUs is still quite sparse. We then introduce the research methodology behind the statistical models developed to address this hypothesis. We finally present the results of these regression models carried out in the location of ADU permits. Findings corroborate our initial hypothesis about the fact that minority households benefit from the local permitting of ADUs. With further research, we could confirm our assumptions more firmly. Correlations between African-American and Hispanic households and the permitting of ADUs introduce how we might further call into question preconceived notions that such legalizations benefit suburban, older, white middle-class households in the first place.

The results obtained in this paper seem to qualify such a preconceived notion, which shapes both conversations about policy-making and debates in the literature on the topic. Based on the analysis of the correlation between the filing of ADU permits and the characteristics of households profiled, it appears that in the unincorporated areas of King County, be they urban, suburban, or rural, your average ADU permit seeker might not be necessarily older, white, and middle-class.

This research could inform policy-making. It could justify the use of regulatory tools that favor alternative ways to provide affordable housing units for underserved households. We still conclude with a strong recommendation for further mixed methods research to increase the robustness of this model, and ensure transferability of results.

A Review of Debates around Who ADUs Ultimately Serve

A subject of debate in recent planning research is the legalization of ADUs, what alternative this is to classic affordable housing options, and how we can measure its impact

on neighborhoods. We here outline the trends that structure this debate, in order to show where this paper positions itself.

The wide variety of names used to refer to ADUs underscores the lack of standardization that characterizes this form of housing. A screening of reports and papers shows how they have been referred to indifferently as granny flats, nanny flats, mother-in-law units, backyard cottages, micro-lofts, companion units, elderly cottages, garage apartments, or second units. Yet, since the 1990s ADUs have represented an important annual addition to the nation's housing stock. Estimates evaluate the annual creation of units between 65,000 and 300,000 (Gellen 1985; Howe 1990). Such shifts have thus far informed two schools of thought for secondary-unit supply in the current literature (Wegmann and Nemirow 2011). The first one considers ADUs from a "need" perspective, as a way to generate extra income, while the second one looks at them from a "capacity" perspective, through the use of surplus residential space. This paper focuses on the "need" perspective in order to evidence how the profiles of households that file ADU permits are much more diverse than what public opinion—and a large part of the literature—holds.

The rise of these populations of interest is partly explained by changing economics, which drive both supply and demand for ADUs (Sage 2008; Mukhija et al. 2014). As more families turn to renting and away from homeownership (Been et al. 2014b), and poverty moves to the suburbs (Kneebone and Berube 2014), a growing number of renters are searching for units in predominantly singlefamily neighborhoods. Meanwhile, the need for additional income on the part of homeowners drives ADU construction.

ADUs fuel a heated debate over the balance between their advantages and disadvantages. Advantages include the provision of affordable housing options (Been, et al. 2014a), greater neighborhood integration, and more neighborhood diversity (Chang 2011; Brinig and Garnett 2013). In contrast to this, a list of recurrent disadvantages includes potential links with displacement and gentrification (Bertolet 2018), the risk of creating more temporary rentals (Furman Center 2014), and the overcrowding problem for associated off-street parking space (Chapple et al. 2012), notwithstanding concerns about the affordability of ADUs. This paper does not seek to verify whether these assumptions about the advantages and disadvantages of ADUs are true. Still, it intends to start outlining the hypothesis which states that not only suburban, white, middle-class homeowners benefit from the filing of ADU permits.

ADUs are becoming more important in housing supply, but little research has been done assessing the correlative aspects of ADU policy and household demographics. Understanding why this is an important question and in what ways certain results can be used for policy and planning is necessary. For this reason, this paper sets out to address the relationship between ADU permitting and household characteristics in terms of income, race, and age. Previous studies have formulated the hypothesis of a link between these variables, and this paper builds upon these findings to test this in the unincorporated areas of King County, WA.

There is a literature that briefly addresses the link between ADU construction and household demographic and socio-economic profiles. The literature generally reports that the typical ADU homeowner is usually white, with an average age of 49 years, well-educated, and affluent (Chapple et al. 2012). Additional research recently started to consider demographic and socio-economic features, underlining that ADU construction was more likely to take place in neighborhoods featuring slightly lower incomes, younger households, less children, and lower concentrations of white households (Wegmann and Chapple 2012). Other studies have started to underline the potential diversity in household profiles, which could, if better investigated, inform much more neighborhood-specific policies instead of one-size-fits-all citywide approaches (Mukhija et al. 2014). Rudel's study of Babylon, a blue collar suburban town of Long Island, New York, evidenced that secondary units rented, on average, for 35% less than non-secondary unit apartments (Rudel 1984; Wegmann and Nemirow 2011). A lot of it had to do with the fact that tenants were usually related to the homeowners. Paradoxically, the informality associated with these networks connecting homeowners to tenants increased the racial divide between ADU households and households without ADUs. The study was based on a 1982 survey of ADUs recently after these were legalized in the suburbs of New York in 1980. While African-Americans made up 14% of the local population, almost none of them occupied the surveyed ADUs. The study suggested that such striking results could be further investigated if longitudinal data was further collected, to strengthen these preliminary findings.

A recent study that surveyed homeowners in Portland, Seattle, and Vancouver who had built ADUs, or recently bought a house with a new ADU, identified knowledge and use of financing sources as key barriers to ADU construction (Chapple et al. 2017). 30% of respondents used only their own savings in order to finance their ADU construction project. Meanwhile, most respondents mentioned obtaining a loan (34%) and paying for the cost of construction (18%) as their top challenges. This paper builds upon such findings. It is guided by a hypothesis that spatial and class-based inequality exists in *policy capital*¹ and is manifest in housing policy-making. Recourse to ADU permitting would therefore entail the use of a certain network of knowledge (Fischer et al. 2018), or policy capital, from local households. We consider that the capacity to activate, take advantage, and benefit from ADU permitting works along socio-economic and racial lines.

This capacity is therefore what allows households to overcome the main regulatory obstacle for ADUs: local zoning ordinances and land use regulations that prevent homeowners from creating them (Williams 2001; Wang 2015). Partisans of legalizations argue

1 The topic of power associated with transactions and socio-spatial negotiations enables an exploration of the notion of *policy capital*, which we coin based on the definition of capital by Robert Putnam as “networks and norms of civic engagement” (Putnam 1993, 132). The neighborhood level is a great scale at which to analyze such manifestations of differentials in policy capital. This can indeed be inserted in a rich literature on neighborhood effects (Sampson 2011).

that these regulatory tools need to adapt to the shifting needs of households. Therefore, the main actions taken in that direction have been through state acts or local ordinances, first in places that were at the forefront of such debates (Cobb and Dvorak 2000).

The diagram below presents the timeline of major legalizations that occurred in both the United States and Canada over the past five decades (refer to fig. 1). Several North American cities and states counted large stocks of old informal housing units. San Francisco had between 20,000 and 30,000 ADUs by 1960, 90% of which were illegal. Vancouver, BC is a flagship city in this sense, since ADUs have long made up a third of the city's rental housing stock. Local planners first set out to legalize informal ADUs between the late 1970s and 1990s. This did not always trigger long-term results at first, as was the case with the 1982 California State Bill 1534 legalizing ADUs on single- and multi-family lots, which was eventually overrun in 2002. Still, such efforts structured new geographies for these alternative housing units, first in cities across the United States and Canada that were at the forefront of experimentation, and later in other parts of the continent.

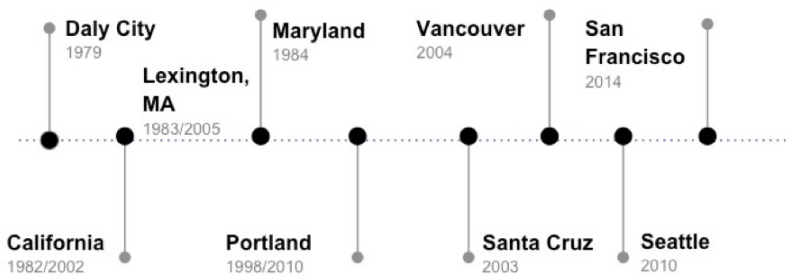
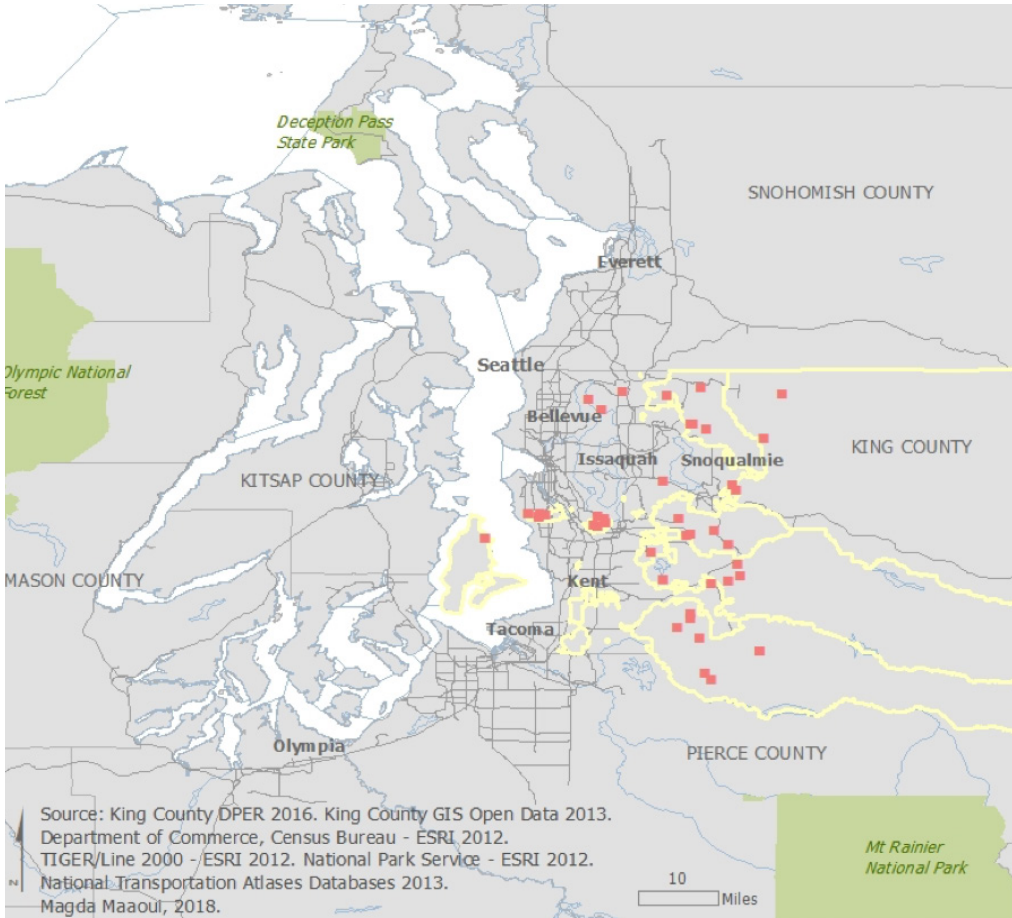


Figure 1 Cities and states at the forefront of ADU experimentation (Image by author)

The city of Seattle started the conversation about legalizing ADUs in the mid-1990s, and about detached ADUs since 2006. ADUs were common before then, until they were banned in the 1950s. Legalization efforts first started as a pilot project in Southeast Seattle from 2006 to 2009 (Jorgensen 2013), prior to being extended to the larger metropolitan area in 2010 (Rasmussen 2014; Chapple et al. 2017). Decision makers expected 80,000 ADUs to be legalized or built as an outcome of this new regulation. Yet, only 159 ADUs were legalized in 2015. There are now 1,200 ADU units, which represents only 1% of single-family houses in the city (Buker and Podowski 2014, 2015). Estimations show that if only 5% of local single-family houses added ADUs, this would create 4,000 additional units for the city (Johnson et al. 2011). Since 2006, the number of permits for ADUs has slowly but steadily increased (Chapple et al. 2017).

Seattle has recently been at the forefront of ADU legalization, and while it is hard to find data on such legalizations at the metropolitan level, the fact that King County made its data open to the public presents us with an opportunity to start formulating preliminary results, subject to further research in order to be able to generalize

our findings. King County is one of the three Washington counties that make up the Seattle-Tacoma-Bellevue Metropolitan Statistical Area. The local planning department recently started collecting data on the permitting process of ADUs. It therefore created a special data service for its unincorporated areas. The following map documents the location of households that filed an ADU permit in these unincorporated areas since the 2010 law (refer to fig. 2). These households are evenly distributed in both the urban, suburban, and rural areas of King County.



- Household with a Permitted ADU
- ▭ King County Unincorporated Community Service Area
- ▭ Counties
- Highway Network
- ▭ Major Parks
- ▭ Hydrographic Network



Figure 2 Households with a permitted Accessory-Dwelling Unit in King County's unincorporated Community Service Areas, since the 2010 legalization (Image by author)

Unincorporated areas inform policy outcomes in urban fringes that oftentimes feature low density, discontinuous, suburban-style developments. They are mostly the result of rapid unplanned growth, governmental fragmentation, and segmented land markets. At the same time, they constitute a useful case study, a potential “lesson from the fringes,” when it comes to the permitting of previously informal units such as ADUs. The following charts underline how the characteristics of King County and its Unincorporated Community Service Areas are fairly comparable when it comes to income, age, and racial and ethnic makeup (refer to fig. 3). For this reason, the unincorporated areas of King County could potentially inform us, to some extent, about what the trends at the larger metropolitan area level have been since the legalization of ADUs was passed in 2010.

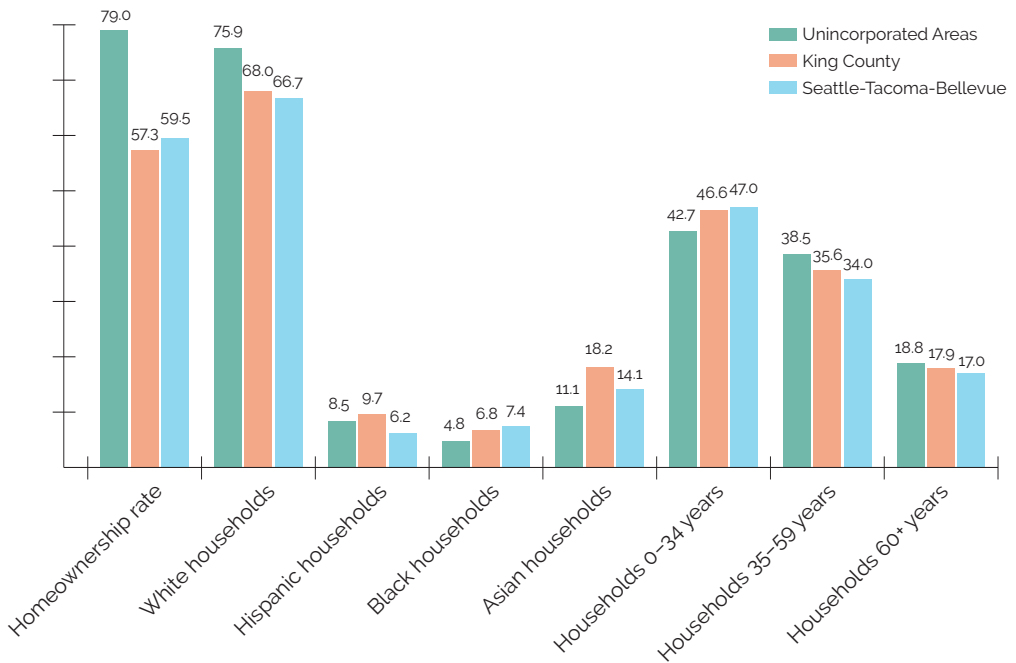


Figure 3 Households profiles: Unincorporated Areas, King County, Seattle Metropolitan Area (Source: US Census 2010, ACS 5-year estimates 2012-2016, King County services 2009 and HUD Comprehensive Affordability Study (CHAS) 2008-2012, Unincorporated King County demographic service 2015; Image by author)

Measuring the Correlations between Minority Household Profiles and ADU Permitting

The ADU submarket is generally harder to study, because of the strong lack of permits and zoning ordinances that could clearly inform research (Wegmann and Chapple 2012). Most ADU reports and papers typically rely on data about permits issued at multiple levels. Alternative sources include data about standard permits or violations issued in regular units, neighborhood or metropolitan surveys conducted as part of studies about

ADUs, or the systematic screening of local rental internet advertisements. The U.S. Census Components of Inventory Change, released by the U.S. Department of Housing and Urban Development (HUD) on a biannual basis, also displays national data about “shadow markets,” with a major limitation in that it does not distinguish between secondary units and other “shadow market” units (Wegmann and Chapple 2012).

We base this paper on the hypothesis that there is a relationship between the location of ADUs and the concentration of certain minority households at the neighborhood level. This research relies on two datasets.² First, this paper takes advantage of the release of new permitting data. As a matter of fact, the local Department of Permitting and Environmental Reviews (DPER/BFSD) Planning Services Section for Permit Intake recently released permitting data collected from 2010 to 2014. The King County DPER helped narrow down the types of permits included in our dataset to the ones relative to Residential Building ADU land use permits for property in the unincorporated areas of King County. The dataset was generated using the Civic Platform Accela Land Management software, a cloud-service permitting platform which is used more and more by local governments, and has the advantage to give access to open data. Such data can be downloaded as a set of Excel records spanning three- to ten-month periods. We merged these records for the years 2010–2014, without duplicating observations. Each unit’s local address was then aggregated at the ZIP code level. We obtained a total number of 54 observations.

The second dataset documents demographics (income, age, race), at the ZIP code level. American Community Survey 2010–2014 five-year estimates on race, income, and age represent averages from information collected via U.S. Census annual surveys and censuses about King County. The “Race by Individual” table’s metrics on race and ethnicity, the “Economic Characteristics” table’s income and benefits by households metric, the “Age and Sex” table’s total age metric, no matter the sex by individual, were merged with the permitting dataset.

We renamed variables and merged some categories, specifically for income and age, for clarity. The first subgroup of independent variables included selected race categories that this study controls for (Hispanic, Black, Asian). The second subgroup included income categories labeled low-income (< \$10,000–\$50,000), middle-income (\$50,000–\$99,999), and high-income (\$99,999–\$200,000 or more).³ The study controlled for the low-income and high-income categories. The third subgroup included age categories that merged the classification used by the U.S. Census⁴ into three categories,

2 Links to both datasets:

<http://www.kingcounty.gov/depts/permitting-environmental-review/info/records/landuse.aspx>
http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkml

3 We based this categorization on the fact that the median household income for the Seattle-Tacoma-Bellevue Washington metro area was \$78,612 in 2016 (American Community Survey 2016).

4 Under age 25, Age 25–34, Age 35–44, Age 45–54, Age 55–64, Age 65–74 and Age 75 and older.

namely “0 to 34 years,” “35 to 64 years,” and “64 years and older.” It controlled for the “0 to 34” and “35 to 64” age categories.

To answer this question, we developed two regression models. Instead of developing an Ordinary Least Squares (OLS) multivariate regression model, we set out to develop two count regression models, which are a better fit to analyze count data. In fact, count data is often analyzed incorrectly using OLS regression models. For this reason, we went beyond the linear analysis of this data and developed a Poisson regression model and a negative binomial regression model. We considered developing a logistical regression model to analyze this dataset, in order to link our findings to the likelihood that ADU homeowners belong to the categories studied. Yet, the fact that we do not have access to individual data about demographics and income at the household level makes this impossible for now.

The number of ADU permits at the ZIP code level is the dependent variable, while the concentration of certain age, race, and income groups constitutes the set of independent variables. Table 1 summarizes the characteristics for each of these variables.

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Number of units	54	1.2778	1.7742	0	7
Percentage of low-income households	54	35.0981	14.3277	0	64.4737
Percentage of middle-income households	54	29.1031	7.0661	0	44.4533
Percentage of high-income households	54	35.7988	17.6402	9.4118	100
Percentage of white households	54	75.8850	17.7111	29.8542	100
Percentage of Hispanic households	54	8.4537	10.3932	0	72.2
Percentage of Black households	54	4.8257	6.4770	9	26.3848
Percentage of Asian households	54	11.1139	9.9423	9	39.9257
Percentage of households aged from 0–34 years	54	42.7047	9.3752	4	61.7499
Percentage of households aged from 35–64 years	54	38.4986	5.5197	25.5802	59.3857
Percentage of households aged 65 years and older	54	18.7967	7.8581	0	54

Table 1 Descriptive summary statistics

We know from this dataset that ADUs are widespread rather than exceptional, given the location of permitted units. We performed a power analysis in order to estimate the sample size required to reach robust results. This was a preliminary step to determine if the sample size was large enough, and a useful step for the pilot study, especially when it comes to first-hand data collection. We performed a one-sample t-test with a standard significance level α of 0.05. We gathered that in order to reach a standard power of 0.9, the estimated required sample size would be 21 observations. Therefore, the power associated with the dataset used in this study is 0.9996, which shows that the model almost always accurately rejects the null hypothesis.

The Unexpected Potential Correlation between Permitting and Minority Households

We here compare the results for two regression models we ran in order to evaluate how ADU permitting correlates with the concentration of certain race, income, and age groups. We present these results in Tables 2.1 and 2.2.

The relationship between ADU construction permits by ZIP code and the concentration of certain race, income, and age groups is discussed in this section. All models simultaneously estimated control for collinearity. Table 2.1 presents coefficients as a difference between the logs of expected counts, while Table 2.2 presents results as incidence rate ratios, which we can obtain by exponentiating the Poisson and negative binomial regression coefficients.

In terms of race, results begin to corroborate our initial hypothesis about the link between ADU construction and the concentration of certain minority households. Both the Poisson regression model (Model 1) and the Negative binomial regression model (Model 2) underline a statistically significant positive correlation between ADU permitting and the concentration of Hispanic and Black households. These models also show a negative correlation between ADU permitting and the concentration of Asian households, but we must further analyze this sub-hypothesis since findings are not statistically significant.

While holding the other variables constant in the model, Black households are expected to have a rate of ADU permits at the ZIP code level 1.1429 or 1.1322 times greater (Model 1 and Model 2, respectively). Hispanic households are also expected to have a rate of ADU permits at the ZIP code level 1.0552 or 1.0649 times greater (Model 1 and Model 2, respectively). Meanwhile, if the percentage of Asian households at the ZIP code level were to increase by one point, their rate ratio for ADU permits would be expected to decrease by a factor of 0.9744 or 0.9784 (Model 1 and Model 2, respectively), while holding all other variables in the respective models constant.

In terms of income, findings potentially fuel what the literature says about the correlation between middle-income households and the recourse to ADU construction. Indeed, both models show that ADU permitting is negatively correlated with the concentration of low- and high-income households, and these findings are statistically significant.

Table 2.1	Model 1: Poisson Regression	Model 2: Negative Binomial Regression
Percentage of low-income households	-0.1702*** (0.0322)	-0.1818*** (0.0493)
Percentage of high-income households	-0.0523** (0.0206)	-0.0639** (0.0338)
Percentage of Hispanic households	0.0537*** (0.0202)	0.0628** (0.0302)
Percentage of Black households	0.1336*** (0.0320)	0.1242*** (0.0441)
Percentage of Asian households	-0.0260 (0.0210)	-0.2184 (0.0281)
Percentage of households aged from 0–34 years	-0.0701** (0.0320)	-0.0725* (0.0420)
Percentage of households aged from 35–64 years	-0.0938* (0.0528)	-0.0841 (0.0699)
Constant	13.5020*** (3.4417)	13.9723*** (5.0607)
Observations	54	54
Overall Pseudo R-squared	0.2193	0.1195

Table 2.2	Model 1: Poisson Regression	Model 2: Negative Binomial Regression
Percentage of low-income households	0.8435*** (0.0272)	0.8338*** (0.0410)
Percentage of high-income households	0.9490** (0.0196)	0.9381** (0.0317)
Percentage of Hispanic households	1.0552*** (0.0213)	1.0649** (0.0322)
Percentage of Black households	1.1429*** (0.0366)	1.1322*** (0.0499)
Percentage of Asian households	0.9744 (0.0204)	0.9784 (0.0275)
Percentage of households aged from 0–34 years	0.9323** (0.0298)	0.9301* (0.0391)
Percentage of households aged from 35–64 years	0.9105* (0.0481)	0.9105* (0.0481)
Constant	730838.2*** (2515358)	1169710*** (5919554)
Observations	54	54
Overall Pseudo R-squared	0.2193	0.1195

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2 Model results: Table 2.1 presents associated coefficients, which are translated into incidence rate ratios in Table 2.2. Constant estimates baseline odds. Standard errors in parentheses

If the percentage of low-income households at the ZIP code level were to increase by one point, their rate ratio for ADU permits would be expected to decrease by a factor of 0.8435 or 0.8338 (Model 1 and Model 2, respectively), while holding all other variables in the respective models constant. Similarly, if the percentage of high-income households at the ZIP code level were to increase by one point, their rate ratio for ADU permits would be expected to decrease by a factor of 0.9490 or 0.9381 (Model 1 and Model 2, respectively), while holding all other variables in the respective models constant.

In terms of age, findings show that ADU permitting is negatively correlated with the concentration of households aged between zero and 64 years old. Such a correlation is statistically significant, except for households aged between 35 and 64 years old in the negative binomial regression model (Model 2). This does mean that all results for this metric cannot be considered conclusive until further research is conducted.

If the percentage of households aged 34 or younger at the ZIP code level were to increase by one point, their rate ratio for ADU permits would be expected to decrease by a factor of 0.9323 or 0.9301 (Model 1 and Model 2, respectively), while holding all other variables in the respective models constant. Similarly, if the percentage of households aged between 35 and 64 at the ZIP code level were to increase by one point, their rate ratio for ADU permits would be expected to decrease by a factor of 0.9105 or 0.9194 (Model 1 and Model 2, respectively), while holding all other variables in the respective models constant.

We would ideally like to draw conclusions about how the demographic features of households affect the amount of ADU permits filed. However, several limitations of the existing data hinder our ability to do so conclusively. Therefore, while the statistical significance of most results allows to corroborate our initial hypothesis, this should only be considered a first step for further finer grain research on such correlations between ADU permitting and local households. With further data collection, the models could all do a better job of explaining the variation in ADU permits, as is evidenced by the fairly low pseudo r-squared values. We consider the statistical methods deployed to be satisfying and useful for this study, but a larger sample size collected over time could yield much more conclusive results. This is the prerequisite to transferability and replicability of results, in order to really inform the decision process of local policy-makers, and infer conclusions for localities that were not part of the study.

Conclusion

This paper is a first step toward analyzing the adequacy between ADU legalization and the long-term projects of local homeowners to transform their residential space. It inserts itself in current debates about the legalization of ADUs, by attempting to cast a new light on the profiles of households filing ADU permits in the unincorporated areas of Seattle's King County.

The focus is on unincorporated areas of King County because datasets were recently made available by the department in charge of ADU permitting. This poten-

tially informs how certain households in urban, suburban, and rural areas of this county benefitted indirectly from the legalization of ADUs in Seattle.

The models introduce potential correlations between African-American and Hispanic households and the permitting of ADUs. With more research, this might call into question preconceived notions that such legalizations benefit suburban, older, white middle-class households in the first place. We wish to insist upon—and further explore—the recourse to ADU permitting by certain minority households. These premises for further evidence could have relevance for local policy. They could justify the legalization of permits that provide alternative sources of income to certain minority households.

We mentioned how the topic of ADU legalization combines both the regulatory technologies of planning, and the incremental ways residential landscapes get to be shaped. What this paper offers is the first step for further research on the kind of households that are interested in building ADUs. If the story unfolding in Seattle's unincorporated areas is one where racially diverse homeowners might get to benefit from this new regulation, then testing the extent to which it is true, and how to further generalize this trend through policy-making, matters even more. The planning implications of this study are timely, given that the legalization of ADUs is now being adopted by more and more cities and local governments across the United States.

And with the legalization of ADUs comes the necessity to disseminate information to homeowners who would otherwise be intimidated by both permitting and construction processes. We could reach a better understanding of the mechanisms at work behind the networks of knowledge leading minority households to ADU permitting. This can be performed through interviews with households of varied profiles involved in the filing of ADU permits, participation in community meetings where this is addressed, and analysis of the topic with local decision-makers. This could, for example, potentially inform further hypotheses about whether the degree to which these racially diverse homeowners use such regulations correlates with strong traditions of local organizing, community informational channels at the neighborhood level, or spillover effects from neighboring white households.

The evidence presented in this paper cannot be considered definitive. We set out to test the robustness of the model, in order to assess the transferability of results, and underline future work to allow for stronger external validity. This shows that there needs to be further mixed-methods research applied to the overall ADU permitting cases in the unincorporated areas of King County. With more refined individual household data, a logistical regression model could further confirm our hypothesis and link our findings to the likelihood that the ADU homeowners belong to the categories studied. Alternative statistical work on this local housing market could refine the correlation between permitting, household demographics, and the physical characteristics of houses. The fact that ADUs are more legalized in suburban or core city areas, or the importance of metrics such as the age of buildings, and the overall pace of new

local constructions, can tell an even more complex story about the local households that build ADUs.

In addition, the DPER of King County must combine datasets from new legal ADU units and retroactively approved existing ADUs, allowing for a more comprehensive database. Data collection should be inventive, given the difficulty to evidence the presence of ADUs at the neighborhood level. Additional data collection can refine permitting datasets, by also assuming that permits for an additional kitchen, or a food preparation area, or bathroom facilities, can inform the construction of an ADU. Time series could eventually be performed to quantify shifts in permitting by ZIP code, in order to see where change is faster happening, once more data is collected over time. This could allow long-term research to inform the relationship between permitting and the demographic composition of neighborhoods. It could even capture whether legalized ADUs play a role in the evolution of territories, by slowing down or fastening the pace of neighborhood change.

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