REPLICATION

- Applied Statistical Analysis II POP77003
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When Do Renters Behave Like Homeowners? High Rent, Price Anxiety, and NIMBYism

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Paper overview

Study differences in renter attitudes between support for citywide housing growth (macro-scale) and attitudes toward new housing projects in neighborhoods (micro-scale). In particular, it examines whether renters exhibit not-in-my-backyard (NIMBY) behavior similar to that of homeowners through a broader survey of more than 3,000 respondents from 655 U.S. cities.

Original paper

- Q: There are differences between the preferences of homeowners and renters to supply houses citywide and just not in my backyard? What's the differences?
- A: By comparing support for housing citywide to opposition in one's own neighborhood, I have shown how spatial scale directly affects policy support. Renters support housing in aggregate but exhibit NIMBYism on par with homeowners when facing market-rate housing in their own neighborhood. Maybe renters are correlated with anxiety over housing prices.

replication

Study a model measuring whether renters with high rents exhibit NIMBYism(not in my back yard) like homeowners through a broader survey of more than 3,000 respondents from 655 U.S. cities.

- Q: Will users with high renters have NIMBYism compared to renters with low rents and behave the same as homeowners?
- A: Relative to low-rent renters, high-rent renters are concerned that newly developed housing will lead to increases in surrounding housing prices and rents. NIMBYism is price anxiety about rising house prices, even though they realize that there is a need for more housing within the city.

Data

Original paper

To test these theories across diverse environments, conducted a 3,019-respondent national survey of attitudes, capturing residents of 655 municipalities across 47 states. It contains the public opinoin on new housing devolopment.

Dependent Variables:

- `city_supply`: A survey question measuring support for lowering development restrictions to allow new housing construction, rated on a 7-point scale.(1 = "Strongly Oppose", 2 = "Oppose", 3 = "Somewhat Oppose", 4 = "Neutral/Uncertain", 5 = "Somewhat Support", 6 = "Support", 7 = "Strongly Support".)
- `neighborhood_ban`: Support for a ban on new housing construction in the respondent's neighborhood, rated on a 7-point scale. The same class as city_supply.

Independent Variables:

- `own`: Homeownership status with binary coding for homeowners and renters. `"1"` = Homeowner, `"0"` = Renter.
- `ideology`: Self-identified political ideology on a scale from extremely liberal to extremely conservative.
- `income`: Household income categorized into multiple bands.
- `whitenh`: A dummy variable indicating if a respondent is White, Non-Hispanic.
- `age`: Transformed age data from range categories to average values.
- `male`: Gender, coded as male or female. `"1"` = Male, `"0"` = Female
- `name`: The name of the municipality.

Data

replication

The source of data is same as original paper, acrossing diverse environments, conducted a 3,019-respondent national survey of attitudes, capturing residents of 655 municipalities across 47 states.
But I add a independent variables from original dataset:

- `zri_city`: Citywide average rent, Zillow.com, June 2016.

I divided the citywide average rent variable into three categories: low, medium, and high according to less than 1000, 1000-2000, and more than 2000.

```
# Define rent categories based on specified thresholds
socpoc$rent_category ← cut(socpoc$zri_city,
                           breaks = c(-Inf, 1000, 2000, Inf),
                           labels = c("Low", "Medium", "High"),
                           include.lowest = TRUE)
```

Model

Original:

- This model examines how factors such as homeownership (whether one owns property), political ideology, economic status (measured by log income), race (whether one is non-Hispanic white), age, and gender influence an individual's perception of a city-wide Increase support for housing supply by 10% and ban on neighborhood development.
- linear regression `lm()` is used to fit linear model with support with support for 10% supply and ban on neighborhood development . The we conbind two models into a table.

```
# Support for 10% supply
supply_7←lm(city_supply ~ own +scale(ideology)+scale(log(income)) +
whitenh  +age + male, subset(socpoc))
summary(supply_7)
# Support for Ban on Neighborhood Development-7
ban_7←lm(neighborhood_ban ~ own +scale(ideology)+scale(log(income))
+ whitenh  +age + male, subset(socpoc))
summary(ban_7)
```

replication:

- Add additional rent as an independent variable to explore the impact of rent on support with support for 10% supply and ban on neighborhood development.
    - linear regression `lm()` is used to fit linear model with support with support for 10% supply and ban on neighborhood development . The we conbind two models into a table.

```
re_supply_7←lm(city_supply ~ own
+rent_category+scale(ideology)+scale(log(income)) + whitenh  +age +
male, subset(socpoc))
summary(re_supply_7)
re_ban_7←lm(neighborhood_ban ~  own +rent_category+scale(ideology)+
scale(log(income))+ whitenh  + age + male, subset(socpoc))
summary(re_ban_7)
```

```
Support for 10% supply, Support for Ban on Neighborhood Development-7
================================================
                    city_supply neighborhood_ban
                       Full           Full
                        (1)            (2)
------------------------------------------------
Homeownership          -.69            .27
                       (.07)          (.07)
Ideology                .13           -.08
                       (.03)          (.03)
Income, Log            -.09           -.01
                       (.03)          (.03)
White, Non-Hispanic    -.24           -.12
                       (.06)          (.07)
Age                    -.01            .002
                      (.002)         (.002)
Male                    .16           -.12
                       (.06)          (.06)
Constant               4.44            3.61
                       (.10)          (.11)
------------------------------------------------
Observations           2,846          2,941
R2                      .09            .01
Adjusted R2             .09            .01
================================================
```

Output Comparison

Original:

Copy

```
#Table
stargazer(re_supply_7, re_ban_7, title="Support for 10% supply,
Support for Ban on Neighborhood Development-High rent",
label="neighborhood_ban_7",
          dep.var.caption = "",
          column.labels=c("Full","Full"),
          covariate.labels=c("Homeownership","Medium rents","High
rents","Ideology","Income, Log","White, Non-Hispanic","Age","Male"),
          omit.stat = c("ser", "f"), digits=2, align=T, type="text",
          initial.zero = F,  font.size = "small",star.cutoffs = NA,
omit.table.layout = "n",
          no.space=T, omit=c("name"))
```

- This generally indicates a negative relationship between homeowners and support for a 10% increase in housing supply within the city limits (city_supply) and a positive relationship between homeowners and support for ban on neighbourhood development. That is, holding other factors constant, homeowners are less likely than renter to support increasing housing supply within a city more likely to support bans on neighborhood development (neighborhood_ban)

Rplication:

Support for 10% supply, Support for Ban on Neighborhood Development-High rent

	city_supply	neighborhood_ban
	Full	Full
	(1)	(2)
Homeownership	-.70	.30
	(.07)	(.08)
Medium rents	-.30	.20
	(.11)	(.12)
High rents	-.41	.25
	(.12)	(.12)
Ideology	.14	-.09
	(.03)	(.03)
Income, Log	-.07	-.03
	(.03)	(.04)
White, Non-Hispanic	-.26	-.12
	(.06)	(.07)
Age	-.01	.002
	(.002)	(.002)
Male	.16	-.13
	(.06)	(.06)
Constant	4.75	3.42
	(.14)	(.15)
Observations	2,739	2,830
R2	.09	.01
Adjusted R2	.09	.01

Renter living in mid-rent and high-rent areas will generally be less supportive of increasing housing 10% supply than render in low-rent areas. However, the support for banning on neighborhood development is higher than that of tenants in low-rent areas, who show the same NIMBY phenomenon as landlords.

Specifically, property owners, regardless of rent level, appear to favor policies that maintain or increase the value of their properties. Regarding rent levels, residents in high-rent areas tend to have conservative attitudes toward increases in housing supply and prohibitions on community development.

Findings

- Impact of Home Ownership: In both models, property owners show lower support for increased housing supply, as shown consistently in both images, while property owners show higher support for banning neighborhood development, Indicates the existence of NIMBY phenomenon.
- Rent levels: We can see that rent levels play a significant role in influencing individuals' support for housing policies. In high-rent areas, individuals tend to be opposed to increased housing supply, and in these areas, individuals are also more likely to support neighborhood development bans.
- Ideology: In the model in the second picture, ideology has a positive relationship with support for increasing housing supply (city_supply) and a negative relationship with banning neighborhood development (neighborhood_ban). This may suggest that as ideological leanings become more liberal, individuals may be more supportive of increased housing supply but opposed to development in high-rent neighborhoods.
- Others variable: We can see that the other remaining variables have little impact on the model after adding the rent variable, and the results are almost the same.