



Flood Risk and the Public's Willingness to Relocate

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Motivation

What influences public support for a property buyout program?

- Climate change is likely to cause migration and retreat from vulnerable areas
 - *Increased flooding*
- Expanding property buyout programs are one approach being considered by governments to manage migration

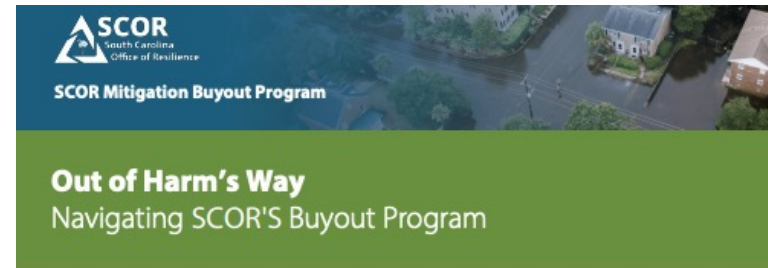
Buyout Program

- Federal Emergency Management Agency (FEMA)
 - Hazard Mitigation Grant Program (HMGP)
- Department of Housing and Urban Development (HUD)
- South Carolina Office of Resilience
 - Funding from HUD Community Development Block Grant-Mitigation (CDBG-MIT)
 - Voluntary
 - Residential properties in a floodplain

Public Support for Buyout Program

Potential Factors

- Flood risk
- Community factors
- Individual factors



What is a Voluntary Buyout?

Voluntary residential buyouts offer a solution to keep people safe, prevent future property loss, and create protected public land that will reduce flood risks in the community by naturally managing stormwater.

Homeowners living in a designated buyout area can voluntarily sell their homes or property to their municipality and receive up to \$250,000, inclusive of incentives.

Benefits of the Buyout Program

Voluntary buyout programs offer a range of benefits, such as protecting residents and property from flooding and creating green spaces that the local community can safely enjoy.



Relocates homeowners away from floodplains and out of harm's way



Eliminates financial hardship of maintaining and fixing flood-damaged homes



Reduces flood risk for entire neighborhood



Completely voluntary; homeowners can back out of the process at any point before closing

Data and Analysis

Survey

- Residents of South Carolina
 - Recruited by *Cloud Research*
 - November - December 2023
 - $n = \sim 500$
- Flood days treatment
 - Random draw from 7-200 days of disruptive flooding
 - Support for buyout program pre-and-post flood days treatment

Measures

Property Buyout

Property buyouts are a policy for reducing risk to people and communities from severe storms, flooding, wildfires, and other extreme events. Buyouts also reduce costs to homeowners, insurance companies, and the government for rebuilding after events. In a buyout program, the government purchases private properties including homes and businesses that are damaged or at risk. Participating property owners must then relocate.

Measures

Property Buyout

On a scale from 1 to 7, with 1 being strongly oppose and 7 being strongly support, please indicate your support for a property buyout program in South Carolina. In this program the federal government would purchase homes and businesses in South Carolina that have been damaged or at risk from natural disasters and the owners would need to move.

- **Average support = 4.17 on the 1 to 7 scale**

Measures

Flood Risk

- Concern over flooding in local area, *0 to 10 scale*
 - Average concern = 5.302
- Flood experience, *0 = never experienced a flood, 1 = experienced a flood*
 - 34% of respondents

Measures

Community Factors

- Satisfaction with community infrastructure (local government services, drinking water, roads, sewer*), *1 to 5 scale*
 - Average satisfaction = 2.78
 - Cronbach's α = 0.69
- Perceived community resilience and disaster response, *1 to 7 scale*
 - Average = 4.54
 - Cronbach's α = 0.89

Measures

Community Factors

- Live in a coastal county, $0 = no$, $1 = yes$
 - 27% of respondents
- Bridging social capital, 1 to 5 scale
 - Average = 2.47
 - Cronbach's $\alpha = 0.87$

Measures

Individual Factors

- Bonding social capital, *1 to 5 scale*
 - Average = 2.59
 - Cronbach's α = 0.79
- Political ideology, *1 (very liberal) to 7 (very conservative) scale*
 - Average = 4.2

Measures

Individual Factors

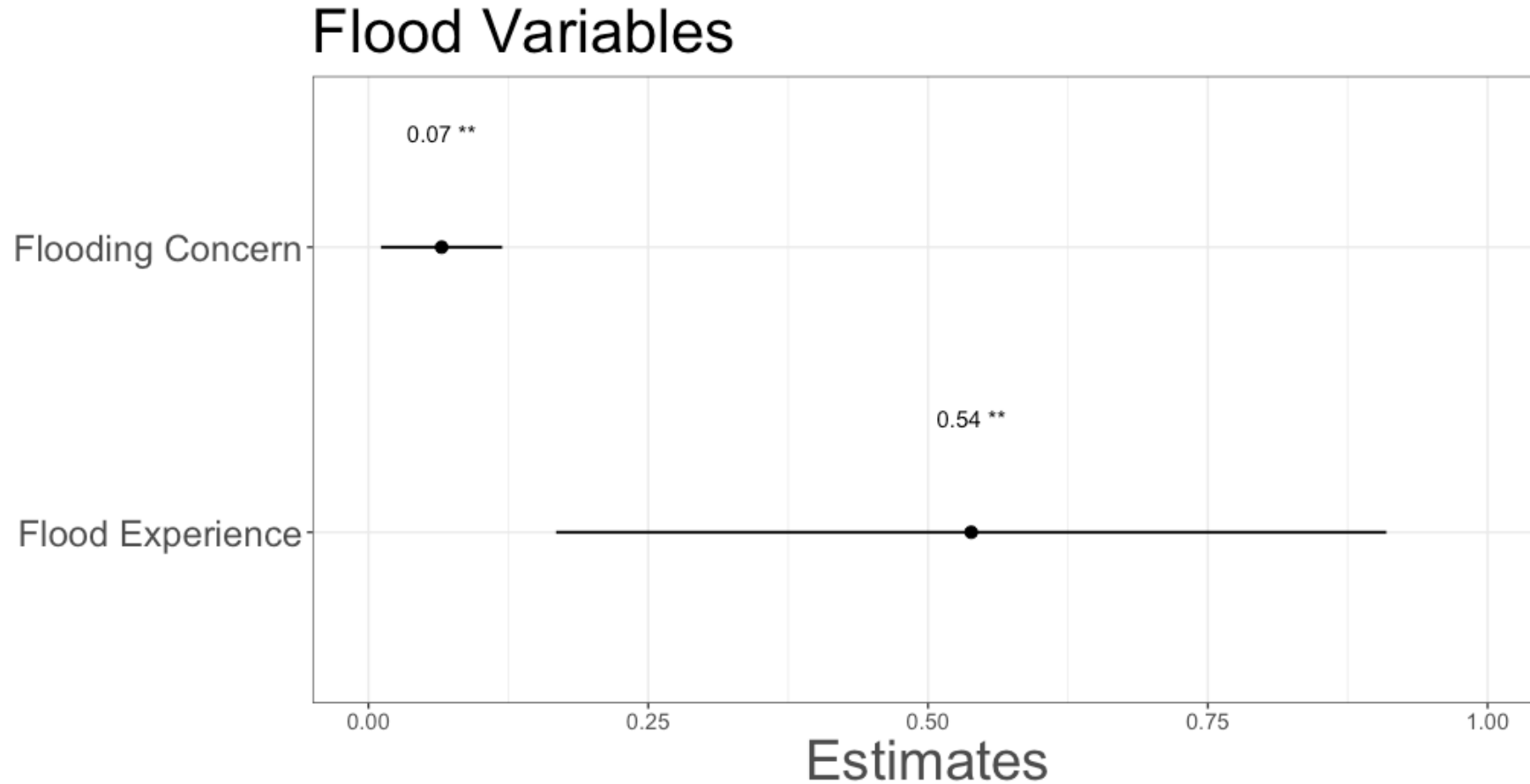
- Homeowner, $0 = no$, $1 = yes$
 - 60% of respondents
- Time at current residence, 1 to 4 scale
 - less than 1 year = 1
 - 1-5 years = 2
 - 6-10 years = 3
 - 11+ years = 4
 - Average = 2.75

Results

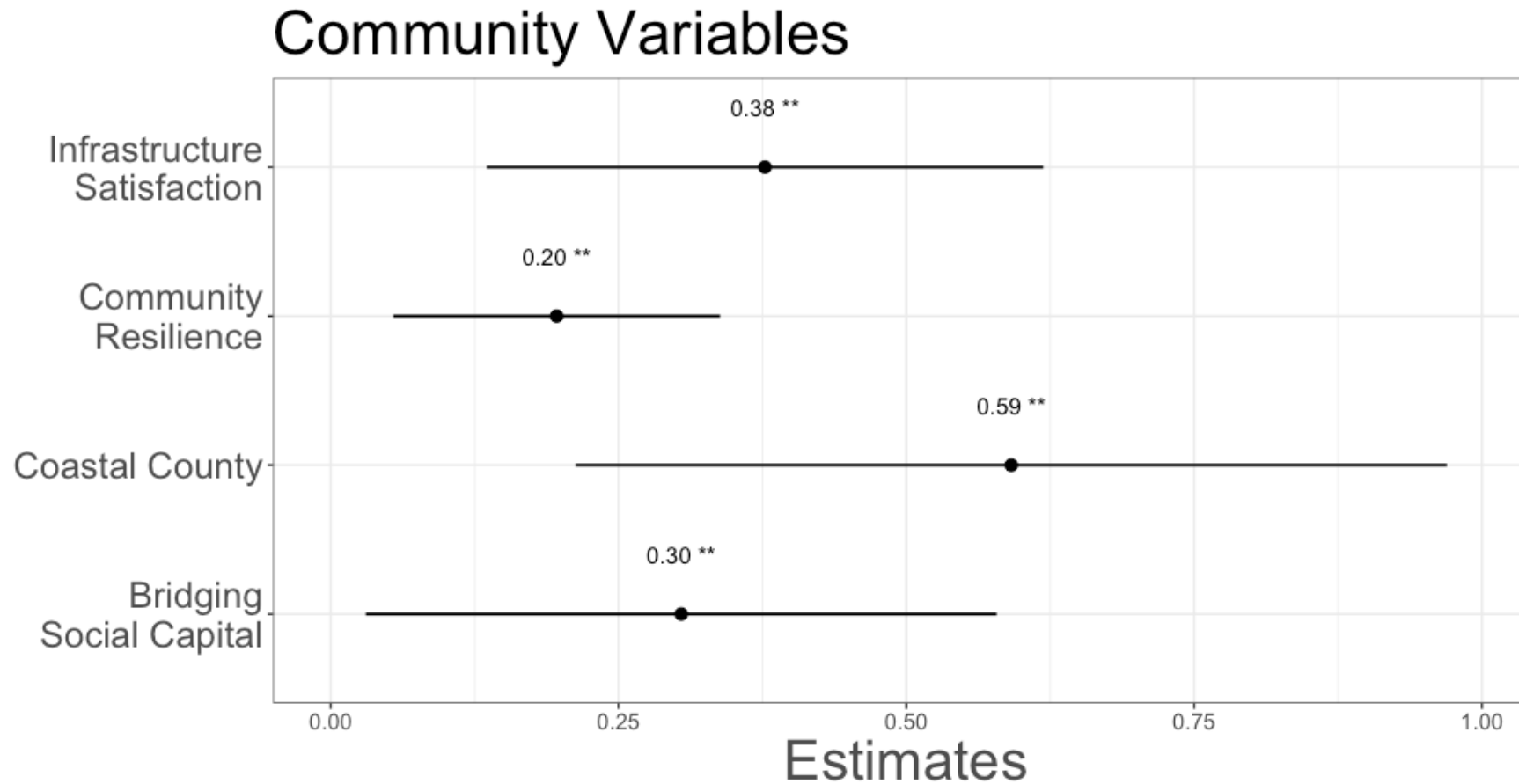
Results: Baseline Buyout Support

- Coefficient plots, grouped by factors
 - Flood risk
 - Community
 - Individuals
- Results shown control for all variables including demographics (age, gender, race/ethnicity, education, income)

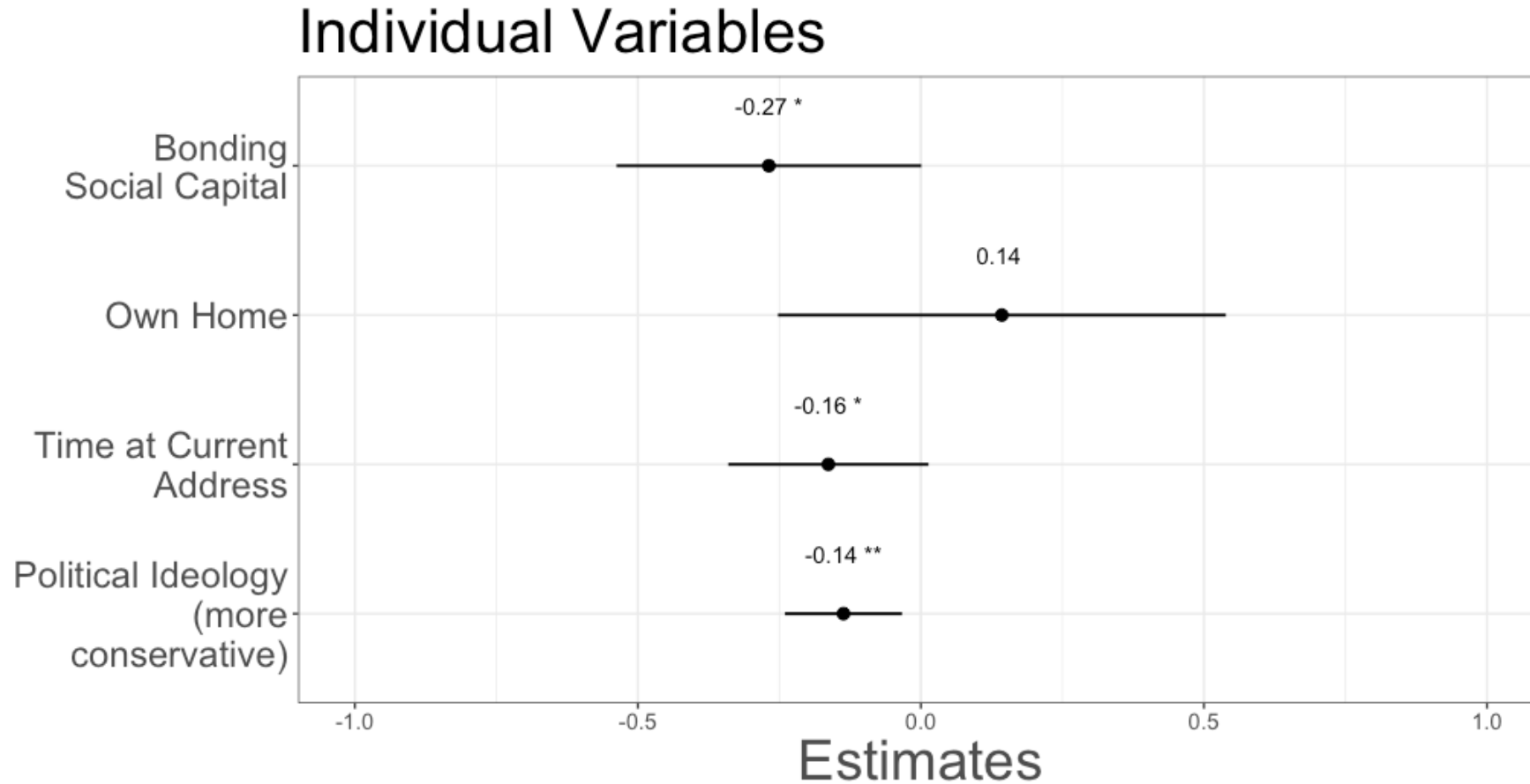
Results: Baseline Buyout Support



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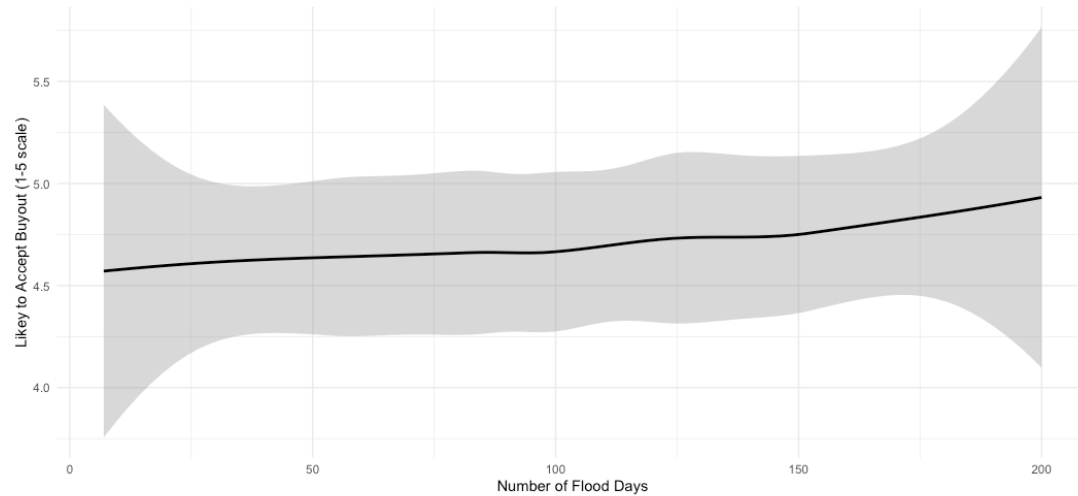


Results: Flood Days and Buyout Support

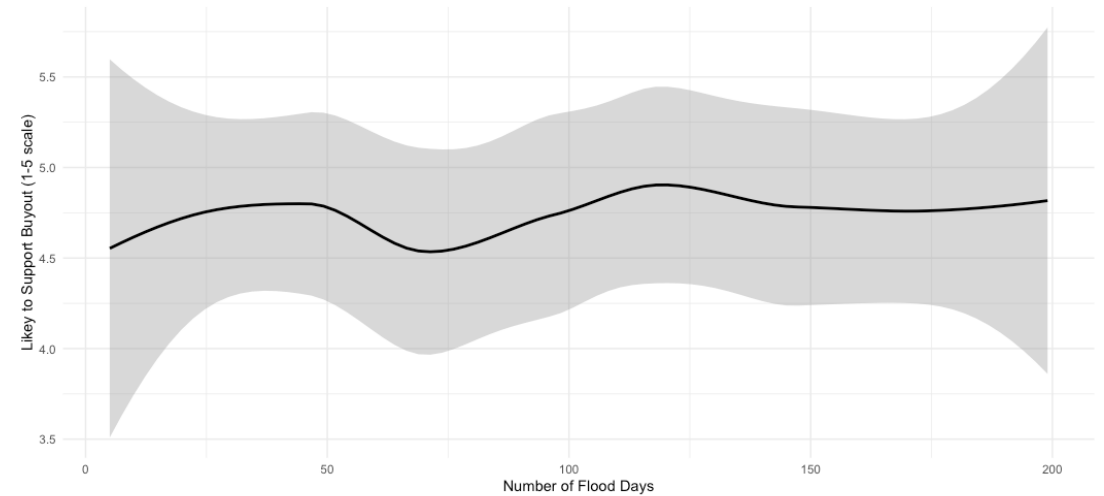
- Homeowners and renters
 - Homeowner willing to accept buyout, 1 (*very unlikely*) to 7 (*very likely*) scale
 - Renters support for buyout program
- Results shown control for all variables including *baseline buyout support* and demographics (age, gender, race/ethnicity, education, income)

Results: Flood Days and Buyout Support

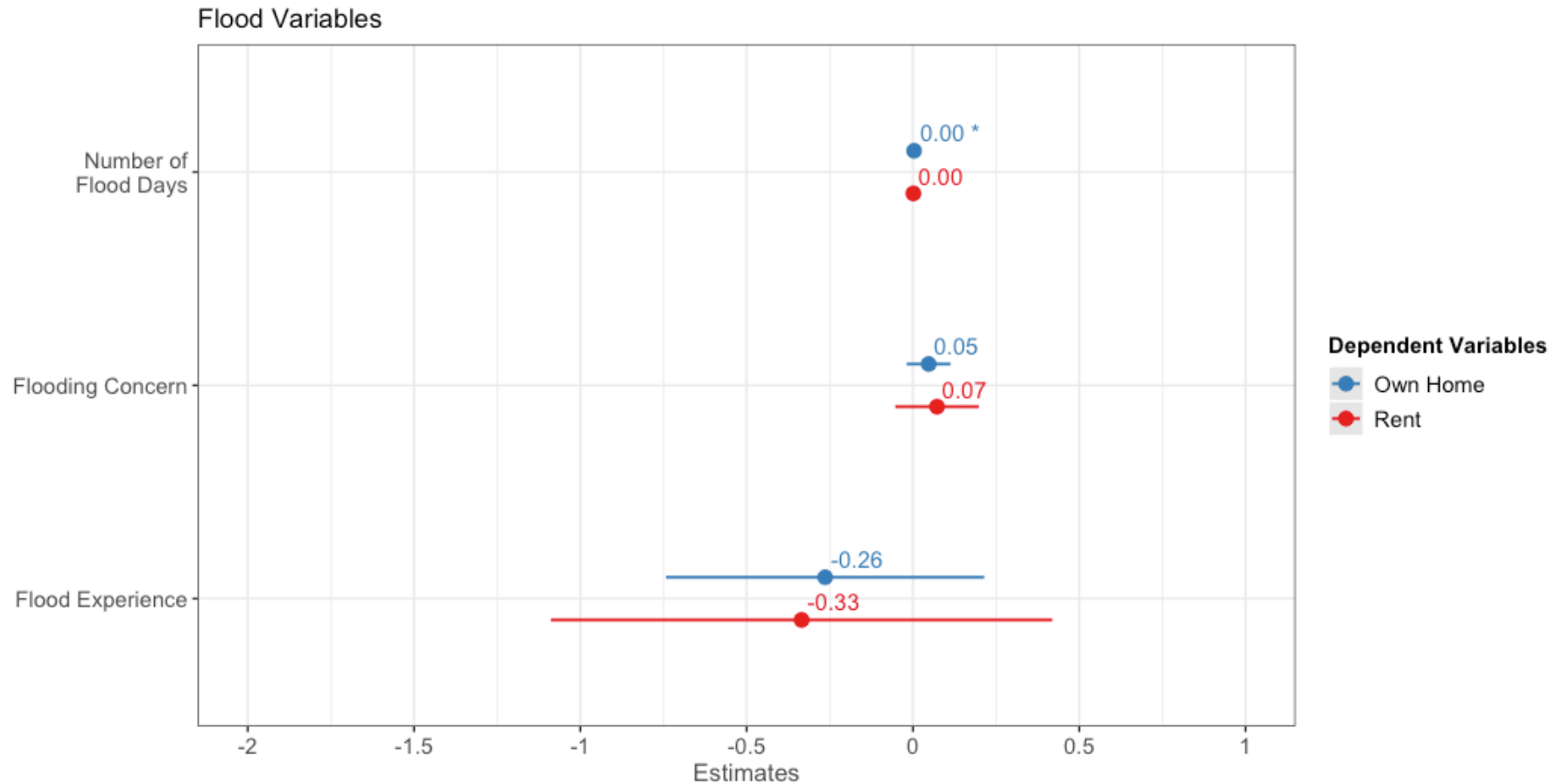
Flood Days and Likelihood of Accepting Buyout (Home Owners)



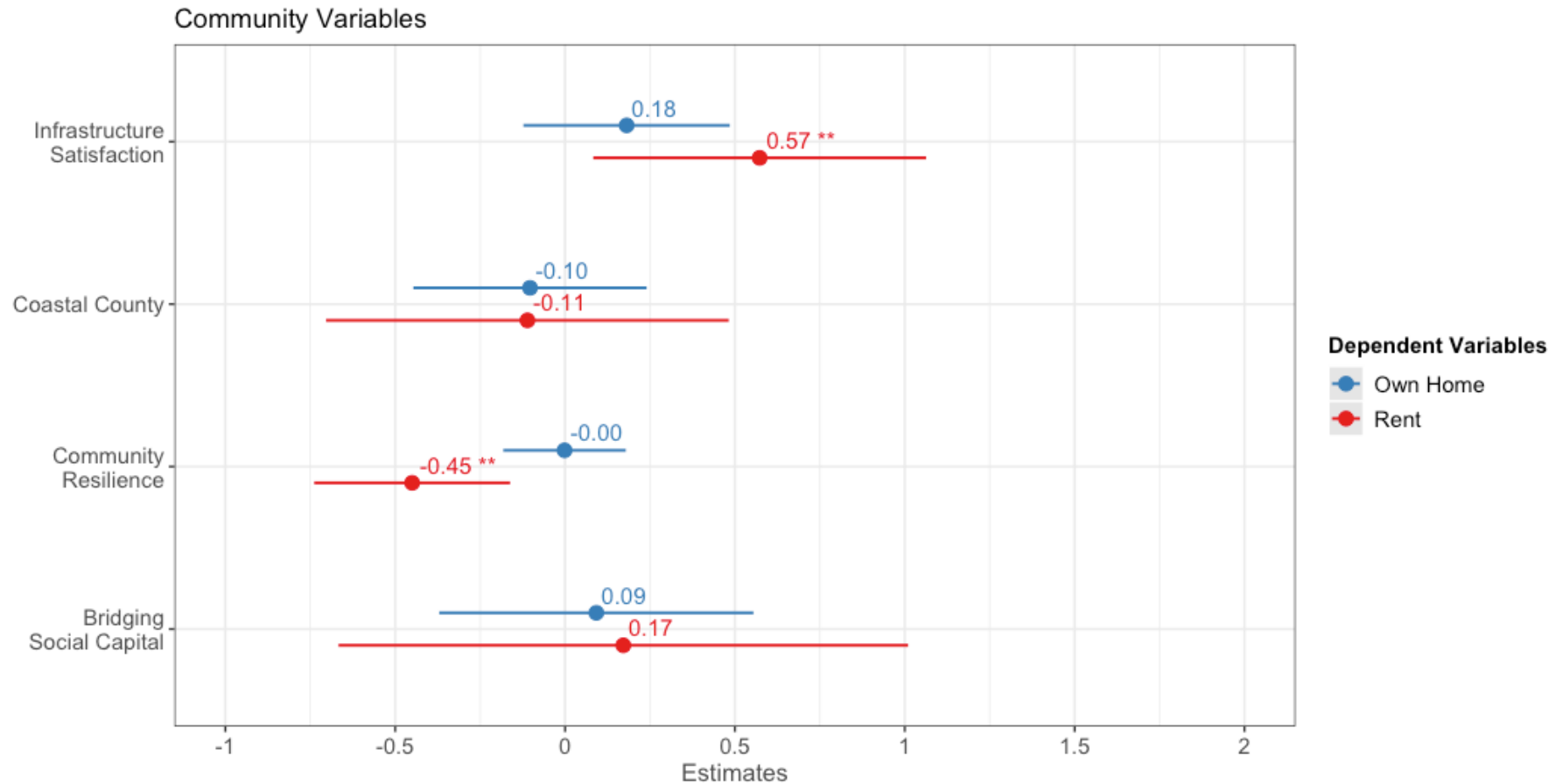
Flood Days and Likelihood of Supporting Buyout (Renters)



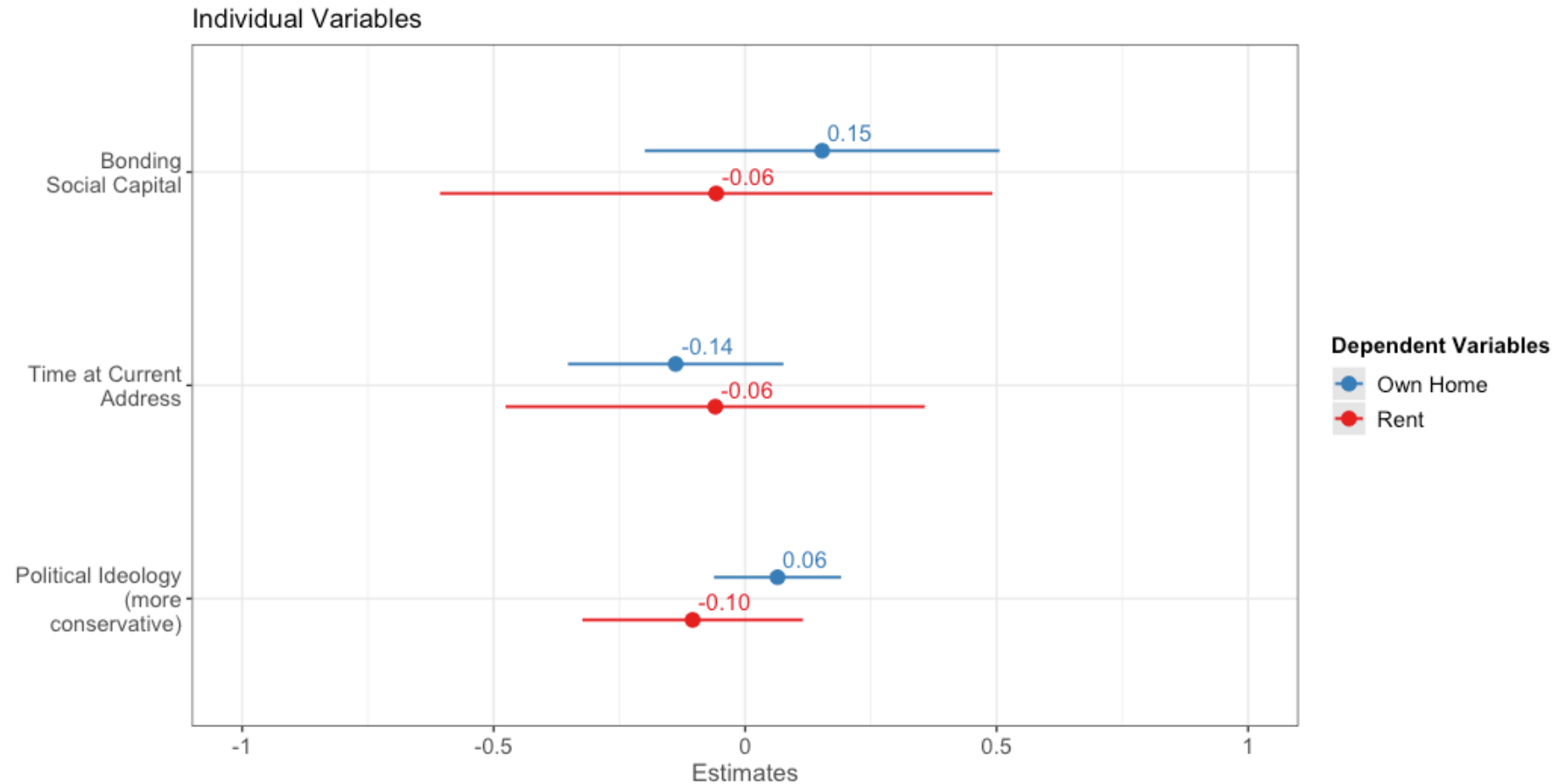
Results: Post-Buyout Support



Results: Post-Buyout Support



Results: Post-Buyout Support



Discussion

Baseline support

- Flood risk (concern and experience)
- Community factors
 - **Increased community satisfaction (infrastructure, resilience, bridging social capital) associated with *increased* support**
 - Coastal county residents more supportive than others
- Individual factors
 - Increased bonding social capital, longer at current address, and more politically conservative associated with *decreased* support

Discussion

Post-support

- Homeowners
 - Increased flood days associated with small increase in likelihood of accepting a buyout
- Renters
 - Infrastructure satisfaction associated with *increased* support
 - Less perceived community resilience associated with *increased* support

Comments and Questions

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