**Peer effects on flood buyout participation**

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Flooding is one of the most damaging consequences of climate change, as it destroys infrastructure and homes, posing significant financial burdens on affected communities. As the intensity and frequency of flooding events increase due to climate change, governments have turned to managed retreat as a strategy to reduce long-term risk. Managed retreat involves the relocation of individuals from flood-prone areas, often through buyout programs where government agencies compensate residents for demolishing their homes and moving to safer locations. Purchased land is typically transformed into open or greenspace, which halts future damage costs while also providing valuable ecosystem services.

Encouraging flood buyout participation, particularly contiguous buyouts, is a major policy goal to enhance the effectiveness of these programs. A major obstacle in buyout rollout progression is the “checkerboard effect,” where uneven participation across communities can result in a patchwork of vacant and occupied parcels, potentially raising taxes for those who remain. Despite the potential benefits, residents may be reluctant to participate due to factors like inadequate incentives, strong community ties, or financial constraints (BenDor et al., 2020). Understanding the dynamics of buyout participation and addressing challenges like contiguity is essential for ensuring the long-term success and fairness of managed retreat programs.

I contribute to the literature by estimating the revealed effects of neighbors’ buyout decisions on participation through actual buyout outcomes, rather than relying on stated preferences. Research has explored various influences on buyout participation, primarily in hypothetical flood settings including lab experiments (Paul et al., 2024) and surveys (Ando & Reeser, 2022; Song & Peng 2017; Robinson et al. 2018). One factor that is likely to influence a household’s participation is the decisions of their peers. In the only paper that has examined peer effects on natural disaster response that I am aware of, Hu (2022) finds that flood insurance purchase increased when a household’s Facebook connections experience flooding.

My second contribution to the literature is my novel approach to handle endogeneity in estimation of peer effects. Using the effect of neighbors to identify a causal impact on a household’s buyout participation is endogenous, and it is challenging to disentangle the channels through which neighbors influence each other. Peers may behave in a similar manner because they have similar constraints and characteristics which may or may not be observable. This is further complicated in the buyout context, as I must account for the factors that influence a government agency's decision to offer a buyout to a home in the first place. To deal with this problem, I leverage mandatory buyouts, which are exogenous, to disentangle underlying factors that may influence participation in a voluntary buyout and peer effects. While most programs in the US are voluntary, a few mandatory ones exist in North Dakota, Iowa, and Texas. With data on both mandatory and voluntary buyouts, I isolate the peer effects on flood mitigation decisions in voluntary buyout programs to answer the questions: Does social connectedness increase contiguous participation in flood buyout programs, and what are the economic consequences of this increased participation?

My findings are of interest to government aiming to increase participation in buyout programs. Governments can strategically leverage social networks to influence communities, and target networks for more effective buyout campaigns. Furthermore, peer influence could have a multiplier effect, as individuals shape each other's decisions. Government agencies can harness peer effects to accelerate the adoption of managed retreat.

**References**

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