

Research Question

■ Motivation:

- 1 social capitals often plays essential roles in shaping how people make uses of other forms of capitals/resources through linkages and structures of social networks.
- 2 In terms of employment situations, it's generally assumed to be true that higher level of social capitals can lead to more efficient use of information about labor market and reduce the costs on both sides of the market.
- 3 In studies of local social networks across developing countries, researchers have found significant results of informal insurance that embedded in people's social networks where insurance institutions are not been developed or much less accessible.
- 4 We are curious about how the social networks affect the regional results of Unemployment Insurance (UI) benefit claim.

■ Question:

My general question here is- *Does aggregation of regional social capital through networks make up for unclaimed unemployment insurance benefits?*

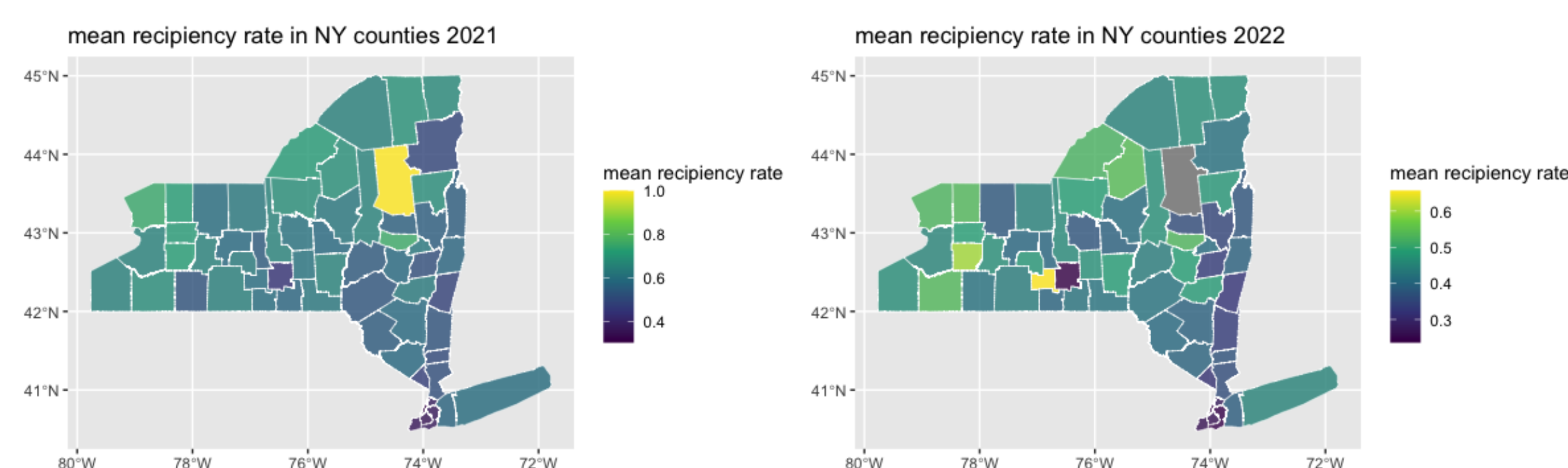
Relevant Literature

■ Theory-based:

- 1 Networks in the Understanding of Economic Behaviors[7]
- 2 Informal insurance on social networks [2]

■ Empirical-based:

- 1 Social capital, friendship networks, and youth unemployment[6]
- 2 Macro-level analysis of social capital and unemployment in Europe [5]
- 3 UI Take-up and eligibility [1]
- 4 Social capital atlas project [3][4]



Data

■ Social Capital Data

- The social capital statistics come from the large-scale data project Social Capital Atlas.
- The dataset is in cross-section data form where the first column is each US county and other columns are specific statistics using Facebook data (aged between 25 and 44 who reside in the United States, were active on the Facebook platform at least once in the prior 30 days, have at least 100 U.S.-based Facebook friends, and have a non-missing residential ZIP code as of May 2022) except population variables.

■ Unemployment and UI Data

- The unemployment data we have collected is from New York Department of Labor's Local Area Unemployment Statistics program where it provides employment, unemployment, labor force, and unemployment rate data.
- We collect monthly data form across 63 counties in 2021-22. The variables include number of beneficiaries and total amount of benefits.

Method

- **Panel Data:** We select economic connectedness, fraction of closed triangles (clustering), volunteering rate from social capital data and UI data by year-month to construct the panel data.
- **Time Fixed-Effect:** Controlling for variables that are constant across entities but vary over time.

Results

| Dependent Variable: | Average takeup rate | | |
|---|---------------------|---------------------|----------------------|
| Model: | (1) | (2) | (3) |
| <i>Variables</i> | | | |
| Constant | 0.079 (0.060) | | |
| ec county | -0.009 (0.062) | -0.014 (0.053) | -0.024 (0.037) |
| clustering county | 4.34*** (0.350) | 4.28*** (0.318) | 4.19*** (0.257) |
| volunteering rate county | -0.496** (0.188) | -0.484** (0.162) | -0.464*** (0.102) |
| <i>Fixed-effects</i> | | | |
| Year | | Yes | Yes |
| Month | | | Yes |
| <i>Fit statistics</i> | | | |
| Observations | 1,454 | 1,454 | 1,454 |
| R ² | 0.10077 | 0.31229 | 0.68439 |
| Within R ² | | 0.12503 | 0.23015 |
| <i>Heteroskedasticity-robust standard-errors in parentheses</i> | | | |
| <i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i> | | | |

Model

Base Model:

$$Y_{takeup-rate} = \alpha_i + \beta_1 X_{sec_{it}} + \beta_2 X_{clustering_{it}} + \beta_3 X_{volunteering_{it}} + U_{it}$$

where α_i is the sum of constant term and unobserved entity-invariant heterogenities across time : $\alpha_i = \beta_0 + \beta Z_i$

The base model can be expressed as a regression model containing $n - 1$ dummy regressors and a constant:

$$Y_{it} = \beta_0 + \beta_1 X_{sec_{it}} + \beta_2 X_{clustering_{it}} + \beta_3 X_{volunteering_{it}} + \gamma_2 D2_t + \gamma_3 D3_t + \dots + \gamma_T D T_t + \mu_{it}$$

Discussion

- The average level of individual EC (economic connectedness) of low-SES (below-median) members of that community doesn't really play roles in affecting the average UI take-up rates.
- Limitation on data availability and potential endogeneity problems on social networks.

Reference

- [1] Stéphane Auray and David L Fuller. "Eligibility, experience rating, and unemployment insurance take-up". In: *Quantitative Economics* 11.3 (2020), pp. 1059–1107.
- [2] Francis Bloch, Garance Genicot, and Debraj Ray. "Informal insurance in social networks". In: *Journal of Economic Theory* 143.1 (2008), pp. 36–58.
- [3] Raj Chetty et al. "Social capital I: measurement and associations with economic mobility". In: *Nature* 608.7921 (2022), pp. 108–121.
- [4] Raj Chetty et al. "Social capital II: determinants of economic connectedness". In: *Nature* 608.7921 (2022), pp. 122–134.
- [5] Markus Freitag and Antje Kirchner. "Social capital and unemployment: A macro-quantitative analysis of the European regions". In: *Political studies* 59.2 (2011), pp. 389–410.
- [6] Martin Hällsten, Christofer Edling, and Jens Rydgren. "Social capital, friendship networks, and youth unemployment". In: *Social Science Research* 61 (2017), pp. 234–250.
- [7] Matthew O Jackson. "Networks in the understanding of economic behaviors". In: *Journal of Economic Perspectives* 28.4 (2014), pp. 3–22.

Acknowledgement

This work is inspired by Prof. Coombs' research on unemployment insurance and connections with my own research interests on social networks.