

Neighborhood Effects: A Very Brief Introduction

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Graduate Urban Economics, Lecture 10
May 6th, 2023

“Neighborhood and Network Effects,” Topa and Zenou,
Handbook of Regional and Urban Economics, 2015

Neighborhood Effects as Non-Market Interactions

Important question across the social sciences is how *non-market* social interactions between agents affect economic outcomes

Broad literature encompassing peer effects in education, labor market referrals and networks, social network effects on health behaviors, reviews and expert opinions on products purchases, herding in investment decisions, and many other subjects

One well-studied form of this question asks whether neighborhoods affect the outcomes of residents, and whether it's possible to improve outcomes by moving people to better neighborhoods

Neighborhood effects arise from both social interactions between residents and place-specific effects (ex: local institutions and businesses)

Common Topics in Neighborhood Effects

Does the neighborhood in which a child grows up affect their lifetime income? Educational attainment? Health?

Relatedly, does childhood neighborhood affect behavior? For example, are children who grew up in a high crime neighborhood more likely to commit a crime themselves?

Do residents recommend each other for jobs (job referrals), or provide notice of new employment positions?

Do job referrals also depend on ethnicity, race, or other demographic characteristics?

Do new immigrants benefit from residing in a neighborhood with co-ethnics (ex: job and housing networks), or does this slow language acquisition and leave them isolated?

Mechanisms for Neighborhood Effects

Neighborhood effects can come from three different mechanisms:

1. Social interactions among residents (endogenous peer effects)
2. Characteristics of the residents (“contextual effects”)
3. Correlated shocks

Example: we want to know whether moving a child to a neighborhood where most children attend college will increase the likelihood of college attendance

It's possible that interactions with studious and motivated children in the neighborhood makes a child work hard to attend college

Another possibility: seeing many college educated adults in the neighborhood changes a child's perspective on college

Lastly, it could be simply all neighborhood children attend the same school or private tutoring center

Identifying Neighborhood Effects: Reflection Problem

Early literature on neighborhood effects regressed individual outcomes $y_{i,r}$ on average outcomes in the neighborhood $E(y_r)$, average characteristics of residents $E(x_r)$, and individual characteristics $x_{i,r}$

$$y_{i,r} = \phi_2 E(y_r) + \gamma E(x_r) + \beta x_{i,r} + \epsilon_{i,r} \quad (11)$$

Assume that $\epsilon_{i,r}$ is i.i.d., can you see any problems with this approach?

Mean outcomes and characteristics must be collinear: $E(y_r) = \left(\frac{\gamma + \beta}{1 - \phi_2}\right) E(x_r)$

Reflection problem (Manski 1993): impossible to distinguish interaction effects ϕ_2 from contextual effects γ by regressing individual outcomes on means

Policy relevant difference: interaction effects have social multipliers.

Ex: helping a neighborhood child to go to college helps the other children through interaction effects. If neighborhood effects are due to contextual effects, then no multiplier

Identifying Neighborhood Effects: Sorting and Correlated Shocks

Another issue is that neighborhood choice is endogenous

Ex: parents who move to a neighborhood with high achieving students may also provide substantial educational support to their children

A final issue is “correlated shocks”: neighborhood outcomes may be similar not due to peer effects, or contextual effects, but simply because people in the same neighborhood are affected by the same neighborhood level shocks

Ex: a high quality tutoring center opens up in the neighborhood

Note that many neighborhood papers are interested in estimating a general neighborhood effect and do not try to separate peer effects, contextual effects, and correlated shocks. (ex: Chetty Hendren papers)

However, these papers must still deal with the sorting issue—what are possible identification strategies?

Literature on Neighborhood Effects

Exogenous Assignment to Neighborhoods: Refugee Programs

Many countries have refugee settlement agencies that place new refugees into different locations somewhat independent of the characteristics of the refugees

These settlement policies can be used as a source of exogenous variation in location characteristics

Beaman (ReStud 2012) looks at refugees resettled in US, finds that new refugees are less likely to find a job in a place where many similar refugees were recently located (competition for jobs)

However, also finds that refugees placed into communities with a long history of resettlement (but not many recent refugees) are more likely to find a job

Edin et al. (2003) and Aslund et al. (2011) uses a Swedish refugee program to examine effect of ethnic neighborhood size on earnings and educational attainment, finding effects increasing in ethnic concentration.

Also see Damm (2009, 2014) for evidence using a refugee program in Denmark

Random Assignment at Very Small Spatial Level

Bayer, Ross, and Topa (JPE 2008) study whether neighbors recommend each other for jobs

Authors argue that while location choice is endogenous, at a very granular spatial level it is random

Ex: people may choose overall neighborhoods but the exact street or block is random due to limited availability of housing, thus neighbors are random

Specifically, they compare the likelihood of two residents of the same block to work at the same location, compared to two residents in the same *block group*, but not the same block

Clever strategy and easy to implement with good data. Influenced many subsequent papers on job referrals, including Hellerstein et. al. (2011), Hellerstein et al. (2014), and Schmutte (2014).

Also see Bayer, Mangum, Roberts (AER 2021) investigating neighborhood effects on housing investment.

Experimental Variation from Moving Programs

Some countries have policies that try to help residents in poor or high crime neighborhoods move to better neighborhoods

Most famous is “Moving to Opportunity” program in US

Participants in high-poverty neighborhoods volunteered and were randomly assigned to three treatments: i) no new assistance ii) housing vouchers with no geographical restrictions iii) housing vouchers that could only be used in low-poverty neighborhoods

Program studied in multiple papers (Kling et al. QJE 2005, Kling et al. ECMA 2007) and found no effects on economic outcomes, but some evidence for positive effects on mental health

Recent paper by Chetty and Hendren (AER 2015) do find positive effects that depend on exposure time in new neighborhood

Chetty and Hendren Neighborhood Work

A series of papers by Chetty, Hendren, and co-authors have demonstrated that neighborhoods have important effects on children that vary with their exposure (how young were they when moved to new neighborhood)

These papers have launched a resurgence of interest in neighborhood effects

Chetty Hendren (QJE 2018, part 1) use administrative data (tax records) to look at earnings of adults who moved to new neighborhoods as children

They compare siblings within a family that moves to a new location, thus providing variance in the exposure to the new location

Find that earnings increase linearly at 4% per year of exposure, converging to difference between old neighborhood and new neighborhood

Lots to learn from this paper and follow-up work. If interested, see Chetty's website for summaries, papers, and maps