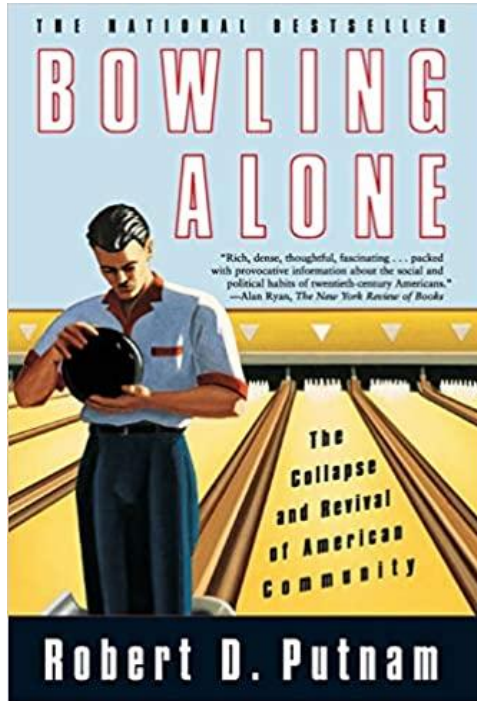# Spatially concentrated social capital of urban residents

Ádám József Kovács, Sándor Juhász, Eszter Bokányi, Balázs Lengyel

Social capital and social networks

Social Capital in the Creation of Human Capital[1]

James S. Coleman
University of Chicago

In this paper, the concept of social capital is introduced and illustrated, its forms are described, the social structural conditions under which it arises are examined, and it is used in an analysis of dropouts from high school. Use of the concept of social capital is part of a general theoretical strategy discussed in the paper: taking rational action as a starting point but rejecting the extreme individualistic premises that often accompany it. The conception of social capital as a resource for action is one way of introducing social structure into the rational action paradigm. Three forms of social capital are examined: obligations and expectations, information channels, and social norms. The role of closure in the social structure in facilitating the first and third of these forms of social capital is described. An analysis of the effect of the lack of social capital available to high school sophomores on dropping out of school before graduation is carried out. The effect of social capital within the family and in the community outside the family is examined.
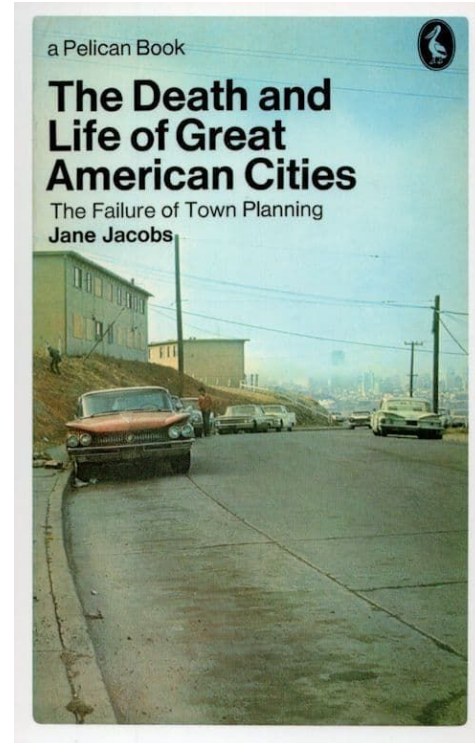
There are two broad intellectual streams in the description and explanation of social action. One, characteristic of the work of most sociologists, sees the actor as socialized and action as governed by social norms, rules, and obligations. The principal virtues of this intellectual stream lie in its ability to describe action in social context and to explain the way action is shaped, constrained, and redirected by the social context.

The other intellectual stream, characteristic of the work of most economists, sees the actor as having goals independently arrived at, as acting independently, and as wholly self-interested. Its principal virtue lies in
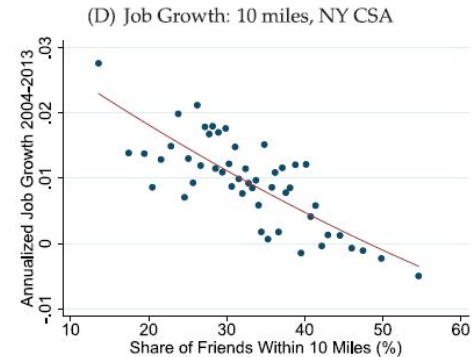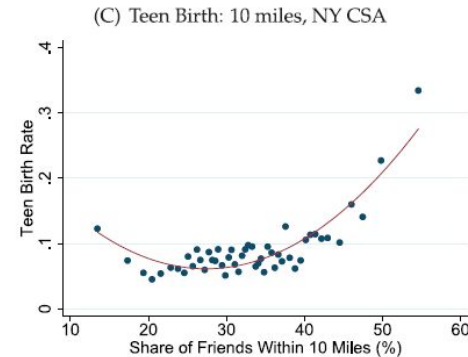
Social capital and social networks

Geographic constraints
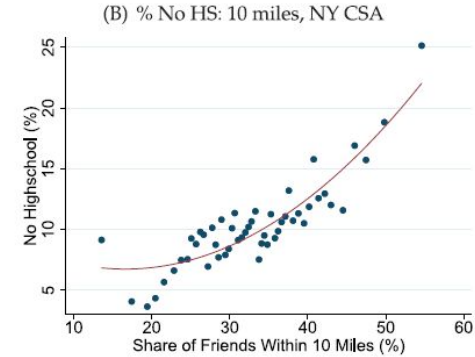
a Pelican Book

The Death and Life of Great American Cities

The Failure of Town Planning

Jane Jacobs

Social capital and social networks

Geographic constraints

Socio-economic dimension

Bailey et al. (2020) JUE
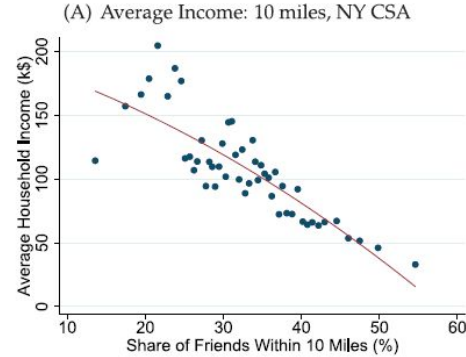
Social capital and social networks

Geographic constraints

Socio-economic dimension

Micro-geography of individual social capital in cities correlate with the income of residence?

Data

Sándor Juhász
@sandor_juhasz

Can we explain how relatedness of technologies evolves over time? Our new paper in Papers in Regional Science with @TBroekel and @rboschma identifies the drivers behind the widely used concept of #relatedness rsaiconnect.onlinelibrary.wiley.com/doi/full/10.11... Quick thread 1/3

Papers in Regional Science

Explaining the dynamics of relatedness: The role of co–lo...
Relatedness has become a key concept for studying the diversification of firms, regions and countries. However, ...
🔗 rsaiconnect.onlinelibrary.wiley.com

1:42 PM · Sep 1, 2020 · Twitter Web App

View Tweet activity

Geolocation possibility

Sándor Juhász
@sandor_juhasz

Researcher at NETI Lab and ANET Lab | Interested in data magic, networks, innovation and (economic) geography

📍 Hungary   🔗 sandorjuhasz.com   📅 Joined August 2017

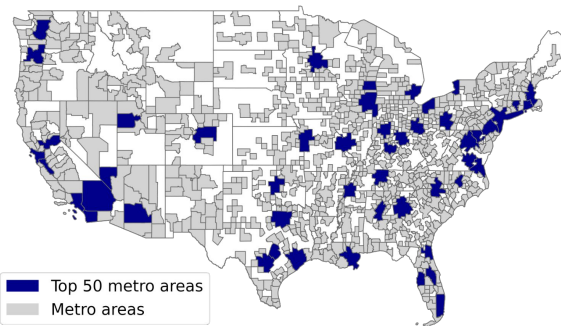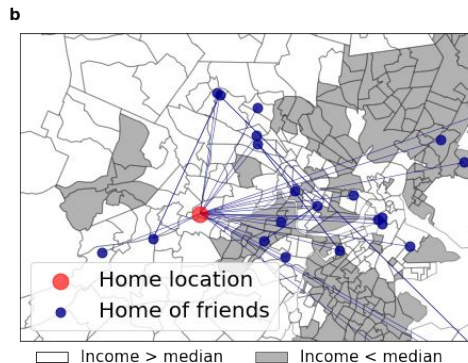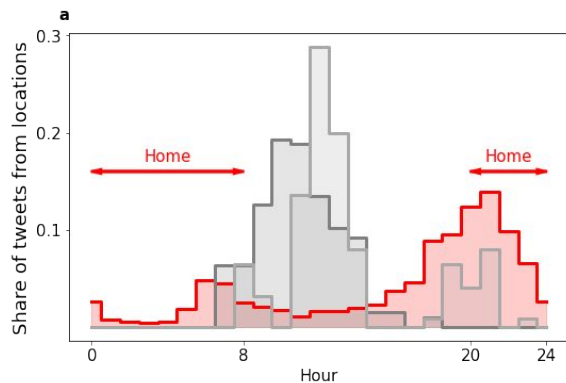**345** Following   **211** Followers

Connections on the site

Tweets   Tweets & replies   Media   Likes

Data

a

Share of tweets from locations

Home   Home

Hour

b

● Home location
● Home of friends

☐ Income > median   ▨ Income < median

■ Top 50 metro areas
☐ Metro areas

Observed users

New York, Los Angeles, Chicago, Dallas, Philadelphia, Houston, Washington, Miami, Atlanta, Boston, San Francisco, Detroit, Riverside, Phoenix, Seattle, Minneapolis, San Diego, St. Louis, Tampa, Baltimore, Denver, Pittsburgh, Portland, Charlotte, Sacramento, San Antonio, Orlando, Cincinnati, Cleveland, Kansas City, Las Vegas, Columbus, Indianapolis, San Jose, Austin, Virginia Beach, Nashville, Providence, Milwaukee, Jacksonville, Memphis, Oklahoma City, Louisville, Hartford, Richmond, New Orleans, Buffalo, Raleigh, Birmingham, Salt Lake City
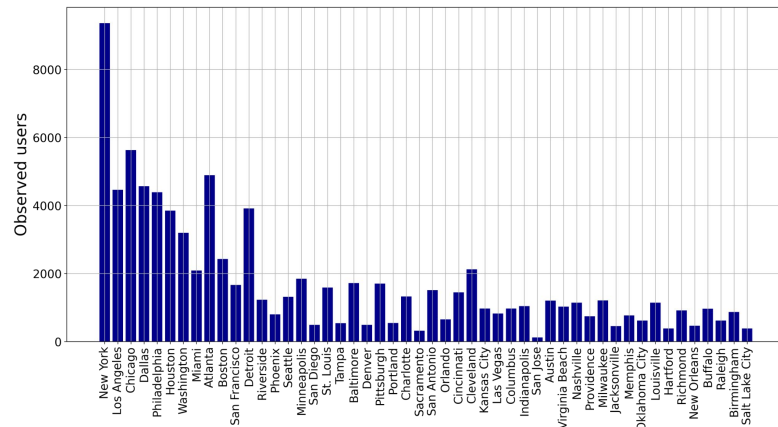
1% of all tweets and
at least 200 tweet of selected users daily

Focus on users with frequent geolocated
tweets

Overall more than 80,000 observations
from the top 50 metros in the US

Key measures

$$Sof_r = \frac{d_r}{D}$$

$$C_r = \frac{2L_i}{k_i(k_i - 1)}$$

	Full graph	Income < median	Income > median
Degree in 10 km	8	4	4
Share of ties in 1 km	0.125	0.25	0
Share of ties in 5 km	0.375	0.25	0.5
Share of ties in 10 km	1	1	1
Clustering in 1 km	-	-	-
Clustering in 5 km	0.333	-	1
Clustering in 10 km	0.143	0.6	0.6
Support in 1 km	-	-	-
Support in 5 km	0.667	-	1
Support in 10 km	1	1	1
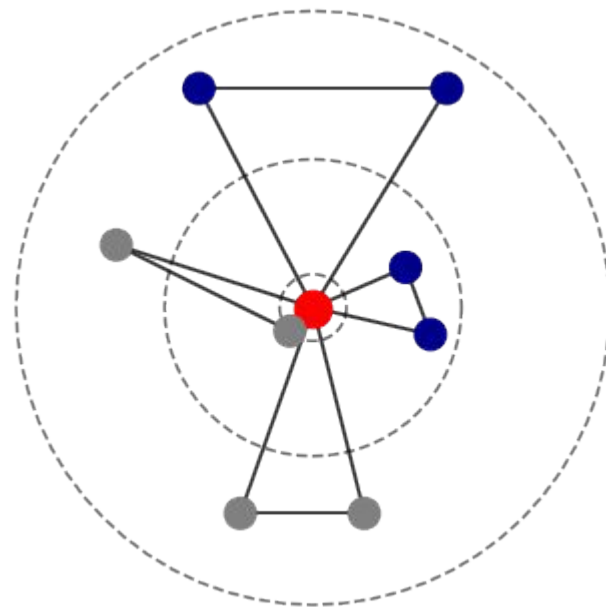
$$Sup_r = \frac{\left|\left\{j \in N_i(g) : [g^2]_{ij} > 0\right\}\right|}{d_r}$$

Spatial concentration of social ties
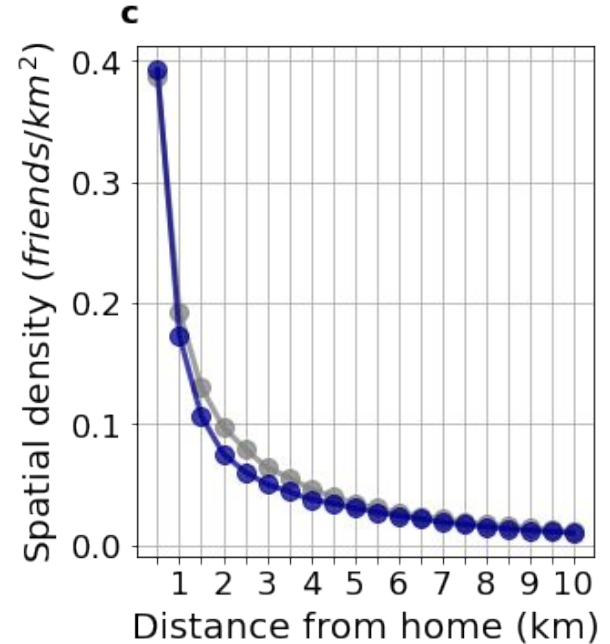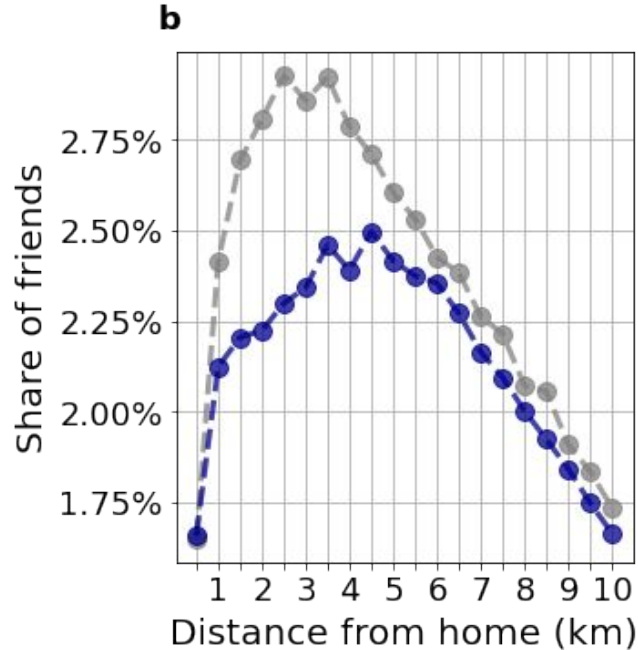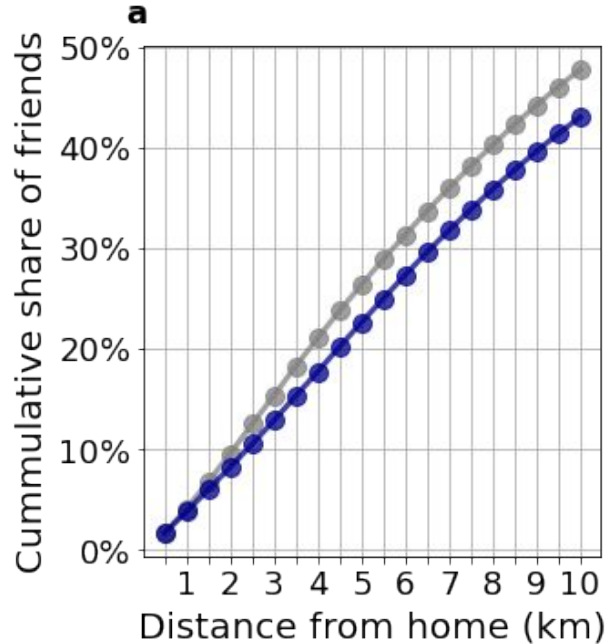
Social capital related measures within 10 km
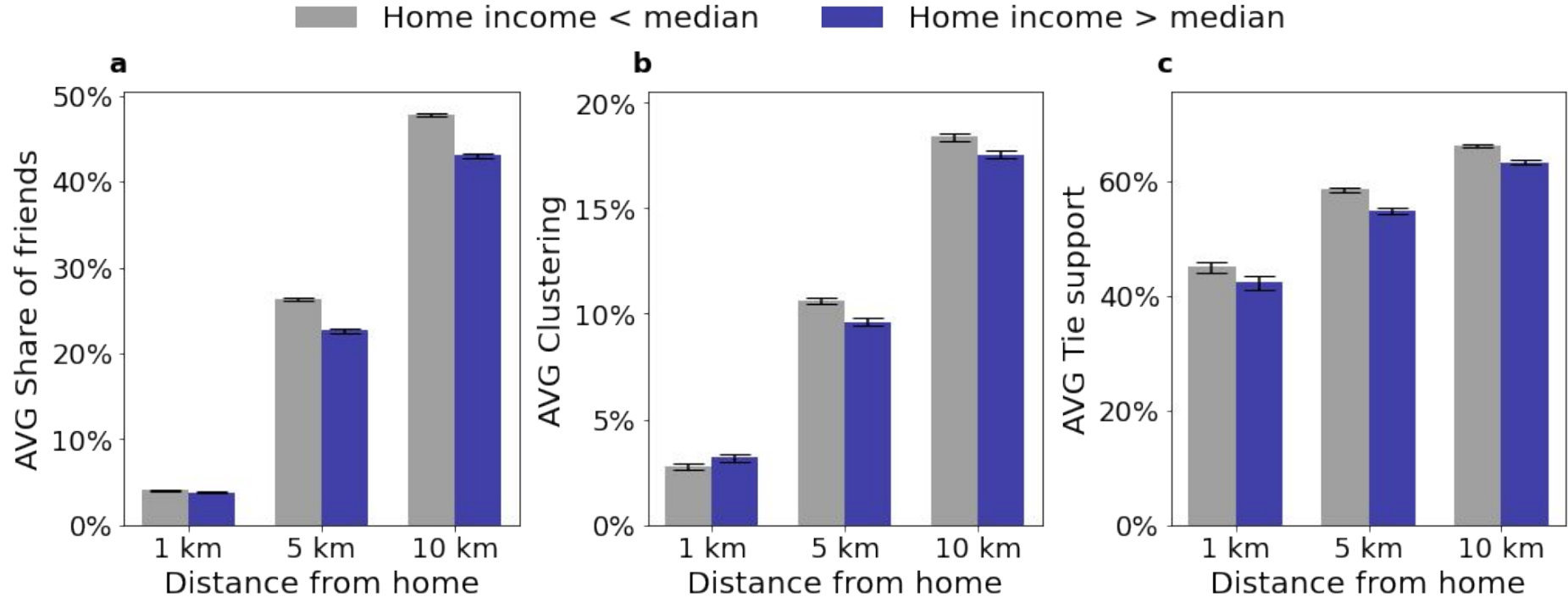
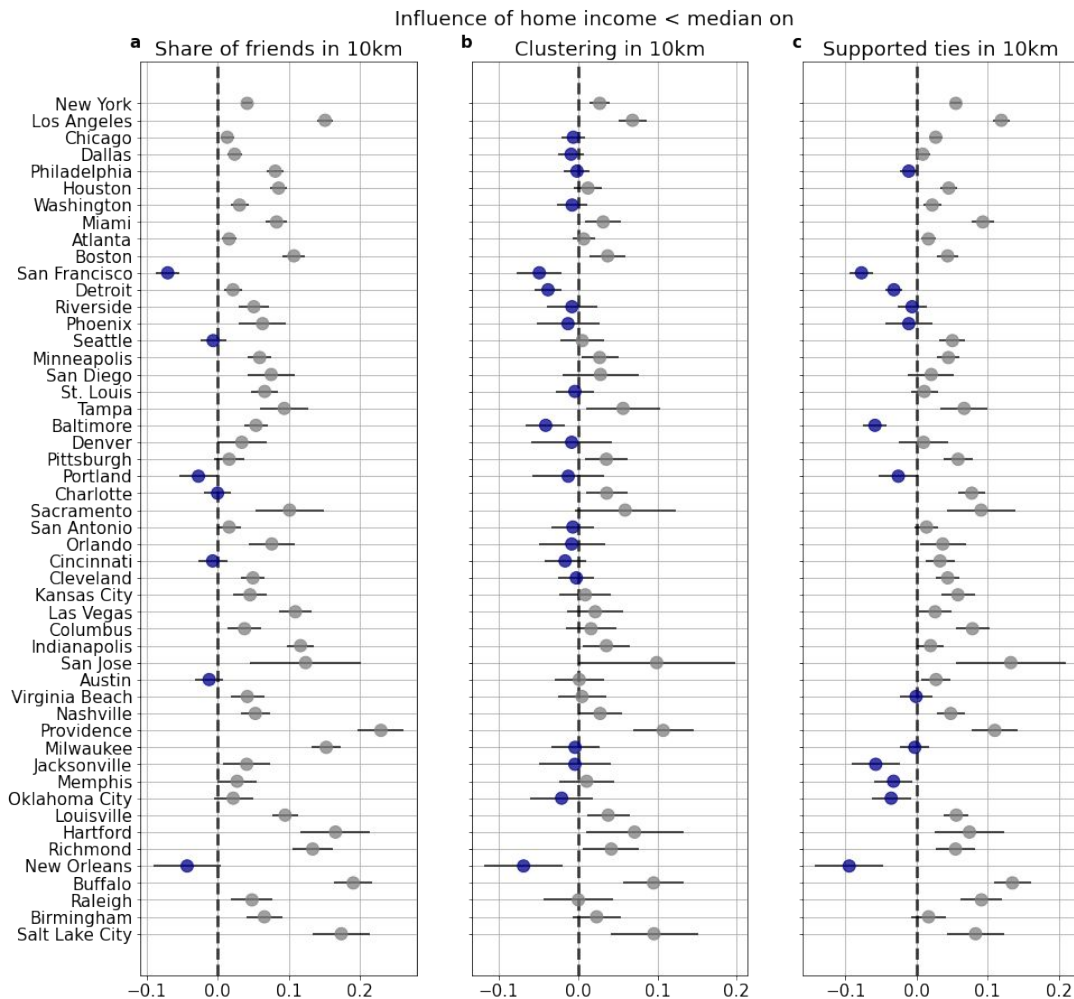# Social capital concentration in the top 50 US metro areas

Share of friends
Clustering
Supported ties

Influence of home income < median on

a Share of friends in 10km **b** Clustering in 10km **c** Supported ties in 10km

Generalisation to continuous income

	In 10 km from home location		
	Share of friends	Clustering	Tie support
	(1)	(2)	(3)
Home income (log)	−0.106***	−0.031***	−0.075***
	(0.004)	(0.003)	(0.006)
Home population (log)	−0.057***	0.013***	0.061***
	(0.004)	(0.003)	(0.006)
Degree	−0.001***	−0.001***	0.002***
	(0.0001)	(0.00004)	(0.0001)
Constant	1.042***	0.242***	0.638***
	(0.024)	(0.017)	(0.033)
Metro FE	Yes	Yes	Yes
Observations	86,177	74,900	74,900
R^2	0.055	0.039	0.027
Adjusted R^2	0.054	0.038	0.026
Note:			*p<0.1; **p<0.05; ***p<0.01

Homophily in social capital related measures

Discussion

We map social capital in urban space through online social media data

Individual level social network features related to social capital show high spatial concentration inside cities

This pattern is stronger for people from lower income neighborhoods

This may foster feedback loops of segregation and income inequality in cities encoded in the social networks

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Thank you for your attention!

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Arxiv: https://arxiv.org/abs/2107.13474

Github: https://github.com/sandorjuhasz/ties-around-home

ANET Lab: https://anet.krtk.mta.hu/ or @anetilabs

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Michael Bailey et al. "Social connectedness in urban areas". In: Journal of Urban Economics 118 (July 2020), p. 103264. doi: 10.1016/j.jue.2020.103264.