

Social capital in the United Kingdom: evidence from six billion friendships

Research summary

By **Tom Harris** (Opportunity Insights), **Shankar Iyer** (Meta), **Thomas Rutter** (Stanford), **Guanghua Chi** (Meta), **Drew Johnston** (Meta,) **Patrick Lam** (Meta,) **Lucy Makinson** (BIT), **Antonio Silva** (BIT), **Martin Wessel** (BIT), **Zoe Liou** (Stripe Partners), **Yingcan Wang** (Stripe Partners), **Qamar Zaman** (Stripe Partners) and **Michael Bailey** (Meta)

Key findings

- **UK friendships bridge economic divides.** High-income people in the UK have more high-income friends, but social networks are less stratified by class than in the US. The poorest 50% of people in the UK still have about half (47%) of their friendships with high-income people, compared to about 39% in the US.
- **Friendships across economic lines are more common in the South of England, particularly in the areas around London.** In contrast, cross-class friendships are less common in regions such as South Wales, parts of Northern England, the Scottish Central Belt, and Northern Ireland.
- **Communities with higher rates of friendship between low- and high-income individuals have higher rates of upward mobility.** Low-income children who grew up in the top 10% of the most economically connected local authorities in England earn 38% more per year on average (£5,100) as adults relative to low-income children in the bottom 10% of local authorities.
- **Most friendships form locally and in schools, while hobby groups and workplaces promote cross-class friendships among their members.** Residential segregation often limits the amount of cross-class interactions and connections in neighbourhoods and schools. Workplaces and hobby groups promote more cross-class friending among their members, but people typically only form a small portion of their friendships in these settings.
- **Social capital is associated with higher subjective wellbeing.** People with more high-income friends, or a tightly-knit social circle, report higher happiness, life satisfaction, trust, and feelings of belonging. After controlling for personal income, people with the highest share of very high-income friends (1 in 5) report 5% higher happiness levels and 23% greater trust, compared to people with the lowest share of very high-income friends (1 in 40).
- **Data from Facebook can be used to measure economic mobility for the entire UK.** These measures are constructed by linking individuals on Facebook to their parents and line up well with existing measures of economic mobility in England.

The importance of social capital in the UK

Social capital – the network of personal and group-based relationships in a society – has long been thought to be an important factor in shaping economic opportunity. In the United States, Chetty et al. (2022) found that children from disadvantaged backgrounds tend to achieve higher incomes in adulthood in communities that foster more friendships between high- and low-income individuals.

In this study, we examine whether similar patterns hold in the United Kingdom. Our measures of social connection are based on data from Facebook for approximately 20 million UK residents (about 58% of the population aged 25–64). For each person in our sample, we estimate their income¹ and measure ties to others. We use this data to measure various types of social connections, from the cohesiveness of networks, to volunteering rates, to economic connectedness, which captures the frequency of friendships between individuals below and above the median of the income distribution². We then leverage administrative data on economic mobility in England (the UK Longitudinal Education Outcomes, or LEO, dataset) to study the relationship between community-level social capital and economic opportunity. Next, we explore the relationship between social capital and wellbeing by using a survey that collects information on individuals' life satisfaction, trust, and social support. Finally, we utilise data from Facebook to estimate economic mobility rates for the entire United Kingdom, extending the LEO data beyond England.

UK friendships bridge economic divides

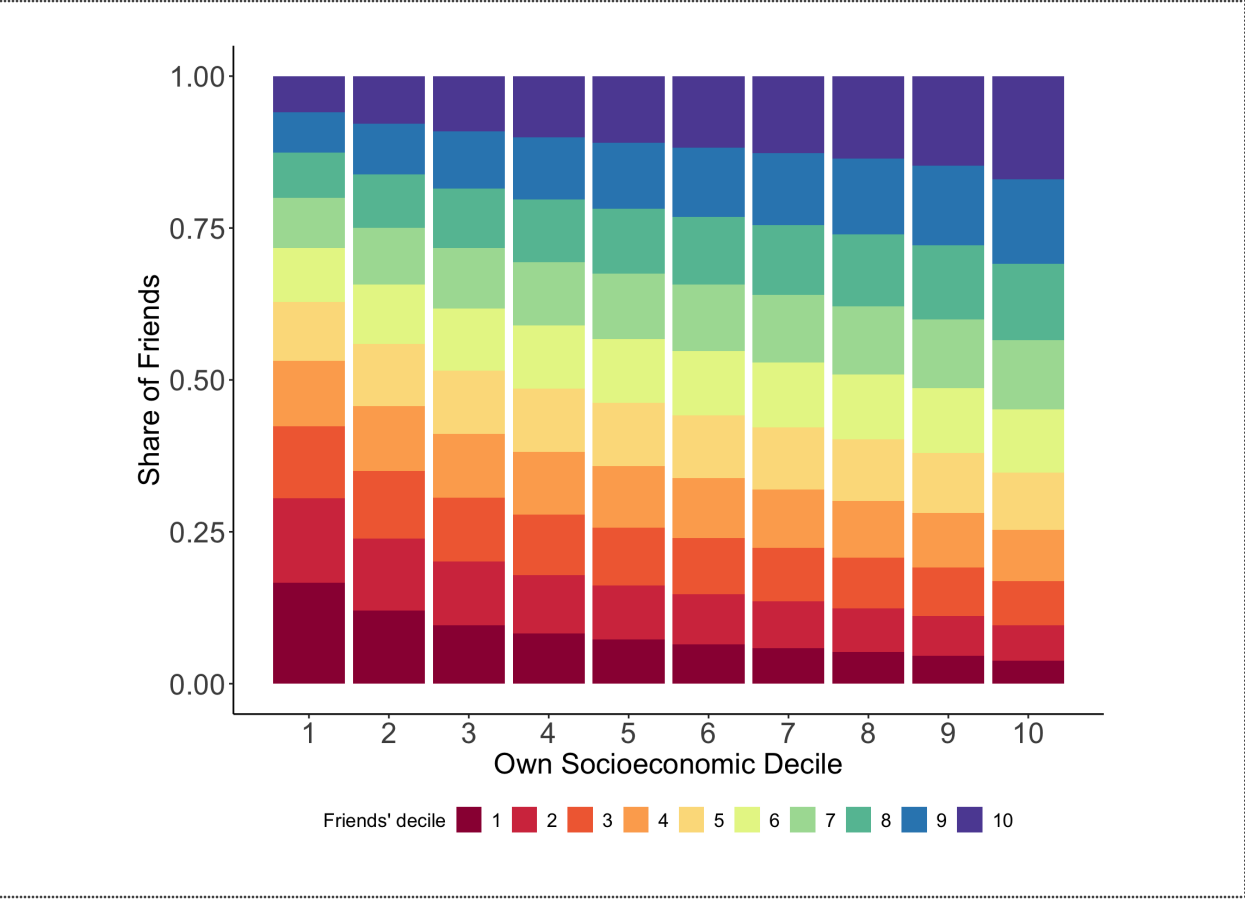
Individuals below the median of the income distribution (hereafter referred to as "low-income people") form nearly half (47%) of their friendships with those above the median (hereafter referred to as "high-income people") (Figure 1). In comparable US data, this figure is approximately 39% (Chetty et al., 2022).

¹ We estimate individuals' income using a machine learning model which predicts one's socioeconomic status using information such as their education, the area in which they live, and the cell phone that they use. We refer to this estimate of socioeconomic status as income for simplicity.

² We are sharing these social-connection metrics publicly on the Humanitarian Data Exchange to facilitate future research.

Even though many friendships in the UK cross class boundaries, social networks remain stratified by income. High-income people have a 28% higher share of high-income friends, and people in the top 10% of the income distribution have over three times the share of top-decile friends observed among those in the bottom 10%.

Figure 1: Average share of friends in each income decile, by the decile of a focal individual



Friendships across economic lines are more common in the South of England, particularly in the areas around London

Social capital varies widely across the UK's regions and community types. Affluent and metropolitan areas—particularly parts of London and its surrounding regions—show the highest levels of cross-class friendships. Meanwhile, post-industrial areas, such as parts of South Wales and North East England, tend to have much lower rates of social ties across economic lines.

Although areas with more high-income residents generally have greater economic connectedness, a high concentration of affluent individuals does not always result in higher levels of cross-class friendship. For example, Kingston upon Thames and Canterbury have similar levels of affluence, yet the share of high-income friends among low-income residents is 10% higher in Kingston upon Thames.

Beyond cross-class connections, other dimensions of social capital also differ across the United Kingdom. Rural communities tend to have more tightly knit networks, with higher rates of clustering, which measures the share of one's Facebook friends that are themselves friends with each other. Such areas also exhibit greater levels of civic engagement, as measured by the share of users who are members of at least one volunteering or activism group on Facebook (Figures 2 and 3).

Figure 2: Economic connectedness, clustering, and volunteering rates in the UK

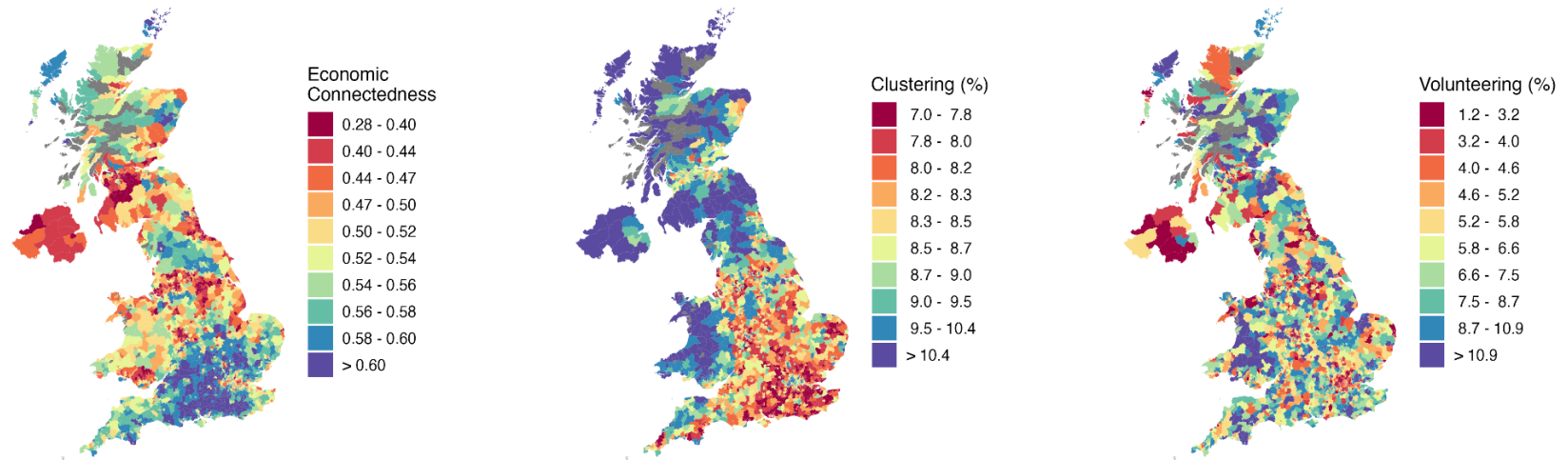
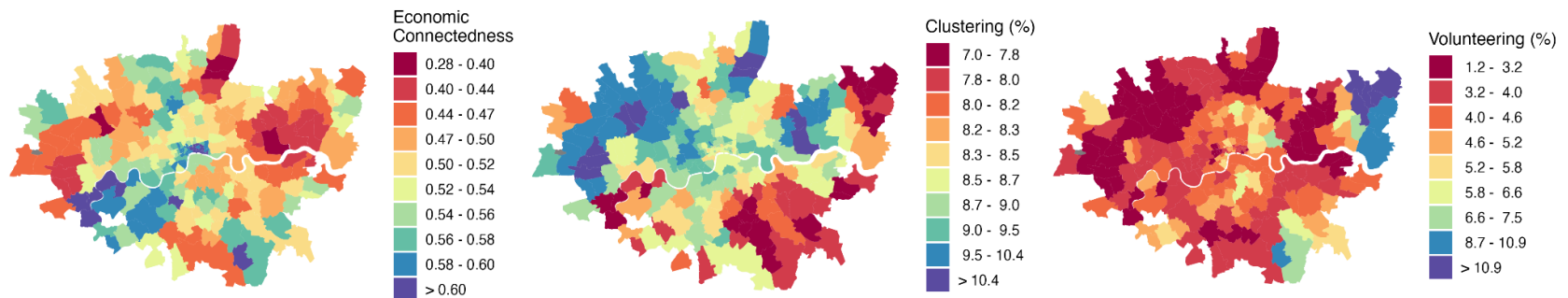


Figure 3: Economic connectedness, clustering, and volunteering rates in London



Communities with higher rates of cross-class friendships have higher rates of upward mobility

Our upward mobility dataset uses Longitudinal Education Outcomes (LEO) data to map earnings at age 28 for children who were eligible for Free School Meals at 16 across English local authorities and postcode districts.³ When this mobility data is combined with the Facebook-derived social-connection measures, areas with higher economic connectedness exhibit substantially higher upward mobility. Low-income children who grew up in the top 10% of the most economically connected local authorities earn 38% more per year on average (£5,100) as adults relative to low-income children who grew up in the bottom 10% of economically connected local authorities.

Among the types of social connectedness that we measure, economic connectedness is the strongest predictor of mobility in a multivariate regression (Figure 4). The strength of the relationship between economic connectedness and upward mobility is robust to controlling for area characteristics such as average income, education and health outcomes (Figure 5).

³ This dataset builds on the approach of Carneiro et al. (2020), which uses administrative data to measure the adult incomes of those who grew up in low income families (defined as those who received free school meals). We extend the estimates from that paper by incorporating additional cohorts, allowing us to improve the precision of the estimates and provide data at a finer granularity. These estimates are publicly available here. Low-population areas are excluded from these datasets.

Figure 4: Weighted regression of economic mobility from LEO data on various measures of social connection, by local authority

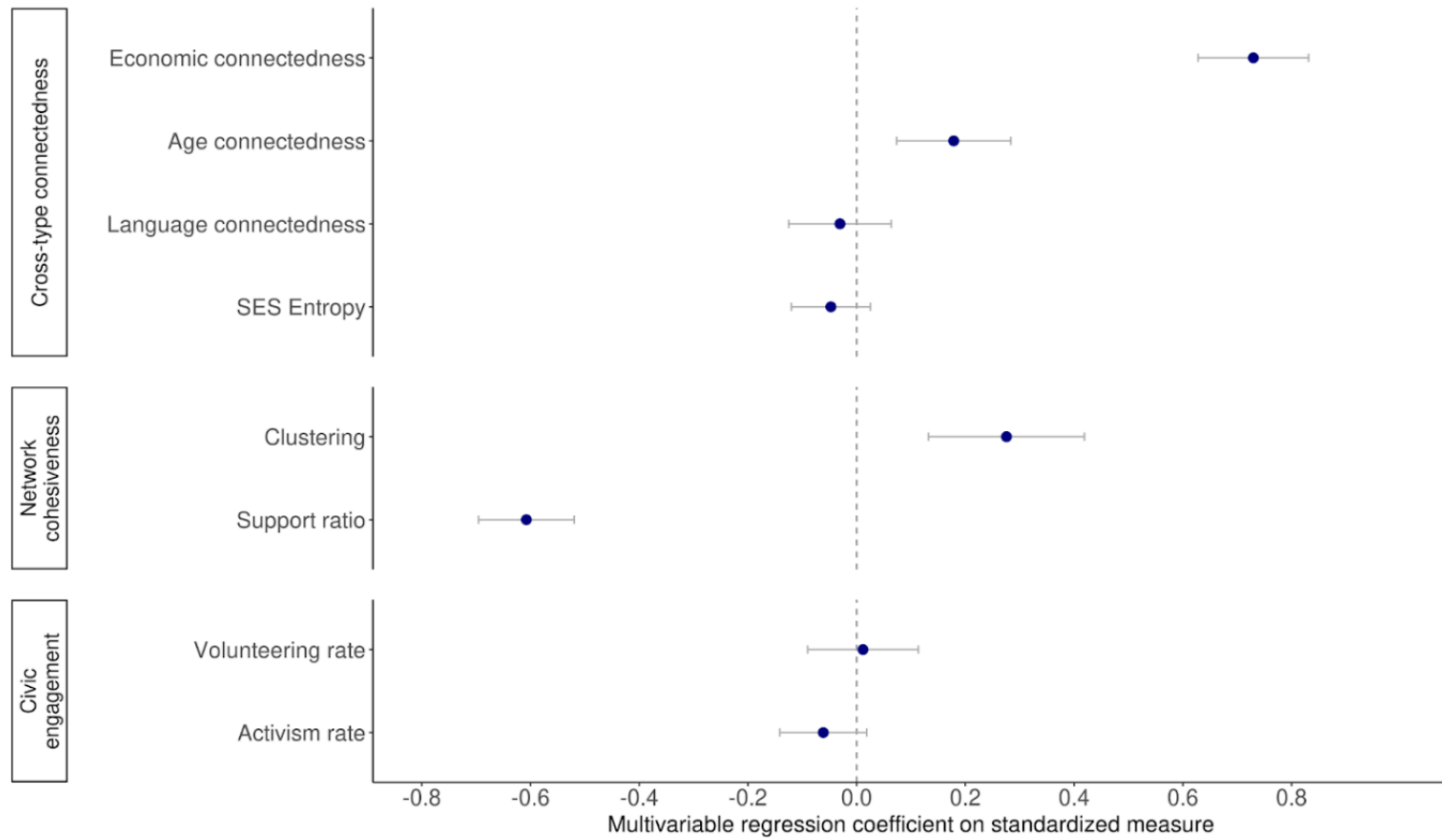
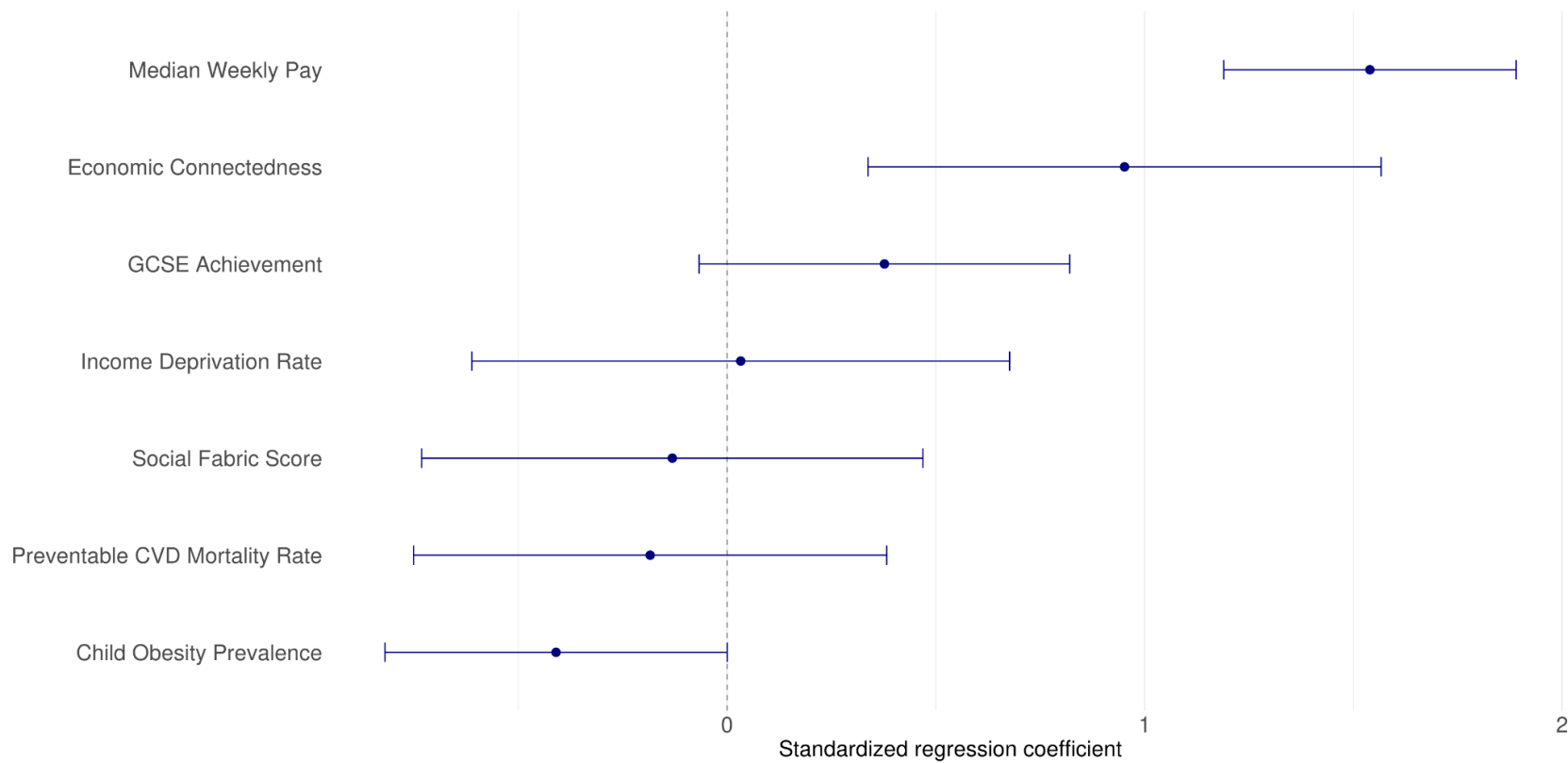


Figure 5: Weighted multivariate regression of economic mobility from LEO data on various area-level characteristics, by local authority



Most friendships form locally and in schools, while hobby groups and workplaces promote cross-class friendships among their members

We assign Facebook friendships to various contexts, including neighbourhoods, educational institutions, and hobby and recreation groups. Of the friendships that we are able to assign to a social context⁴, the largest share is made in the area in which an individual lives. A significant share of these friendships are also made in secondary schools, with smaller numbers formed in other communities (Figure 6).

Friendships across class lines depend on two key factors: exposure (the fraction of high-income people in a setting) and friending bias (the level of connection across class boundaries, conditional on being in the same setting). Exposure and friending bias vary dramatically across settings:

- **Neighbourhoods** and **secondary schools** are where a high share of total friendships are made. In neighbourhoods and secondary schools, low-income people tend to be exposed to a relatively low proportion of high-income people. Overall, friending bias tends to be much higher in neighbourhoods than in secondary schools.
- **Universities** often combine high levels of exposure with moderate levels of friending bias. A large share of students in most universities are high-income, so low-income students who attend university befriend high-income peers in these contexts at a higher rate, despite the fact that friendships are more likely to form among people of similar socioeconomic status.
- In **hobby and recreation groups** such as sports, fitness, and arts groups, low-income people encounter high-income people at a somewhat lower rate than in other contexts, but bias is considerably lower in these settings. High- and low-income individuals in these groups form cross-class friendships at a higher rate than would be expected, given the rate at which they encounter each other in these spaces.

⁴ The research team was able to match 49% of the friendships of low-income individuals and 43% of the friendships of high-income individuals to social settings.

Figure 6: Average percentage of friendships that we can assign to each context

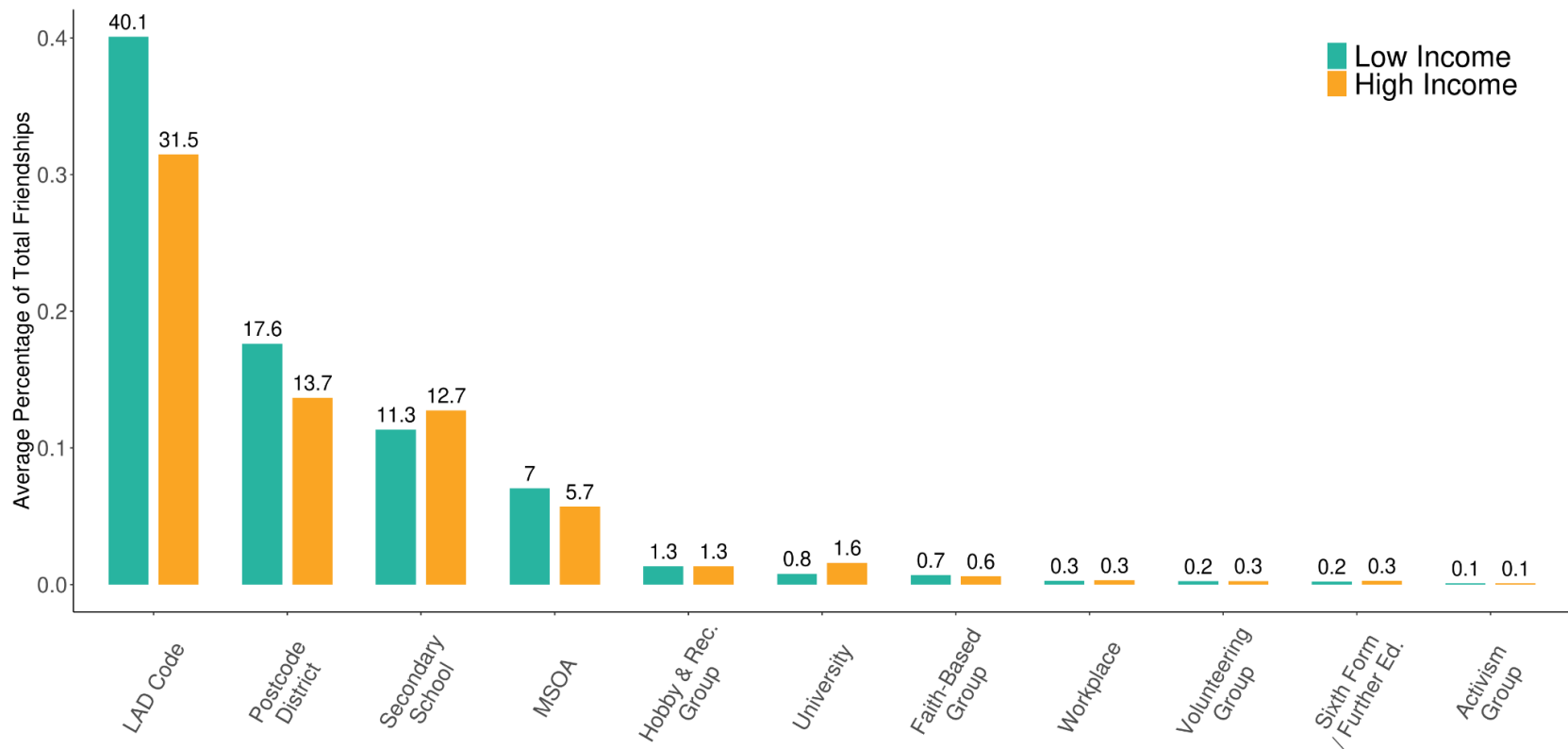
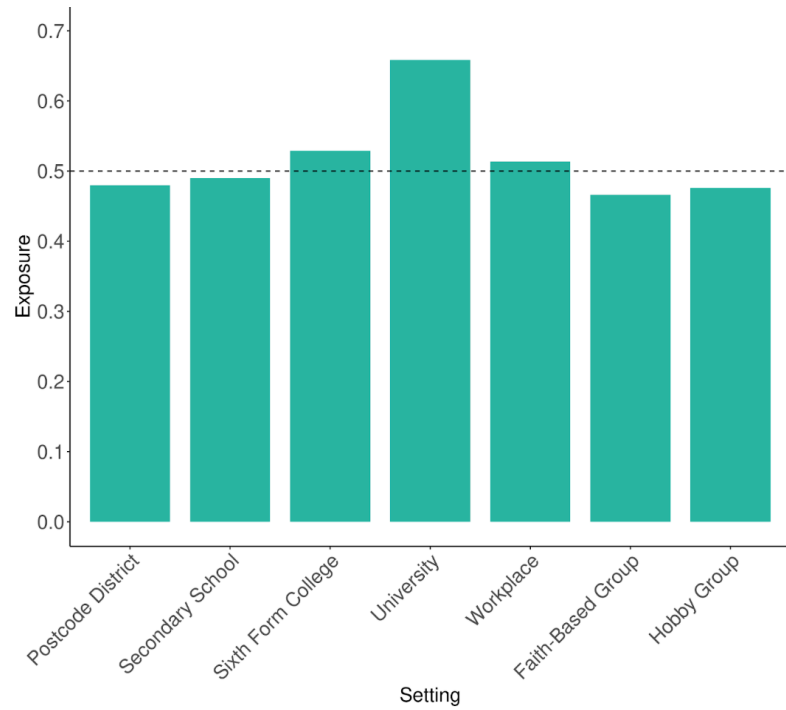
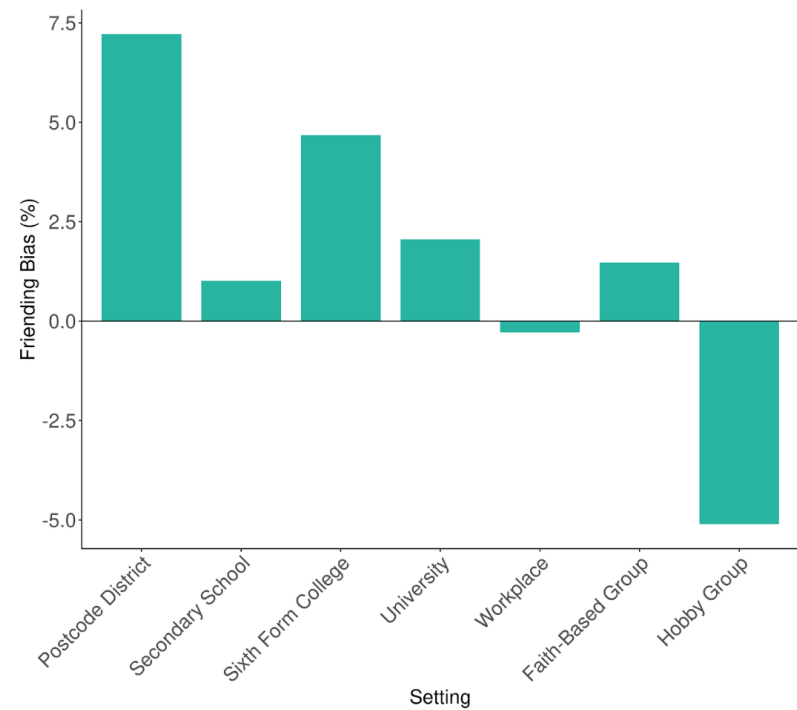


Figure 7: Exposure and friending bias for low-income individuals by setting



(a) Exposure by setting

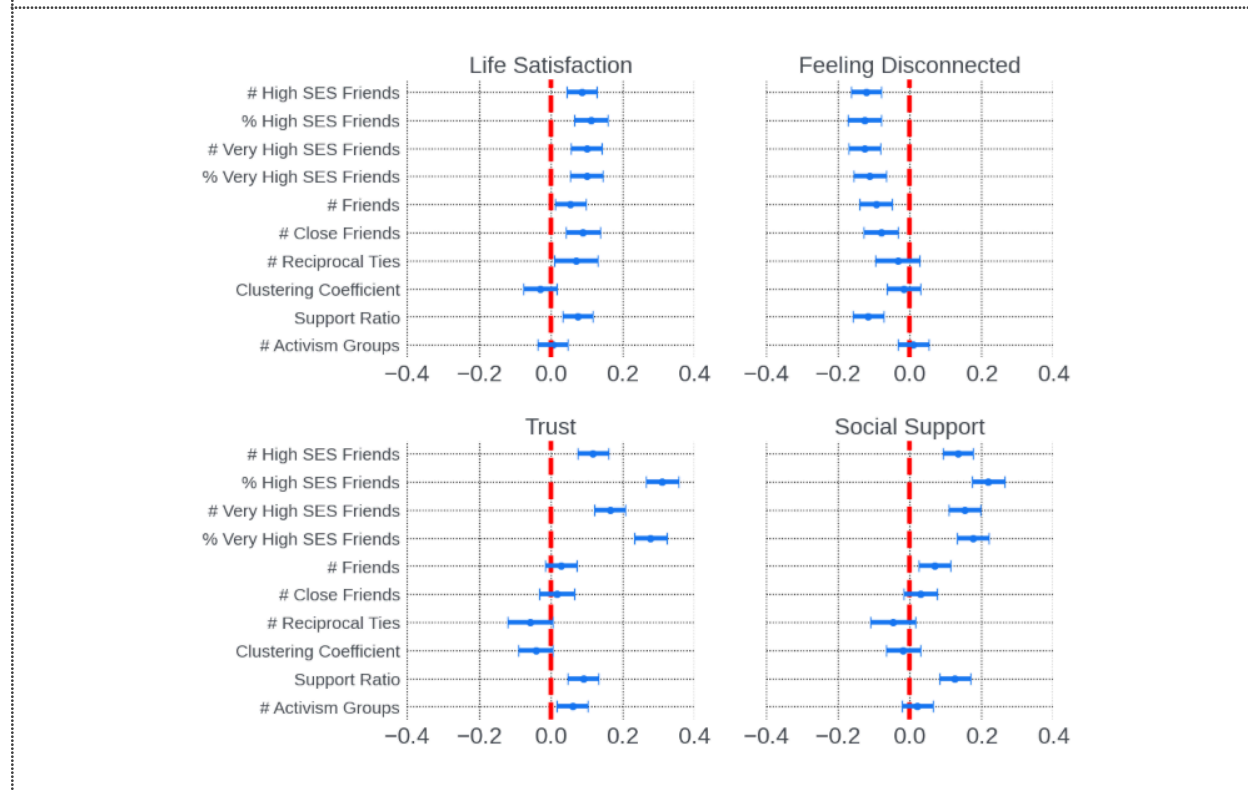


(b) Friending bias by setting – negative values indicate more high-income friends than predicted by chance

Social capital is associated with higher subjective wellbeing

Beyond economic mobility, social capital has important associations with individuals' self-reported wellbeing (and related outcomes). In a survey of roughly 4,000 adult Facebook users in the UK, those who have more friends – especially more friends from high-income backgrounds – and a more tightly knit network of friends report higher levels of happiness and life satisfaction, lower levels of feeling isolated or left out, higher levels of trust, and are more likely to report having social support for assistance or companionship. These patterns persist even when we control for an individual's income, age, and gender. After accounting for the effects of personal income, individuals with the highest proportion of very high-income friends (about 1 in 5 of their friends are in the top decile of the SES distribution) reported 5% higher happiness levels and 23% greater trust compared to those with the lowest (about 1 in 40 friends of their friends in the top decile).

Figure 8: Regression of survey responses against each social capital measure in a model that controls for age, gender, and income – each bar corresponds to a separate regression



Data from Facebook can be used to measure economic mobility for the entire UK

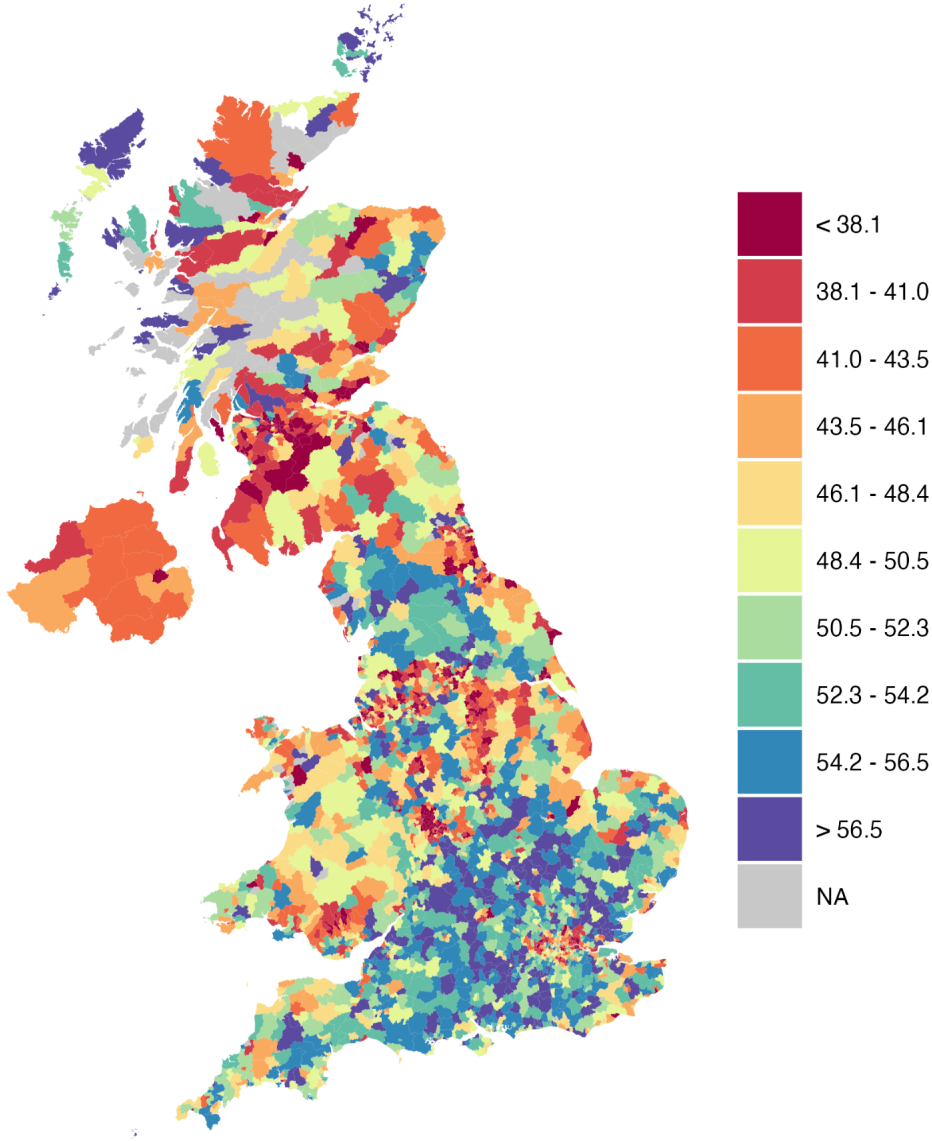
Since the LEO data on upward economic mobility is restricted to England, we introduce a novel method for estimating intergenerational mobility using Facebook data, pairing our income estimates with parent-child linkages to construct intergenerational mobility estimates for the entire UK, including Scotland, Wales, and Northern Ireland.

Based on our estimates of intergenerational mobility, the national rank-rank slope, which measures how strongly a person's income is linked to that of their parents, is estimated at 0.215.⁵ This is nearly identical to prior estimates in England derived from tax records (Carneiro et al., 2020). At the regional level, our Facebook-based mobility estimates also strongly correlate with the LEO estimates for England.

These Facebook-derived estimates provide the first comprehensive view of regional differences in intergenerational mobility in the UK. Mobility is highest in parts of Southern England, particularly around London, and lowest in post-industrial areas such as South Wales, the North East, the Scottish Central Belt, and Northern Ireland (Figure 9).

⁵ A slope of 1 would indicate perfect persistence—meaning a child's income is entirely determined by their parents' income, with no mobility. A slope of 0 would indicate that a child's income is entirely independent of their parents' income, meaning there is no inherited advantage or disadvantage.

Figure 9: Geographic distribution of upward mobility in the UK, from Facebook data – upward mobility is defined as the predicted adult income percentile of a child with parents at the 25th percentile of the national income distribution



Policy implications and next steps

- **Encouraging cross-class interaction could benefit social mobility and subjective wellbeing.** While our findings do not establish causality, they suggest that bringing people from different socioeconomic backgrounds together—through more inclusive schools, workplaces, and community initiatives—may help to grow the cross-class friendships associated with better economic and social outcomes.
- **Reducing friending bias in local neighbourhoods could significantly contribute to increasing cross-class friendships.** Since lower-income individuals form a large share of their friendships in the areas in which they live, both residential segregation and in-group preferences within neighbourhoods can significantly limit the total number of cross-class ties. Interventions aimed at creating more mixed-income housing and shared community spaces may increase meaningful interactions between people of different backgrounds.
- **Leveraging low-bias settings, such as hobby groups, offers promise.** Our data indicate high participation levels in hobby and interest-based groups across both low-income and high-income people. Policies that support the creation of local clubs that promote cross-class interactions for sports, arts, or volunteering can capitalise on these existing settings to foster socioeconomic mixing.

In addition to this research, we are publicly releasing a new dataset of aggregated social-capital metrics for UK communities via the Humanitarian Data Exchange through which policymakers, researchers, and local organisations can explore these measures to identify where cross-class friendships flourish or falter and tailor interventions accordingly.

Acknowledgements

The work of BIT, the RSA, Stripe Partners, and Neighbourly Lab on this project is funded by the Nuffield Foundation. However, the views expressed are those of the authors and not necessarily those of the Foundation. Contributions from Meta are self-funded.

This work contains statistical data from the Office for National Statistics (ONS), which is Crown Copyright. Its use here does not imply endorsement of our analysis or conclusions. This work also uses research datasets that may not exactly reproduce National Statistics aggregates. Construction of the LEO-derived mobility statistics was conducted in the ONS Secure Research Service.

References

Carneiro, Pedro, Sarah Cattan, Lorraine Dearden, Laura van der Erve, Sonya Krutikova, and Lindsey Macmillan. 2020. "The long shadow of deprivation: Differences in opportunities across England." The IFS.

Chetty, Raj, Matthew O. Jackson, Theresa Kuchler, Johannes Stroebel, Nathaniel Hendren, Robert B. Fluegge, Sara Gong, Federico Gonzalez, Armelle Grondin, Matthew Jacob, Drew Johnston, Martin Koenen, Eduardo Laguna-Muggenburg, Florian Mudekereza, Tom Rutter, Nicolaj Thor, Wilbur Townsend, Ruby Zhang, Mike Bailey, Pablo Barberá, Monica Bhole, and Nils Wernerfelt. 2022. "Social Capital I: Measurement and Associations with Economic Mobility." *Nature*, 608(7921): 108– 121.



BIT is a global research and innovation consultancy which combines a deep understanding of human behaviour with evidence-led problem-solving to improve people's lives. We work with all levels of government, nonprofits and the private sector, applying behavioural science expertise with robust evaluation and data to help clients achieve their goals.