The Geography of Social Capital in America

SCP REPORT NO. 1-18 | APRIL 2018

social capital project

A project of the Joint Economic Committee – Republicans | Chairman, Sen. Mike Lee
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Social capital is almost surely an important factor driving many of our nation's greatest successes and most serious challenges. Indeed, the withering of associational life is itself one of those challenges. Public policy solutions to such challenges are inherently elusive. But at present, policymakers and researchers lack the high-quality contemporary measures of social capital available at the state and local levels to even try proposing solutions that are attuned to associational life.

This report describes a new social capital index created to rectify this problem. It details the construction of the index, presents maps summarizing the geographic distribution of social capital, and establishes that the index is consistently—and often strongly—related to a range of economic, social, and demographic indicators. The report also presents the geographic distribution of several subcomponents of social capital, including family unity, family interaction, social support, community health, institutional health, collective efficacy, and philanthropic health.

The Social Capital Project is concurrently providing the state and county data underlying each index, as well as the indices and subindices themselves. It is our hope that the availability of the index will inspire researchers to focus more on social capital and its relationship to other features of economic and social life. And we hope it will aid policymakers as they seek to address the country's needs.

Among the findings:

- The top fifth of states, in terms of social capital scores, are home to just nine percent of Americans, while 29 percent live in bottom-fifth states.
- We have social capital scores for 2,992 of 3,142 counties, containing 99.7 percent of the American population. Just eight percent of Americans live in the top fifth of these counties, while 39 percent of the population lives in the bottom fifth of counties. Nearly six in ten (59 percent) of Americans live in the bottom two fifths of counties, compared with 24 percent living in the top two fifths.
- The 12 states with the highest social capital scores are distributed across two continuous blocs: nine states running from Utah, through Wyoming and Colorado, across the Dakotas and Nebraska, and over to Iowa, Minnesota, and Wisconsin; and the three Northern New England states of Maine, New Hampshire, and Vermont. These states tend to rank highly across all seven subindices as well. Utah has the highest social capital score, followed by Minnesota and Wisconsin.
- Of the 11 states with the lowest levels of social capital, ten of them fall within a contiguous bloc of states running from Nevada, across the Southwest and South over to Georgia and Florida. New York is the only state in the bottom 11 that is outside this group. Louisiana has the lowest social capital score, followed by Nevada, Arizona, and New Mexico.

- Of the nine states ranked just above this bottom group, seven border and extend the southern bloc, filling out most of the rest of the South. The 17 southern states in the bottom 20 are home to 45 percent of Americans and 74 percent of Americans in bottom-fifth counties. Six in ten (59 percent) of people in the 17 states live in bottom-fifth counties. Only 17 of 1,338 counties in these states are in the top fifth.
- Our indices are not dominated by any single subindex, and our state and county indices appear to be approximating social capital in the same general way.
- Among the component variables underlying the state index, the strongest associations with the index itself across states were for the volunteer rate (0.86), heavy television watching by children (-0.81), the share of adults who made charitable contributions (0.80), the share with emotional and social support (0.80), heavy usage of electronics among children (-0.77), the share of adults that are married (0.75), the share of children living with a single parent (-0.72), and the share of births that were to unwed mothers (-0.71).
- At the county level, the highest correlates of social capital were violent crime (-0.73), the share of children with a single parent (-0.71), the share of adults currently married (0.69), voting rates (0.59), and nonprofits plus congregations (0.57).
- Despite the outsized role that religious communities have played in social capital investment, indicators of religious adherence and commitment were generally weakly (or even negatively) correlated with our social capital scores, both at the state and county levels. This may suggest that social capital organized around religion may be displaced by secular sources of social capital, that the availability of resources provided by secular social capital weakens religious commitment, or that people in distressed places turn to religious communities for the support that is missing in other parts of their lives. This question is a subject for future Social Capital Project research.
- Our social capital indices correlate strongly with earlier social capital indices across states and counties, and with other indices such as the Family Prosperity Institute's Family Prosperity Index, Opportunity Nation's Opportunity Index, and the Economic Innovation Group's Distressed Communities Index.
- We show the correlations of our indices and subindices with 59 state-level and 50 county-level benchmarks reflecting a range of economic, social, demographic, educational, health, and other outcomes.
- Our index is a clear improvement on the Penn State index, based on this benchmarking, but remarkably, Robert Putnam's state index from *Bowling Alone*, published nearly two decades ago, has slightly higher benchmark correlations than ours. Because our index captures the health of family life, and because it is based on up-to-date and freely available data (including at the county level), we still prefer it to the Putnam measure. The fact that the correlation between the two state-level indices is 0.81 reassuringly suggests that very different approaches to social capital measurement capture the same essential construct.

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INTRODUCTION: WHY BUILD A SOCIAL CAPITAL INDEX?

Discussions about American society, to the extent they involve facts, revolve around problems reflected in economic, demographic, and political *measures*. What gets defined as a problem, which causes attract interest, what consequences are deemed worrisome, and how effective are attempted remedies—all of these depend on having reasonable measurements of the things under study.

The result is that our understanding of the world is framed by measureable problems, causes, and consequences, and is less attuned to those that are more difficult to measure. For example, the development of gross domestic product (GDP) is one of the great successes in the history of measurement.[1] But today's debates are often hindered by the imbalance between well-measured economic variables such as GDP and less well-measured social, cultural, and psychological ones.

Social capital—the aspects of our relationships that produce benefits for us—falls into this second group. Economic factors and outcomes are important, but if we neglect the health of our associational life, we will misdiagnose the causes of many problems and tend to focus on economic priorities over social ones. Measuring "social capital," however, is no simple matter. Different people—different researchers—use the phrase to mean different things. And many aspects of what gets lumped under "social capital" that are quantifiable are infrequently included in household surveys or administrative data.

Yet, the various attributes and resources to which "social capital" refers are likely to be important. It is incumbent on researchers to develop high-quality measurements of social capital, as well as the more specific things to which it refers. Absent these measures, policymakers will never have a complete picture of how the nation is faring.

This report introduces a new index of social capital and describes its construction. It presents state- and county-level estimates of social capital and its subcomponents. Finally, it assesses the extent to which these measures correlate with a range of social, economic, demographic, and other benchmarks. We are providing the data behind our indices and subindices; it is our hope that they will be used by other researchers and policymakers to gain a more complete and accurate picture of the nation's challenges.

WHAT IS "SOCIAL CAPITAL"?

As discussed in our flagship report, "What We Do Together," the basic idea of social capital as something important that is related to social relationships, social networks, and civil society has a long history.[2] The reference to capital suggests that key to the concept is the conjecture that aspects of our associational life are productive for us.[3] Some scholars have described social capital as inhering in our social networks, as an attribute of collectives.[4] Communities may be said to have more or less productive social capital, or social capital that is differentially productive for the particular ends valued by community members. Others have put the focus on the individual, so that a person's social capital may be characterized as more or less productive for them.[5] These different emphases may be reconciled by positing social capital as a feature of individual *relationships*, so that an individual's social capital is typified by the aggregation of her relationships, and community-wide social capital is the aggregation of all the relationships across members.

But what actually constitutes social capital is not consistently defined across researchers. For example, consider "trust." Is trust an element of social capital—a characteristic intrinsic to relationships that is productive—or is it the consequence of a community having productive social capital (something that social capital produces)? Depending on the researcher, social capital may or may not include the content of relationships, the structure of relationships, or the number of relationships.

It is also likely that different elements of social capital—networks or shared values, for instance—have different causes and effects. And different forms of associational life—families, communities—may be more or less important as incubators of social capital. Different aspects of social capital may even be in tension with each other; social-capital-building within families can come at the expense of social capital investment in neighbors, for instance.

We take a pragmatic approach to these issues. In our understanding of social capital, close and nurturing relationships with other people almost self-evidently provide benefits. Therefore social capital is likely to be "greater" or more productive in families, communities, and organizations with an abundance of close, supportive relationships. Social capital is also likely to be reflected in cooperative activities. These activities may be informal (e.g. conversing or working together with neighbors), or formal (e.g. membership in groups or service on a committee). Some cooperative activities may be formalized in institutions (e.g. governments, schools, news media, corporations), including nonprofit organizations specifically meant to deliver benefits or to represent interests. Social capital is also reflected in trust in other people, confidence in institutions, mutual generosity, high collective efficacy, and low social disorganization.

In our view, places where these features of social life come together have "high," or "more," or more productive social capital—features of social life that provide benefits to community and family members. Places with a dearth of these features

have “low,” or “less,” or less productive social capital. We try to minimize the extent to which “social capital” reflects value judgements; what is productive social capital for some—criminal networks, for instance—may appear to others to be deeply problematic. Many of the indicators that go into our index are about the extent to which people do things together, without regard to what they are doing.

Nevertheless, there is no getting around the fact that any specific way of measuring social capital will involve normative considerations as to what to include or exclude. And other ambiguities are unavoidable. Our index takes a high violent crime rate as reflecting low social capital—a diminished ability to maintain social order—but it could also reflect tight and effective social networks taking the form of gangs.

Our conceptualization of social capital keeps associational life central. Two implications follow from this focus. First, our index affords greater importance than is often given to family relationships. The family is ultimately the most intimate form of social life, and the bedrock for other social capital investment. Second, while our index includes various measures of “civic engagement,” it excludes those indicators of civic engagement that do not involve associational life. For example, we ignore measures of civic or political knowledge, as well as those that emphasize following current events or news. In this way, we try to draw intuitive boundaries around the concept of social capital.

PAST EFFORTS TO DEVELOP A SOCIAL CAPITAL INDEX

Ours is not the first effort to construct an index of social capital. Robert Putnam’s foundational 2000 book *Bowling Alone* featured a state-level index.[6] It included 14 indicators in five categories: community organizational life, engagement in public affairs, community volunteerism, informal sociability, and social trust. Putnam’s index was a simple average of the 14 scores (after standardizing them to put them on a common scale). These measures covered the second half of the 1970s, the 1980s, and the first half of the 1990s, but generally not the same years.

The surveys that Putnam consulted for these data were not always designed to be representative of every state, however. That is to say, some surveys are designed so that the participants are broadly representative only of the American population. Those surveys will include many people from many states, but for any given state, it is not necessarily the case that the participants represent the state’s population well. Further, the measures are out of date, since *Bowling Alone* was published in 2000, and updating the index would require purchasing data that is not otherwise publicly available.

In a 2000 paper, economists Alberto Alesina and Eliana La Ferrara included a state-level map displaying social capital index levels, divided into four unequally-sized categories.[7] They used measures of group participation, trust, and presidential election voting rates, all from the General Social Survey (GSS). Unfortunately, the

GSS is not designed to be representative of each U.S. state; it is representative of the nation as a whole.

In a 2006 paper, Daniel Kim and several coauthors updated Putnam's work and created two state-level social capital indices from 10 of Putnam's indicators.[8] This smaller group still represented all five of Putnam's original categories. One index included community volunteerism, informal sociability, and social trust, and the other included engagement in public affairs. Both indices included community organizational life. As was the case in *Bowling Alone*, some of the data comes from surveys that were not designed to represent every state. In a subsequent paper, Kim and Chul-Joo Lee created another state-level index, using the Annenberg National Health Communication Survey (covering 2005-2008).[9] The index indicated the average number of formal and informal groups, out of 15 different types, in which adults participated. However, this survey, like the GSS, was not designed to be representative of each state.

Also in 2006, the National Conference on Citizenship, in association with the Center for Information and Research on Civic Learning and Engagement and the Saguaro Seminar, introduced a "Civic Health Index.™"[10] It was comprised of 40 indicators, grouped into nine categories. Most of these categories are clearly related to social capital: "connecting to civic and religious groups," "trusting other people," "giving and volunteering," "connecting to others through family and friends," "participating in politics," and "trusting and feeling connected to major institutions." Others, however, while reasonable in an index of civic health, reflect social capital much less directly, including "staying informed," "understanding civics and politics," and "expressing political views."

The Civic Health Index™ generally weights all of the indicators within a category equally and then weights the category scores equally to compute the index. Index values were estimated at the national level from 1975 to 2004. The index declined by over seven percent from 1975 to 1995, then made up over half of that decline by 2003. No state or county estimates are available.

The Legatum Prosperity Index™ has been assessing nations around the world since 2007, and beginning in 2008, social capital has been represented via a social capital subindex.[11] This subindex has changed over time, but among the indicators included have been donations, volunteering, membership in groups, trust, helping strangers, marital status, importance of religion and friends, having reliable friends, voter turnout, voicing opinions, and being treated with respect. The most recent index compares 149 countries, but no data are available at the state or county level. The social capital subindex relies on Gallup data, which must be purchased.

The most influential social capital index in recent years has been one originally produced by Anil Rupasingha, Stephan Goetz, and David Freshwater and subsequently updated by Penn State University's Northeast Regional Center for Rural Development.[12] This index is available at the county level—the first available

at this level of disaggregation. The most recent version incorporates data on presidential voting rates in the 2012 election, mail-in response rates for the 2010 decennial census, domestically-oriented non-profit organizations per capita, and group membership organizations and recreational establishments ("associations") per capita. We discuss some shortcomings of this index in detail in the next section.

The Need for a New Social Capital Index

This brief review highlights the shortcomings of these previous sources of social capital estimates. Several indices rely on data that is out of date. A number of them either include a limited range of social capital indicators or include indicators that are less obviously about social capital. In particular, the health of family life is under-examined by the earlier measures. And some depend on data sources that are not freely available.

Several of the indices do not provide estimates below the national level. Of the indices available at the state level, all rely at least in part on surveys that cannot be assumed to represent state populations well.

Only the Penn State index provides county-level estimates. But after researching the index, we were dissatisfied. The Penn State indicators tap a limited range of the concepts invoked by "social capital." The index includes nothing on family health, volunteerism, charitable giving, informal community engagement, social support, or collective efficacy. Presidential voting and census mail-in rates are tenuous indicators of social capital, as they relate people primarily to federal, rather than local institutions.

With only four indicators, problems in any one of them can seriously affect the resulting index. Several of the indicators suffer from interpretive or data issues. For instance, places with many nonprofit organizations may have high civic engagement, but that might also simply reflect that they have a lot of problems to address. In addition, to the extent that nonprofit organizations are professionally run, they may actually crowd out informal volunteerism and a sense of obligation to fellow community members. Further, the data used by Penn State are from IRS registrations, and a large number of religious nonprofits are not required to register. (Nor are the smallest nonprofits.)[13] Some faith communities, such as the Church of Jesus Christ of Latter-day Saints (also known as the "LDS" or "Mormon" Church), deliberately oppose registration.[14] One study of Indiana found that registered nonprofits in the IRS data included only 60 percent of nonprofits they were able to identify from other sources.[15]

The establishment data only counts places with paid employees and an Employer Identification Number (EIN). The distinction between an "establishment" and an organization relying on voluntary service is potentially a profound problem. For example, in the 2015 establishment data, Utah has just 658 religious

establishments. But data on religious congregations (described below) indicates that in 2010 there were over 5,500 congregations in the state.[16] The reason for the discrepancy may be that the organization of the Mormon Church relies on volunteers rather than on employees. Or it may be that because religious organizations often are not required to register with the IRS, many do not have EINs. The distinction between an "establishment" and an organization relying on voluntary service also likely affects non-religious nonprofit organizations, such as parent-teacher organizations and civic membership groups.

Finally, the establishments measure constructed by the Penn State researchers includes a variety of athletic and recreational establishments, including golf courses, fitness centers, and bowling alleys. While those kind of inherently social establishments reflect social capital, they are very different than the membership organizations otherwise counted in their establishment measure (including labor unions, political organizations, civic organizations, and the like). Further, what the researchers have included and excluded seems arbitrary. Left out are movie theaters, theater and dance companies, racetracks, zoos, theme parks, arcades, casinos, skiing facilities, museums, libraries, bars, and dance clubs.

When we compared the Penn State index to a variety of benchmark indicators, it was only moderately or weakly related to them. The correlation of the most recent version of the index with county poverty rates is -0.34, for instance (where -1.00 would indicate, roughly, that variation in social capital completely explains variation in poverty rates). As we will see below, our index is more strongly correlated than the Penn State index is with most of our benchmarks, often much more strongly.

We confirmed we could replicate the Penn State index independently, which revealed that census response rates were actually negatively correlated with the Penn State social capital score.[17] That was another red flag, since the hypothesized relationship—the reason for its inclusion in the index—was that higher response rates indicate greater social capital (i.e., stronger norms regarding the responsibilities of citizenship, or greater confidence and trust in the federal government).

We also estimated a corresponding state-level index using Penn State's approach, and this time all four indicators were positively correlated with the index.[18] The state-level correlations with our benchmarks were stronger than the county-level ones, but still lower than what we expected. In particular, when we looked at how the state we know best, Utah, was ranked along the Penn State index and its components, we saw large discrepancies with other research. For instance, Utah is ranked first on the Family Prosperity Initiative's Family Prosperity Index.[19] According to the U.S. Religion Census, administered by the Association of Statisticians of American Religious Bodies, Utah has the highest rate of religious adherence in the country, and it is ranked 7th in terms of congregations per capita.[20] Similarly, research using the Current Population

Survey (CPS) indicates that Utah has the highest rate of religious volunteerism, but it also ranks the state 15th in terms of secular volunteerism.[21] Putnam's index from Bowling Alone ranks it at 14th in terms of social capital, and it is in Alesina and La Ferrara's top group of nine states.

Yet, the Penn State index ranks Utah 20th in terms of census response rates, 45th in terms of presidential voting rates, second worst in terms of nonprofits, and worst in terms of associations. Given these rankings, Utah ranks worst overall on the Penn State index.[22] The establishment data that is the basis for one of the four inputs into the Penn State index ranks Utah last in the nation in terms of religious organizations per capita.

With such large state-level discrepancies, it is hard to imagine that the county-level Penn State index is reliable for all but the most disparate comparisons. Our conclusion was that a better social capital index was needed than those currently available.

CONSTRUCTING A NEW STATE SOCIAL CAPITAL INDEX

For the better part of the past year, the Social Capital Project has been gathering county- and state-level data on a range of social, economic, demographic, health, religious, and other indicators. Broadly speaking, we looked for indicators related to family structure and stability, family interaction and investment, civil society, trust and confidence in institutions, community cohesion, institutions, volunteerism, and social organization. There are not many surveys that provide such variables using samples designed to represent every state or county. Nor are there many censuses or administrative data sources that capture the entire population of interest in all states or counties. The limited availability of data was a fundamental constraint that removed much of the hard work that otherwise might have gone into choosing among many dozen possible indicators.

Starting from around 20 county-level measures and an additional 50 state-level indicators, we eventually settled on seven at the county level and 25 at the state level. These indicators are from data collected by various sources between 2006 and 2016, primarily from 2013 forward. The details of how we selected these variables can be found in the Appendix. Table 1 provides an overview of the indicators and their derivation. Appendix Table A1 displays the full range of variables we considered and gives their sources.

Our state social capital index includes seven dimensions, represented by five subindices and two stand-alone indicators. These dimensions were chosen partly out of data constraints, but we also considered the ways in which past researchers had theorized about social capital and associational life.[23] We then combined these seven component variables to create an index score for each state.

Table 1. State-Level Social Capital Index Indicators

Indicator	Data Source	Notes
Family Unity Subindex		
Share of births in past year to women who were unmarried	American Community Survey, 2012-2016, 5-year estimates; 2007-2011, 5-year estimates for 27 counties in eight states	American FactFinder Table S1301
Share of women ages 35-44 who are currently married (and not separated)	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of own children living in a single-parent family	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B09002
Family Interaction Subindex		
Share who report child spends at least 4 hours per weekday in front of a TV	National Survey of Children's Health, 2016	includes watching TV, videos, or video games
Share who report child spends at least 4 hours per weekday on electronic device, excluding homework	National Survey of Children's Health, 2016	includes computers, cell phones, handheld video games, and other electronic devices
Share who report someone in the family read to child every day in past week	National Survey of Children's Health, 2016	restricted to parents with child 0-5 years old
Social Support Subindex		
Share saying they get the emotional support they need only sometimes, rarely, or never	Behavioral Risk Factor Surveillance System	analysis of BFRSS microdata, 2006 & 2010 estimates averaged to get pre- and post-recession estimates
Average number of close friends reported by adults	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share of adults reporting they and their neighbors do favors for each other at least 1x/month	Volunteer Supplement to the November 2013 Current Population Survey	
Share of adults reporting they can trust all or most of their neighbors	Volunteer Supplement to the November 2013 Current Population Survey	
Community Health Subindex		
Share of adults who report having volunteered for a group in the past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having attended a public meeting re. community affairs in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having worked with neighbors to fix/improve something in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share of adults who served on a committee or as an officer of a group	Volunteer Supplement to the November 2013 Current Population Survey	
Share who attended a meeting where political issues were discussed in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who took part in march/rally/protest/demonstration in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Membership organizations per 1,000	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
Registered non-religious non-profits plus religious congregations per 1,000	IRS, Business Master File, 12/2015; ACS population estimates, 7/2015 (2015 vintage); U.S. Religion Census: Religious Congregations and Membership Study, 2010	IRS data via National Center for Charitable Statistics & American FactFinder Table PEPANNRES; congregation data obtained via Association of Religious Data Archives, census conducted 2009-11
Institutional Health Subindex		
Average (over 2012 and 2016) of votes in the presidential election per citizen age 18+	Election Administration and Voting Survey	U.S. Election Assistance Commission; rates based on citizen estimates from 2010 decennial census and ACS
Mail-back response rates for 2010 census	Census Bureau	
Share of adults reporting some or great confidence in corporations to do what is right	Volunteer Supplement to the November 2013 Current Population Survey	
Share of adults reporting some or great confidence in the media to do what is right	Volunteer Supplement to the November 2013 Current Population Survey	
Share of adults reporting some or great confidence in public schools to do what is right	Volunteer Supplement to the November 2013 Current Population Survey	
Collective Efficacy		
Violent crimes per 100,000	FBI, Uniform Crime Reporting Statistics, 2014	
Philanthropic Health		
Share who report having made a donation of >$25 to a charitable group in past year	Volunteer Supplement to the September 2015 Current Population Survey	

Source: Social Capital Project.

Subindices

We transformed the original values of each indicator to "standard scores," by subtracting the mean value and dividing by the standard deviation of the indicator's distribution (a measure of variation). The mean of each standard score is zero, and the standard deviation is one. Standardizing the scores puts them on a comparable scale, allowing us to combine multiple indicators despite their initially having different distributions (including different minimum and maximum values). We reversed the polarity of certain measures, such as the share of births to single mothers, so that a larger positive standard score always corresponded with "more" social capital.

Each subindex is comprised of a weighted sum of standard scores. Simply adding multiple standard scores gives them equal weight in contributing to the subindex, but we wanted indicators to be weighted more or less depending on how well they reflected the concept embodied in the subindex. The weights are selected through a statistical technique called "principal components analysis" (PCA). Specifically, the weights are estimated so that the resulting subindex accounts for the maximum possible "variance," or variability, across the original scores. Some information in the original set of indicators is lost by using this "first principal component score" as the subindex, but the loss is minimized versus any other set of weights. It is analogous to finding the best angle from which to photograph a three-dimensional object so that the two-dimensional rendering retains the most information.

In the domain of family health, we created a "family unity" subindex and a "family interaction" subindex. The family unity subindex combines state-level data from the American Community Survey (2012-2016) on the share of births that are to unwed mothers (weight of 0.57), the percentage of children living in families headed by a single parent (0.60), and the percentage of women ages 35-44 who are married (and not separated) (0.57). (The weights could, in theory, range between -1.0 and 1.0, and they reflect the extent to which an indicator is correlated with the subindex itself. Ideally, the weights should be sizable and should all have the same sign.)[24] The subindex accounts for 91 percent of the variability across the original three variables of which it is comprised.

The family interaction subindex combines data from the 2016 National Survey of Children's Health on the share of children ages 0-5 read to every day by a family member (weight of 0.47), the share of children who watch television or videos or play video games at least four hours a day (0.65), and the percentage of children who use computers, cell phones, and other electronic devices for purposes other than schoolwork at least four hours a day (0.60). Our family interaction subindex accounts for 68 percent of the variability across the original three variables.

We created a social support subindex, comprised of several indicators from multiple sources. It includes the share of adults who sometimes, rarely, or never "get the social and emotional support [they] need," taken from 2006 and 2010

Behavioral Risk Factor Surveillance System data (weight of 0.50). It also includes, from the 2013 Civic Engagement Supplement to the CPS, the share of adults who do favors for neighbors at least once a month (0.49) and the share who trust most or all of their neighbors (0.54). The last indicator is the average number of "close" friends that adults report having in the 2008 Civic Engagement Supplement to the CPS (0.47). The resulting index accounts for 70 percent of the original variability across the four variables that comprise it.

Our community health subindex incorporates information on the share of adults who reported volunteering for an organization in the past year (weight of 0.33), the share who attended a public meeting to discuss community affairs (0.38), and the share who worked with neighbors to improve the community (0.39), all from the 2015 Volunteer Supplement to the CPS. It also includes the share of adults who served on a committee or as an officer of a group in the past year, from the 2013 Civic Engagement Supplement to the CPS (0.38). From the 2008 Civic Engagement Supplement to the CPS, we include the share who attended a public meeting where political issues were discussed (0.39) and the share who participated in a march, protest, rally, or demonstration (0.29). Our community health subindex accounts for 65 percent of the variability across eight indicators.

Further, we estimate, from 2015 County Business Pattern data on establishments, membership organizations per capita (weight of 0.30). Finally, we include a measure of non-profit organizations per capita (weight of 0.36). This was created by summing registered non-religious not-for-profit organizations per capita and religious congregations per capita. The former is from the December 2015 Internal Revenue Service Business Master File (accessed through the Urban Institute's National Center for Charitable Statistics). Most faith-based organizations, excepting colleges and health care organizations, are not required to register with the IRS. Only half of religious congregations do so, and the share varies by congregation.[25] We therefore added congregations per capita from the 2010 Religious Congregations and Membership Study, conducted by the Association of Statisticians of American Religious Bodies and accessed through the Association of Religion Data Archives.

Finally, we created an institutional health subindex. This subindex combines the rate at which citizen adults of voting age cast ballots in the 2012 and 2016 presidential elections (averaged over the two years, weight of 0.38), the rate at which residents returned the 2010 decennial census questionnaire through the mail (0.44), and the share of adults with "great" or "some" confidence in corporations (0.49), the media (0.38), and public schools (0.53) to do what is right. The voting data is from the U.S. Election Assistance Commission annual reports, the census response rates are from the Census Bureau, and the confidence measures are from the 2013 Civic Engagement Supplement to the CPS. The institutional health subindex accounts for 48 percent of the variability across the original five indicators. The lower proportion that it explains relative to the other subindices may reflect the weaknesses in the presidential voting and census response indicators discussed above.

Stand-Alone Indicators

We included in our state-level social capital index two stand-alone indicators to represent two other dimensions of associational life. The violent crime rate was included to reflect the level of "collective efficacy" (or conversely, of social disorganization). The idea is that communities high in social capital are better positioned to informally police their own community and enforce pro-social norms, and their residents are less likely to do harm to one another.[26] Violent crimes are better reported than crimes generally, which is why we do not use a broader measure. The source for this measure was the Federal Bureau of Investigation's Uniform Crime Reporting Program.

The second stand-alone indicator reflects philanthropic health—the share of adults who gave more than $25 in the past year to "charitable or religious organizations." By setting the threshold for giving low, this measure ensures that cross-state differences are not driven by income concentration at the top, where charitable giving is also somewhat concentrated.[27] This measure comes from the 2015 Volunteer Supplement to the CPS.

Combining the Dimensions of Social Capital

The final step was to create the index itself. We standardized the five subindex scores and the two stand-alone indicators to put them all on a common scale. We then ran principal components analysis on these seven variables to create weights for each of them: family unity (0.38), family interaction (0.41), social support (0.45), community health (0.33), institutional health (0.36), collective efficacy (0.28), and philanthropic health (0.40).

Each state's social capital index score was computed by taking the weighted sum of the seven standard scores and then standardizing this weighted sum. Index scores range from -2.2 to 2.1; a score of, say, 1.5 means that a state lies one-and-a-half standard deviations above the mean index score across states. Roughly, its social capital levels are higher than the average state's social capital by an amount 1.5 times the typical gap between a state and the average.

There is an unavoidable element of arbitrariness in creating a one-dimensional index to reflect a concept as complex and diffuse as "social capital." The usefulness of our index depends on its ability to represent a potentially important factor affecting a range of social, economic, and health outcomes. The index represents a "noisy" measure of a fuzzy concept. But it reflects those aspects of its constituent indicators that all measure the same "thing," and lets them contribute to the measure insofar as they reflect that thing. Our social capital index accounts for 56 percent of the variability across the two stand-alone indicators and the five subindices (each of which accounts for 48 to 91 percent of the variability across its constituent indicators).

CONSTRUCTING A NEW COUNTY-LEVEL SOCIAL CAPITAL INDEX

While the state index includes seven dimensions of social capital, our county index includes only four because fewer variables are available at the county level. These include three subindices—two of which contain their own subindex—and one stand-alone indicator. The construction of the county-level index is more complicated than for the state-level index. Table 2 shows the variables that go into the index. (See Appendix Table A1 for the full list of county-level variables we considered.)

Table 2. County-Level Social Capital Index Indicators

Indicator	Data Source	Notes
Family Unity Subindex		
Share of births in past year to women who were unmarried	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S1301
Share of women ages 35-44 who are currently married (and not separated)	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of own children living in a single-parent family	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B09002
Community Health Subindex		
Registered non-religious non-profits per 1,000	IRS, Business Master File, 12/2015; ACS population estimates, 7/2015 (2015 vintage)	via National Center for Charitable Statistics & American FactFinder Table PEPANNRES
Religious congregations per 1,000	U.S. Religion Census: Religious Congregations and Membership Study, 2010	via Association of Religious Data Archives, census conducted 2009-11
Informal Civil Society Sub-Index	various state-level sources (see Table 1)	combination of share who volunteered, who attended a public meeting, who report having worked with neighbors to fix/improve something, who served on a committee or as an officer, who attended a meeting where politics was discussed, and who took part in a demonstration in the past year (see text for details)
Institutional Health Subindex		
Average (over 2012 and 2016) of votes in the presidential election per citizen age 18+	Election Administration and Voting Survey; ACS, 2012-2016, 5-year estimates	U.S. Election Assistance Commission; EAVS voting combined with American FactFinder Table B05003 estimates of citizens 18+; votes unavailable for Alaska counties, which we assign the statewide voting rate
Mail-back response rates for 2010 census	Census Bureau	via University of Michigan Population Studies Center, Institute for Social Research
Confidence in Institutions Sub-Index	Volunteer Supplement to the November 2013 Current Population Survey	combination of share reporting at least some confidence in corporations, in the media, and in public schools (see text for details)
Collective Efficacy		
Violent crimes per 100,000	FBI, Uniform Crime Reporting Statistics, 2008-14	via County Health Rankings, various editions: 2017 (2012-14 UCR data), 2015 (2010-12), 2014 (2009-11), and 2013 (2008-10)

Source: Social Capital Project.

Subindices

As when we created the state index, we transformed all original values to standard scores, though this time the mean and standard deviation applied to the distribution of values across counties rather than across states. As with the state-level subindices, our county-level subindices are weighted sums of standard scores, with the weights determined through PCA. These weights need not be the same as those produced from state-level data, where it is variation across states that is being analyzed.

We created the same family unity subindex as we did at the state level. The subindex combines county-level data from the American Community Survey (2007-2011[28] and 2012-2016) on the share of births that are to unwed mothers (weight of 0.52), the percentage of children living in families headed by a single parent (weight=0.62), and the percentage of women ages 35-44 who are married (and not separated) (weight=0.59). Reassuringly, these weights are very similar to those produced in the state-level analyses, suggesting that the state- and county-level subindices are measuring the same underlying construct. It does explain less of the variability in the original three variables than the state-level subindex does—73 percent instead of 91 percent.

We also created a community health subindex, though due to data availability issues, the county subindex incorporates less information than the corresponding state-level one. We were concerned that the available county-level indicators of community health did not fully capture the underlying concept. In particular, we lacked the CPS indicators of informal civil society and activities requiring a time commitment that were available at the state level—working together with neighbors, attending public meetings, serving on committees or as officers, volunteering, attending political meetings, and participating in demonstrations. We worried about this omission, in particular, because professionalized services offered through membership organizations and other nonprofit groups might be expected to crowd out informal and time-intensive volunteer activities, potentially leaving the stock of social capital thinner than it might have been. Inherently, formal organizations that serve members' or clients' interests allow people to "farm out" social capital activities. To include only a measure of the health of formal organizations would penalize places where community involvement is more informal.

To resolve this concern, we first went back to the state data and created a new subindex of "informal civil society" for each state. The subindex score was the first principal component score combining the six CPS variables above.[29] We then assigned this subindex score to every county within a state. In other words, the only variation in the subindex score is between states, and all counties within a state get the same score.

Next, back in the county data, we created five different candidate subindices, using different combinations of the informal civil society subindex score, membership organizations per capita, non-religious non-profit organizations per capita, congregations per capita, and the combination of non-religious non-profits and congregations. We computed, for each candidate subindex, the population-weighted average subindex score across a state's counties. Then we correlated each of these state averages with the state-level community health subindex. We selected the subindex out of the five candidates that produced the strongest correlation.

The final county-level community health index combines non-religious non-profits per capita (weight of 0.70), congregations per capita (0.48), and the informal civil society subindex (0.53). The population-weighted average of this subindex across a state's counties correlated at 0.97 with the state-level community health subindex. For context, the correlation of the state-level subindex with the version of the county community health subindex we favored prior to adding in the informal civil society subindex was 0.75. The county-level community health subindex accounts for 55 percent of the variability in the three original variables that go into it.

Finally, we included an institutional health subindex. As with the community health subindex, we were concerned about the incomplete data we had at the county level. In this case, we lacked information about confidence in institutions. We took the same approach as for community health. In the state data, we created a confidence subindex that included the three institutional confidence variables.[30] We assigned every county in a state the state's subindex score. Then we created three versions of a county-level institutional health index, using different combinations of presidential voting rates, census response rates, and the confidence subindex.

As before, we created population-weighted state averages across a state's counties and compared them to the state-level institutional health index. The version that correlated most strongly included presidential voting rates (weight of 0.63), census response rates (0.41), and the confidence subindex (0.66), accounting for 44 percent of the variability in those three measures.[31] The correlation of the population-weighted state average across counties with the state-level institutional health subindex was 0.98.

We did not attempt to create subindices at the county level for family interaction or social support, lacking data.[32]

Stand-Alone Indicator

The county-level social capital index includes one stand-alone indicator. As for the state-level index, the violent crime rate was included to reflect the level of

collective efficacy in a county. It comes from the Federal Bureau of Investigation's Uniform Crime Reporting Program.

The charitable giving measure from the CPS is not available at the county level, so it is not included as a stand-alone indicator.

Combining the Dimensions of Social Capital

Computing the county-level index was also a bit more involved than for the state index. We standardized the three subindex scores and the collective efficacy stand-alone indicator to put them all on a common scale. We then ran PCA on these four variables. The weights were 0.53 for family unity, 0.47 for community health, 0.49 for institutional health, and 0.51 for collective efficacy. We took the weighted sum of the four standard scores to get the first iteration of the index, which accounted for 51 percent of the variability in the original four constituent measures.

However, information on violent crime rates was missing for 178 counties (out of 3,142). We were able to compute scores for 103 of these counties by creating an alternative index that left out violent crime. (The weights were 0.55 for family unity, 0.56 for community health, and 0.62 for institutional health. The subindex accounted for 56 percent of the variability in the three original variables.) Where a county lacked a score using the original index, we gave it the score on the alternative index. These two indices were correlated with each other at 0.94, so where states ranked on one was largely where they ranked on the other.

The final county-level index scores range from -4.3 to 2.9, indicating greater dispersion than exists across states.

To assess how the county-level and state-level indices might differ from one another, we created another state-level index using only the three subindices and the stand-alone violent crime indicator that are in the county index. This index correlated with the fuller state-level index at 0.96.[33] We also computed for each state the population-weighted average across counties of the county-level social capital index. The correlation between it and the state-level social capital index was 0.95, and the correlation between it and the state-level index based on the county-level methods was 0.98. Thus, the thinner county-level index likely ranks counties very similarly to the way in which the fuller state-level index would rank them.

In sum, our state index captures a fuller set of social capital indicators than any previous effort. We could not find a reliable measure of generalized trust at the state or county levels, but we believe we have covered most of the essential domains discussed by past social capital theorists. We considered including measures of segregation by race and income in our indices. The idea is that places

where different types of people largely live apart are likely to be missing out on some benefits of social capital. However, research suggests that more diversity actually tends to reduce levels of social capital.[34] Intuitively, it is more difficult to engage with people when they are not "like" us. In the end, we decided not to incorporate segregation into our indices. We view segregation as having an indeterminate effect on *levels* of the many dimensions of social capital. It seems more likely that segregation affects the distribution of social capital within a state or county.[35]

FINDINGS

Table 3a lists the state social capital index ranks and the rankings on the individual subindices of the index. Table 3b lists the county social capital index and subindices as national percentiles. Figure 1 displays the state social capital scores in a map, and Figure 2 displays the county-level data. We have social capital scores for 2,992 of 3,142 counties, containing 99.7 percent of the American population. Before examining the places with the highest and lowest social capital scores, we provide some initial details about the distribution of social capital in America.

Table 3a. State Rankings on Social Capital and its Subindices

State	FIPS Code	Overall State SCI	Family Unity Subindex	Family Interaction Subindex	Social Support Subindex	Community Health Subindex	Institutional Health Subindex	Collective Efficacy Subindex	Philanthropic Health Subindex
Alabama	01	42	44	41	38	42	29	39	45
Alaska	02	20	17	18	18	3	25	50	24
Arizona	04	47	41	47	43	48	49	35	37
Arkansas	05	46	36	50	42	46	39	42	47
California	06	40	23	28	50	40	41	34	42
Colorado	08	6	6	5	12	17	12	23	4
Connecticut	09	19	22	11	30	19	16	12	5
Delaware	10	34	42	39	33	30	32	43	28
District of Columbia	11	37	51	12	44	1	28	51	22
Florida	12	48	46	42	48	51	27	46	51
Georgia	13	41	43	40	45	41	34	31	38
Hawaii	15	31	21	43	37	36	26	13	34
Idaho	16	16	2	23	15	22	19	7	21
Illinois	17	28	25	27	25	34	38	30	27
Indiana	18	23	29	21	21	25	14	29	26
Iowa	19	9	10	14	7	13	3	16	15
Kansas	20	18	9	36	17	20	5	28	12
Kentucky	21	35	28	45	32	39	36	6	43
Louisiana	22	51	49	51	47	49	48	45	50
Maine	23	7	26	2	6	9	22	2	23
Maryland	24	26	32	22	36	21	23	41	18
Massachusetts	25	21	18	17	22	24	7	33	29

Michigan	26	27	34	35	27	27	9	38	32
Minnesota	27	2	5	10	2	11	1	10	2
Mississippi	28	45	50	48	31	38	40	17	46
Missouri	29	25	27	31	19	32	13	40	30
Montana	30	14	12	7	13	4	47	25	7
Nebraska	31	8	7	13	9	15	4	18	11
Nevada	32	50	40	49	51	50	50	49	16
New Hampshire	33	4	11	3	11	5	6	4	6
New Jersey	34	30	14	46	41	45	18	14	20
New Mexico	35	49	48	34	35	23	51	47	44
New York	36	43	35	25	49	44	46	32	48
North Carolina	37	33	37	29	34	37	35	27	36
North Dakota	38	11	3	16	8	16	8	15	19
Ohio	39	29	39	37	23	31	31	19	33
Oklahoma	40	39	30	38	39	29	45	37	39
Oregon	41	13	20	15	10	6	37	11	10
Pennsylvania	42	24	31	33	28	28	33	24	14
Rhode Island	44	22	45	6	24	26	17	9	17
South Carolina	45	36	47	32	40	35	20	44	31
South Dakota	46	10	19	20	4	8	11	26	9
Tennessee	47	38	38	26	29	43	44	48	35
Texas	48	44	24	44	46	47	43	36	41
Utah	49	1	1	8	1	10	30	8	1
Vermont	50	5	15	1	5	2	21	1	40
Virginia	51	17	13	24	26	18	10	5	8
Washington	53	15	8	19	20	12	15	20	13
West Virginia	54	32	33	30	14	33	42	22	49
Wisconsin	55	3	16	9	3	7	2	21	3
Wyoming	56	12	4	4	16	14	24	3	25

Source: Social Capital Project, Download Data (xlsx)

Table 3b. County-Level Index and Subindices as National Percentiles

View full County-Level Index

County	FIPS Code	Overall County SCI	Family Unity Subindex	Community Health Subindex	Institutional Health Subindex	Collective Efficacy Subindex
Autauga County, Alabama	01001	51	71	10	69	35
Baldwin County, Alabama	01003	51	67	11	62	46
Barbour County, Alabama	01005	12	5	32	34	25
Bibb County, Alabama	01007	45	65	30	18	65
Blount County, Alabama	01009	58	75	13	68	47
Bullock County, Alabama	01011			59	17	29
Butler County, Alabama	01013			53	26	9

Source: Social Capital Project, Download Data (xlsx)

The maps in Figures 1 and 2 display states and counties broken out into five (roughly) equally-sized groups—ten states per group and 598 counties.[36] These groups do not contain the same number of people, however. The states with the lowest social capital include 29 percent of the nation's population, while the top grouping is home to just nine percent of Americans. Over half the population (56 percent) is in the lowest two groups of states, while 21 percent is in the top two groups. At the county level, 39 percent of the population in non-missing counties lives in the bottom fifth, while just eight percent lives in the top fifth. Nearly six in ten (59 percent) of Americans live in the bottom two fifths of counties, compared with 24 percent living in the top two fifths.

Across states, the social capital scores are strongly correlated with each subindex. The correlations are 0.89 for social support subindex scores, 0.82 for family interaction, 0.80 for philanthropic health, 0.76 for family unity, 0.72 for institutional health, 0.65 for community health, and 0.55 for collective efficacy. The 21 correlations between the seven subindices are all positive, except that community health and collective efficacy, surprisingly, are correlated at -0.11. Otherwise, the correlations range from 0.17 (family unity and community health) to 0.74 (family interaction and community health).

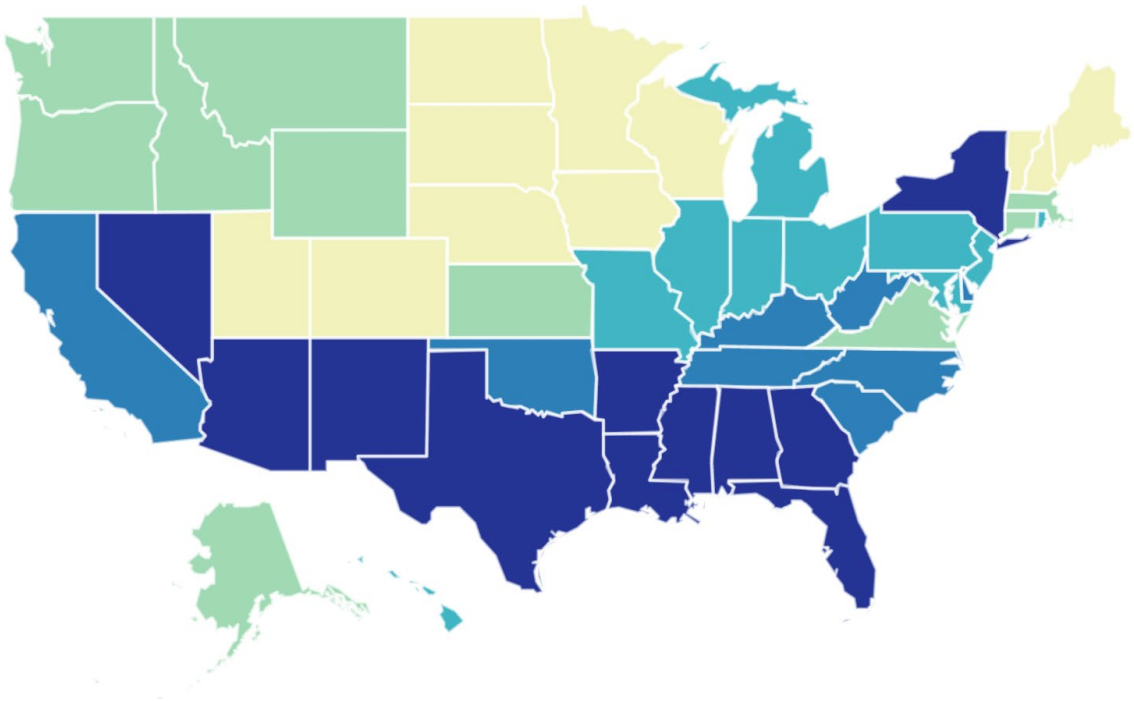
At the county level, social capital scores are also strongly correlated with all four subindex scores. The correlations are 0.76 for the family unity subindex, 0.73 for collective efficacy, 0.71 for institutional health, and 0.65 for community health. The fact that these correlations are all fairly strong means that our state and county indices do not simply reflect a single dimension driving the results. The correlations between the four subindices range from 0.24 (family unity and community health) to 0.47 (family unity and collective efficacy).

Diving deeper into the components of the indices at the state level, the indicators with the strongest correlation to social capital were the volunteer rate (0.86), heavy television watching by children (-0.81), the share of adults who made charitable contributions (0.80), the share with emotional and social support (0.80), heavy usage of electronics among children (-0.77), the share married (0.75), the share of children living with a single parent (-0.72), and the share of births that were to unwed mothers (-0.71). While not included in the index, the share who trust most of their neighbors was correlated at 0.86 with it. At the county level, the highest correlates of social capital were violent crime (-0.73), the share of children with a single parent (-0.71), the share of adults currently married (0.69), voting rates (0.59), and nonprofits plus congregations (0.57). The importance of the absence of many of the key state-level variables at the county level is evident.

A few state-level indicators had low correlations with the index, including membership organizations per capita (0.07), confidence in the media to do what is right (0.20), having participated in a march or demonstration (0.21), and non-religious non-profits and congregations per capita (0.29). Three of these indicators go into the community health subindex, which may explain why it is less strongly

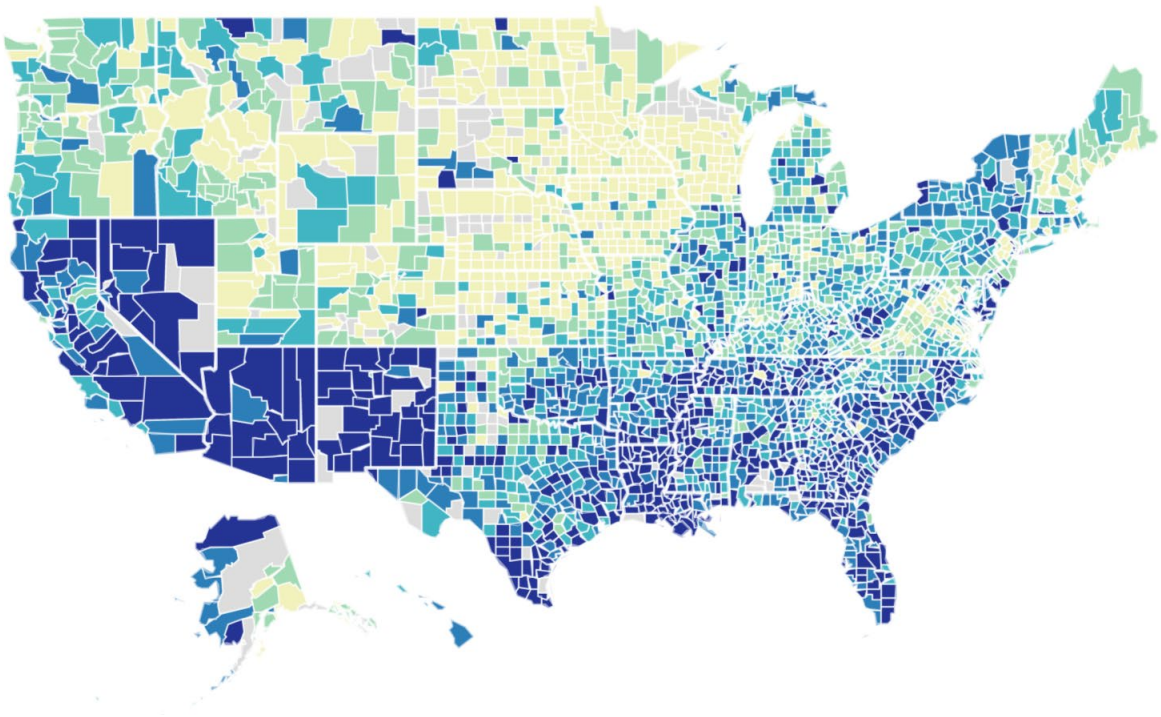
correlated with social capital scores than most of the other subindices. Relatedly, the Penn State social capital index relies on variants of the membership organization and non-profits indicators. Our replication of the Penn State index correlates only at 0.37 with our index, as we will see below. At the county level, census response rates—one of the four Penn State components—was correlated with our index at only 0.26, but the correlation between the 2014 Penn State index and our county index was 0.56. We view this as evidence that the relatively thin county-level indices do not measure social capital as strongly as our richer state-level index does.

Figure 1. Social Capital Index and Subindex Scores by State



Source: Social Capital Project. Download Data (xlsx)

Figure 2. Social Capital Index and Subindex Scores by County



Source: Social Capital Project. Download Data (xlsx)

Of interest for future work on social capital measurement, there were other state-level variables not included in our index that had relatively low correlations with the index: discussing politics with family and friends was negatively correlated (-0.20), and there were low positive correlations for voting in local elections (0.10), routinely eating dinner with one's family (0.31), and supporting a political candidate (through time, money, or endorsement, 0.32). Most surprisingly, despite the outsized role that religious communities have played in social capital investment,[37] several religious indicators were unrelated to our social capital index, including religious adherence rates (-0.02), congregations per capita (0.08), frequent church attendance (-0.34), and participation in a religious group (0.22). This absence of correlation—if not the negative correlations—recurred at the county level, where the correlation between religious adherence and our social capital index was only 0.17 and the correlation between congregations per capita and our index was 0.24. The relationship between religion and social capital will be a subject of future Social Capital Project research.[38]

The Appendix displays state maps where the social capital measure is the version used at the county level (Appendix Figure A1) and where it is the population-weighted average county social capital score (Appendix Figure A2). Fifteen states move from one quintile to an adjacent one, comparing Figure 1 to Appendix Figure

A1, and eleven states move (again, to an adjacent quintile) comparing Figure 1 to Appendix Figure A2. These results offer some reassurance that the thinner county-level index is approximating social capital in the same way as the richer state-level index. Appendix Figures A3-A9 display maps presenting each of the seven state subindices, and Appendix Figures A10-A13 map the four county subindices.

We now consider where social capital is prevalent, and where it is relatively scarce.

The Good: The Mid-Continent North and Northern New England

The twelve states with the highest social capital scores are distributed across two continuous blocs. The larger bloc—call it the Mid-Continent North—includes nine states running from Utah (ranked first in the nation), through Wyoming and Colorado, across the Dakotas and Nebraska, and over to Iowa, Minnesota (ranked second), and Wisconsin (third). This bloc is mostly rural, with few cities having more than 200,000 residents. While just eight percent of Americans live in the Mid-Continent North, it includes 51 percent of Americans living in a top-fifth county (and 63 percent of top-fifth counties). Just over half (51 percent) of the population in the nine states lives in a top-fifth county, and only four percent lives in a bottom-fifth county.

The counties in the Mid-Continent North that include the largest cities generally have social capital scores in the top fifth of counties (Provo, Utah; suburban Denver; and Madison, Wisconsin), the next-highest fifth (suburban Denver; Minneapolis and St. Paul; and Lincoln, Nebraska), or the middle fifth (suburban Denver again; Omaha, Nebraska; Colorado Springs; Salt Lake City). Only the counties of Denver, Des Moines, and Milwaukee (home to the cities of the same names) have social capital scores below the middle fifth; Milwaukee's is in the bottom fifth.

Just four other counties in the Mid-Continent North have social capital scores in the bottom fifth; with Milwaukee, they comprise one percent of this bloc's counties. All three are thinly populated. Crowley County, Colorado—population around 5,500—has the distinction of being the county with the highest share of residents who are incarcerated (thanks to a state prison there). Rolette County, North Dakota has a poverty rate exceeding 30 percent, and three-quarters of its 15,000 residents are Native American. Buffalo County, South Dakota has only 2,000 residents, is home to the Crow Creek Indian Reservation, and has a poverty rate approaching 40 percent. Only seven counties in America have a higher concentration of Native Americans than these two. One of them is Oglala Lakota County, also in South Dakota, and also in the bottom fifth of social capital. Oglala Lakota County is home to the Pine Ridge Indian Reservation and 91 percent of its 15,000 residents is Native American (highest in the nation). It has a 54 percent poverty rate.

Aside from the Mid-Continent North, the other three states with social capital scores putting them in the top twelve are in Northern New England: Maine, New Hampshire, and Vermont. This bloc is also very rural, with only one city having more than 100,000 people (Manchester, New Hampshire). No county in Northern New England has social capital levels below the middle fifth. In contrast, 40 percent of the counties are in the top fifth of social capital (containing 43 percent of the region's top-fifth-county population). The counties including Burlington, Vermont; Portsmouth, New Hampshire; and Portland, Maine are all in the top fifth of counties, while Manchester is in the second-highest fifth. The three states include five percent of Americans living in top-fifth counties (and three percent of top-fifth counties), despite being home to just one percent of the US population.

Together, these two regions comprise nine percent of the American population and 19 percent of counties, but 56 percent of Americans living in top-fifth counties and 66 percent of top-fifth counties.

The top twelve states tend to rank highly on all of the dimensions of social capital. There are a total of 84 state subindex scores in the group (seven subindices multiplied by 12 states). Of these scores, 55 are ranked in the top 12 for the subindex (65 percent). For each subindex, the top 12 includes between six and eight states that are in the top 12 for the overall social capital index, except that the top 12 states by the social support subindex include the top 11 states ranked on overall social capital (and the 12th state in the overall ranking is 16th in terms of social support).

Utah ranks first in terms of family unity, social support, and philanthropic health, and Minnesota ranks first in terms of institutional health. Minnesota and New Hampshire are in the top 12 on all seven dimensions, and Utah is for all but institutional health where it is only ranked 30th. Vermont is top ranked in terms of family interaction and collective efficacy. Washington, D.C.—ranked 37th on the overall index—comes in at the top in terms of community health, a function of the high concentration of non-profit organizations and the high informal civic engagement (both related to its being the nation's capital). Maine manages to place 6th on the strength of its family interaction and collective efficacy, despite mediocre scores on family unity, institutional health, and philanthropic health.

The Bad: The Far South and New York

Of the 11 states with the lowest levels of social capital, 10 of them are included in a contiguous bloc of states running from Nevada (ranked 2nd worst), Arizona, and New Mexico, across Texas to Louisiana (ranked worst) and Arkansas, then over to Mississippi, Alabama, Georgia, and Florida. These states—comprising a region we dub the Far South—contain the entire southern border of the United States, save California's border with Mexico. They include states with generally low levels of social capital—such as Louisiana, Nevada, Arizona, and New Mexico—as well as some with counties that have somewhat higher levels.

The Far South includes a number of the most populous counties in the nation. Nearly all of these large counties have social capital scores that put them in the bottom fifth of counties. They encompass the cities of Las Vegas and Reno, Nevada; Phoenix and Tucson in Arizona; Albuquerque, New Mexico; Texas cities Dallas, Fort Worth, San Antonio, Houston, El Paso, and McAllen; New Orleans; Birmingham, Alabama; Jackson, Mississippi; Atlanta; and, in Florida, Miami, Fort Lauderdale, Fort Myers, St. Petersburg, Orlando, Daytona Beach and Jacksonville. The only counties of the largest ones that are not in the bottom fifth are those home to Austin and its suburbs and counties partly encompassing suburban Houston, Dallas, and Atlanta.

Exactly 10 counties in these 10 states have a social capital score that puts them in the top fifth of counties (six in Texas); they account for one-half of one percent of the counties in the Far South with non-missing scores. They share relative high scores on the family unity subindex, but are not otherwise easily characterized.

The counties in the bottom fifth are home to 67 percent of the bloc's population. They also include 46 percent of the American population living in bottom-fifth counties, comprising 62 percent of those counties.

The only state outside this group in the bottom 11 is New York. Social capital levels are low in a number of the largest Empire State counties, including the five boroughs of New York City and the counties that are home to Buffalo and Niagara Falls. The counties including Rochester and Syracuse fare only slightly better.

All told, the Far South and New York include one-third of Americans but 54 percent of Americans living in the bottom fifth of counties (and 64 percent of bottom-fifth counties).

These eleven states tend to rank poorly on all of the dimensions of social capital. Of the 77 state subindex scores in the group, 50 are ranked in the bottom 11 for the subindex (65 percent). The only subindex not heavily dominated by bottom-eleven states is the collective efficacy dimension (violent crime), where just five of the states are in the bottom 11 on the subindex. But even on that dimension, five states fall in the next-worst 10 states in terms of overall social capital.

The bottom four states—Louisiana, Nevada, New Mexico, and Florida—include the states that scored worst on family interaction, social support, community health, institutional health, and philanthropic health. Louisiana stands alone in having subindex scores in the bottom seven states for all seven subindices. Nevada is in the bottom three states for five of the seven subindices.

The Rest

Three distinct tiers emerge between these 23 states at the top and bottom of the social capital distribution.

The Second Tier: The Northwest, Southern New England, Kansas, and Virginia

Below the top group are ten states, five of which are in the Northwest and three of which are in Southern New England. Montana, Idaho, Oregon, and Washington connect to the Mid-Continent North to extend the bloc of relatively-high-social-capital states (with Alaska also in the Northwest). Only five percent of the American population lives in Northwestern states, and only six percent of counties are in the bloc. There are few major cities in the Northwest; the counties that are home to Portland, Seattle and its northern suburbs, Tacoma, Spokane, Boise, and Anchorage all fall in the middle three-fifths of counties.

Of the bloc's 179 counties with a social capital score, just four lie in the bottom fifth of counties. In all four, American Indians and Alaska Natives constitute between 52 and 68 percent of the population. Combining the 14 states of the Northwest and the Mid-Continent North, the group has only nine counties in the bottom fifth of social capital. Seven of them are majority-Native American, one has a prison that makes up a fifth of the population, and the other is Milwaukee.

In contrast, 27 percent of Northwestern counties are in the top fifth, though because they are rural they account for only four percent of the bloc's population and for only two percent of the nation's population living in top counties.

The Southern New England states are home to four percent of the American population but 10 percent of the population living in top-fifth counties. The six counties that are in the top fifth include relatively affluent areas outside New York City, New Haven, Providence, and Boston. Two counties in the bloc are in the bottom fifth—those including Boston and Springfield, Massachusetts. The counties containing Bridgeport, New Haven, and Hartford, in Connecticut; Providence, Rhode Island, and most of suburban Boston all fall between the top and bottom fifth.

Two other states are included in this second tier. Kansas borders the contiguous Northwest/Mid-Continent North grouping. Its generally high-social-capital counties are offset by Wichita's below-average score. No county in Kansas falls in the bottom fifth. Virginia includes 10 percent of the American population living in top-fifth counties, many of them in suburban Washington, D.C. The state has seven counties or independent cities in the bottom fifth, including the cities of Richmond, Norfolk, and Portsmouth.

One in five people in the aggregated second tier live in a top-fifth county. The tier includes 14 percent of American counties, 23 percent of top-fifth counties, and just two percent of bottom-fifth counties. It is home to 12 percent of the nation's

population, 27 percent of the population in top-fifth counties, and two percent of the population in bottom-fifth counties. The 22 states in the first and second tier of social capital include four out of five people living in top-fifth counties.

The Middle: The Midwest and Mid-Atlantic, and Hawaii

A middle tier of nine states includes eight that are contiguous—the Midwestern and Mid-Atlantic states stretching from Missouri through Illinois and Indiana, up to Michigan and across Ohio and Pennsylvania, over to New Jersey, and down to Maryland. This bloc has 23 percent of the national population, but only 15 percent of the American population living in top-fifth counties, and 15 percent of the population living in bottom-fifth counties. Within the bloc, bottom-fifth counties contain much more of the population (26 percent) than top-fifth blocs (5 percent).

In fact, nearly all of the largest cities in this bloc are in counties that rank in the bottom fifth, including Kansas City, St. Louis, Chicago, Indianapolis, Detroit, Cleveland, Toledo, Philadelphia, Baltimore, and Newark. Other large counties also rank in the bottom fifth—Prince George's County, Maryland, outside Washington D.C., and the New Jersey counties containing Jersey City, Paterson, and Camden. Only one large county—Morris County in northern New Jersey—has a social capital score in the top fifth. Other large counties tend to fall in the middle of the social capital distribution. These include suburbs of St. Louis, Chicago, Detroit, Philadelphia, Washington D.C., Baltimore, and New York City. They also include the counties containing Gary, Indiana; Grand Rapids, Michigan; Columbus, Cincinnati, Akron, and Dayton in Ohio; and Pittsburgh and the New Jersey counties of Bergen, Middlesex, Union, Ocean, and Monmouth.

Rounding out the middle tier is Hawaii. When it is added to the Midwestern/ Mid-Atlantic bloc, the middle tier includes 24 percent of Americans, 15 percent of Americans living in top-fifth counties, and 15 percent of Americans living in bottom-fifth counties.

The Fourth Tier: The Near South, Delaware, and the District of Columbia

Moving further down the social capital continuum, we arrive at a group of nine states that fare better than those in the bottom tier. However, seven of the nine border those worse-off states, extending the zone of low social capital northward but leaving it largely southeastern and southwestern. California, Oklahoma, Tennessee, Kentucky, West Virginia, North Carolina, and South Carolina are included in what we term the Near South.

The Near South is home to 22 percent of the American population, and it includes 28 percent of Americans living in the bottom fifth of counties. In contrast, it contains just one percent of those living in the top fifth. Fully half the counties in the Near South are in the bottom fifth of social capital, while just seven—less than one half of one percent of them—are in the top fifth. What is more, these seven are generally rural areas, with the exception of one including suburban Nashville. Not a single county in California or North Carolina is in the top fifth. California

accounts for 63 percent of the people in bottom-fifth counties in the Near South (versus 55 percent of all people in the Near South).

Several major Near South cities are in counties that are among the bottom fifth: in California, Los Angeles, San Bernardino, Oakland, Sacramento, Fresno, Bakersfield, Stockton, and Modesto; in Oklahoma, Oklahoma City and Tulsa; and in Tennessee, Nashville and Memphis. Faring better were the California counties San Diego, Orange (Anaheim, Irvine), Riverside, Santa Clara (San Jose), Contra Costa, Ventura, San Mateo, and Sonoma; as well as North Carolina counties Guilford (Greensboro), Mecklenburg (Charlotte), and Wake (Raleigh), and South Carolina counties Greenville and Charleston.

The 17 states of the Far South and Near South include 45 percent of Americans but 74 percent of Americans in bottom-fifth counties (and just three percent of those in top-fifth counties). Six in 10 (59 percent) of people in these 17 states live in bottom-fifth counties. Less than one-half of one percent live in top-fifth counties. Indeed, only 17 of 1,338 counties in these states are in the top fifth.

The other two states in this second-to-worst tier are Delaware and the District of Columbia (technically not a state, of course). With New York, they are the only states in the bottom 20 that are not part of the southwestern-southeastern axis. The District of Columbia is in the bottom fifth of counties, while the county that is home to Wilmington, Delaware fares a bit better. The tier as a whole includes 23 percent of Americans, 29 percent of Americans in bottom-fifth counties, and one percent of those in top-fifth counties.

VALIDATING THE SOCIAL CAPITAL INDICES

The importance of these new findings on the geographic distribution of social capital depends on the extent to which our state and county indices accurately measure something corresponding with the health of associational life or the "stock" of social capital in different places. Some reassurance is provided by several results already mentioned. The subindices are all fairly strongly correlated with the indices. At the state level, the correlations of the seven subindices with the index range from 0.55 to 0.89. At the county level, the index correlations with the four subindices range from 0.65 to 0.76. Further, the states with the highest and lowest social capital scores also generally have subindex scores that rank them highly or lowly.

The results also align with previous research on social capital. The 15 best states on our index are also the 15 best states on Robert Putnam's from *Bowling Alone*, despite the measures being different and Putnam's being based on older data. Our top five states are ranked 14th (Utah), 4th (Minnesota), 11th (Wisconsin), 8th (New Hampshire), and 3rd (Vermont). There is less of a correspondence at the lower end of the social capital distribution. Of our bottom 15 states, nine are in Putnam's

bottom 15. Our lowest five states are ranked 8th from the bottom (Louisiana), 4th from the bottom (Nevada), 19th from the bottom (New Mexico), 16th from the bottom (Florida), and 31st from the bottom. Overall, however, the correlation between Putnam's index and ours is very high—0.81.

Alesina and La Ferrara (2000) display a map of social capital that ranks nine states in the topmost category. Those states are all in the top 13 on our list. Their bottom category includes 19 states, and those 19 states contain all of the states in our bottom 20 except for Nevada and New Mexico (where Alesina and La Ferrara report no estimate) and California (which they rank in the second-to-worst tier). Of the states in their bottom tier, only Maryland and Rhode Island are outside our bottom twenty.

At the county level, the correlation between our index and Penn State's 2014 index was 0.56. To assess the validity of our indices further, and to determine whether they are, in fact, better than the available alternatives, we compiled state- and county-level benchmarking data on a wide range of variables related to demographics, economics, health, education, policy, and even climate and geography. We estimated simple bivariate correlations between, on the one hand, our social capital indices and those of others against, on the other hand, these benchmarks. We emphasize that establishing causal connections between social capital and these benchmarks is a more complicated task and beyond the scope of this report.

State Validation

Table 4 displays the bivariate correlations comparing various indices and subindices to 59 different state-level benchmarks. It includes (across the columns of the table) our state-level social capital index, our (constructed) state-level version of Penn State's index, Putnam's index from *Bowling Alone*, and our seven subindices.[39] The benchmarks are loosely organized into groups of indicators. See Appendix Table A2 for the sources behind the benchmarks and detailed descriptions.

Table 4. Benchmarking the State Social Capital Index (Bivariate Correlations)

	Social Capital Index	Penn State Index	Putnam Index	Subindices						
				Family Unity	Family Interaction	Social Support	Community Health	Institutional Health	Collective Efficacy	Philanthropic Health
Putnam social capital score	0.81	0.66		0.70	0.72	0.75	0.84	0.53	0.55	0.60
Alesina social capital groups (four)	0.81	0.56	0.82	0.74	0.59	0.77	0.73	0.56	0.38	0.72
Family Prosperity Index (Family Prosperity Institute)	0.65	0.19	0.57	0.84	0.37	0.53	0.39	0.50	0.39	0.62
Unemployment rate	-0.63	-0.21	-0.76	-0.65	-0.40	-0.67	-0.26	-0.44	-0.52	-0.34
Prime-age male labor force participation	0.70	0.29	0.68	0.63	0.56	0.42	0.45	0.60	0.22	0.75
Teen idleness	-0.75	-0.27	-0.68	-0.55	-0.67	-0.58	-0.30	-0.69	-0.55	-0.60
Percent of adults incarcerated	-0.58	-0.41	-0.59	-0.31	-0.67	-0.40	-0.55	-0.43	-0.18	-0.48
Median household income	0.36	0.16	0.35	0.29	0.36	0.07	0.40	0.35	-0.05	0.48
Percent poor	-0.72	-0.14	-0.64	-0.68	-0.58	-0.46	-0.39	-0.62	-0.38	-0.68
Percent with debt in collections	-0.82	-0.35	-0.87	-0.66	-0.68	-0.63	-0.55	-0.61	-0.45	-0.68
Percent w/ housing costs exceeding income by 35%+	-0.30	-0.23	-0.29	-0.27	-0.08	-0.53	-0.11	-0.23	-0.19	-0.14
Pct of children in hh's with means-tested benefits	-0.71	-0.02	-0.63	-0.84	-0.46	-0.49	-0.21	-0.55	-0.50	-0.65
Population in distressed ZIP codes (EIG)	-0.76	-0.22	-0.85	-0.75	-0.62	-0.59	-0.52	-0.50	-0.40	-0.61
Pct poor in the block group of average poor person	-0.66	-0.16	-0.68	-0.64	-0.55	-0.42	-0.49	-0.47	-0.24	-0.61
Pct rich in the block group of average rich person	0.06	0.03	0.01	0.05	0.10	-0.24	0.15	0.19	-0.21	0.28
Ratio of 80th percentile of hh income to 20th	-0.53	0.26	-0.58	-0.74	-0.24	-0.53	0.00	-0.31	-0.54	-0.42
Gini coefficient, household income	-0.60	0.08	-0.58	-0.68	-0.35	-0.62	-0.23	-0.34	-0.48	-0.46
Share of hh income received by top 5 percent	-0.46	0.05	-0.38	-0.47	-0.26	-0.50	-0.23	-0.23	-0.40	-0.32
Opportunity score (Opportunity Nation)	0.76	0.41	0.74	0.53	0.67	0.52	0.55	0.72	0.34	0.63
Relative immobility (Chetty et al., 2014)	-0.45	0.00	-0.61	-0.59	-0.44	-0.32	-0.39	-0.05	-0.17	-0.39
Absolute mobility (Chetty et al., 2016)	0.14	0.56	0.41	-0.13	0.13	0.19	0.31	0.16	-0.13	0.13
Percent of adults that graduated from high school	0.84	0.49	0.83	0.59	0.70	0.71	0.70	0.62	0.28	0.72
Percent of adults that obtained a bachelor's degree	0.32	0.44	0.39	0.02	0.46	0.06	0.57	0.31	-0.23	0.42
Rate of on-time high school graduation	0.37	-0.03	0.22	0.42	0.20	0.34	-0.13	0.47	0.53	0.14
Percent of adults with fair or poor health	-0.76	-0.43	-0.79	-0.50	-0.71	-0.54	-0.69	-0.56	-0.18	-0.72
Age-adjusted premature mortality	-0.58	0.02	-0.60	-0.59	-0.52	-0.30	-0.28	-0.40	-0.36	-0.58
Mortality rate from "deaths of despair"	-0.07	-0.13	-0.12	-0.02	0.04	0.12	0.02	-0.43	-0.01	-0.14
Percent of adults disabled	-0.37	-0.06	-0.44	-0.39	-0.29	-0.08	-0.22	-0.36	-0.04	-0.53
Percent diabetic	-0.73	-0.23	-0.75	-0.64	-0.66	-0.49	-0.52	-0.46	-0.30	-0.71
Percent obese	-0.32	-0.11	-0.40	-0.26	-0.43	-0.06	-0.39	-0.09	0.03	-0.44
Percent who smoke	-0.28	0.14	-0.27	-0.34	-0.28	-0.04	-0.19	-0.10	-0.05	-0.43
Percent of babies with low birth weight	-0.67	-0.04	-0.79	-0.72	-0.54	-0.50	-0.39	-0.40	-0.39	-0.54
Percent without health insurance	-0.47	-0.46	-0.50	-0.14	-0.45	-0.36	-0.42	-0.54	-0.18	-0.36
Median age	0.04	0.05	0.03	-0.11	0.20	-0.02	-0.08	0.10	0.33	-0.14
Percent of population under age 18	0.03	-0.47	-0.08	0.39	-0.29	0.16	-0.27	-0.10	0.14	0.12
Percent of population ages 65+	-0.10	-0.02	0.05	-0.14	0.00	-0.04	-0.21	-0.05	0.28	-0.27

Percent non-Hispanic white	0.64	0.28	0.59	0.48	0.51	0.72	0.28	0.47	0.55	0.33
Percent non-Hispanic black	-0.55	0.19	-0.69	-0.76	-0.42	-0.52	-0.13	-0.13	-0.57	-0.35
Percent Hispanic	-0.38	-0.46	-0.22	-0.08	-0.25	-0.45	-0.30	-0.52	-0.23	-0.17
Percent American Indian or Alaska Native	0.04	0.04	0.35	0.09	0.08	0.15	0.25	-0.26	-0.17	0.04
Percent Asian	-0.10	-0.25	-0.14	0.09	-0.17	-0.28	-0.14	-0.01	0.02	0.00
Percent Native Hawaiian or Other Pacific Islander	-0.03	-0.18	0.02	0.12	-0.14	-0.07	-0.05	-0.02	0.06	0.00
Percent other	-0.21	-0.11	-0.25	-0.28	-0.01	-0.34	-0.13	-0.03	-0.18	-0.09
Percent multiracial	-0.02	-0.14	0.12	0.12	-0.11	-0.09	0.02	-0.01	0.01	0.01
Black-white segregation	-0.40	0.03	-0.39	-0.47	-0.32	-0.44	-0.27	0.01	-0.42	-0.18
Percent foreign-born	-0.30	-0.35	-0.22	-0.07	-0.19	-0.55	-0.25	-0.19	-0.21	-0.08
Population size	-0.34	-0.38	-0.29	-0.08	-0.23	-0.46	-0.43	-0.15	-0.06	-0.33
Population density	-0.12	0.66	-0.17	-0.50	0.09	-0.18	0.52	0.02	-0.69	0.04
Percent in rural areas	0.22	0.23	0.20	0.08	0.23	0.42	0.17	0.10	0.35	-0.15
Mean travel time to work	-0.37	-0.22	-0.51	-0.36	-0.20	-0.53	-0.25	-0.14	-0.22	-0.23
Percent of housing owner-occupied	0.36	-0.16	0.26	0.38	0.17	0.53	-0.10	0.24	0.58	0.10
Median age of housing	-0.20	-0.51	-0.30	0.11	-0.33	-0.10	-0.34	-0.30	0.06	-0.15
Percent with internet subscription	0.55	-0.02	0.47	0.55	0.50	0.25	0.32	0.42	0.25	0.59
State and local government spending per capita	0.08	0.51	0.33	-0.15	0.29	-0.03	0.56	0.05	-0.44	0.08
Net migration	-0.09	-0.20	-0.15	-0.03	-0.10	-0.08	-0.08	-0.16	-0.10	0.06
Mean elevation	0.20	-0.21	0.22	0.45	0.14	0.21	0.09	-0.27	0.12	0.29
Mean temperature	-0.73	-0.28	-0.66	-0.58	-0.71	-0.58	-0.55	-0.37	-0.42	-0.64
Latitude	0.63	0.35	0.76	0.44	0.60	0.55	0.59	0.36	0.16	0.53
Longitude	-0.04	0.23	-0.19	-0.32	0.13	-0.05	-0.05	0.19	0.04	-0.12

Source: Social Capital Project. Download Data (xlsx)

The first group of indicators includes three indices of social capital. Our index is highly correlated with the Putnam and Alesina/La Ferrara indices, as well as the Family Prosperity Institute's Family Prosperity Index. It is more strongly related to these than the Penn State index is. It has essentially the same strength of relationship with the Alesina/La Ferrara index as does Putnam's index, and because Putnam's index does not incorporate family unity, our index is more strongly related to the Family Prosperity Index than Putnam's is.

The next set of indicators relates to employment. For all four benchmarks, the correlation with our index is greater than 0.5 (or less than -0.5), and for all four the correlation with our index is larger than the correlation with the Penn State index. Two of the four benchmarks are more strongly associated with our index than with Putnam's.

The five benchmarks in the next group are indicators of income and poverty. Three of five correlations with our index are below -0.5 or above 0.5. For each benchmark, the correlation with our index is stronger than the correlation with the Penn State index, and that is true of the correlation with the Putnam index for four out of five benchmarks.

Next, we show nine benchmarks related to segregation by income, inequality, and economic mobility. For five of these benchmarks, the correlation is above 0.5 (in absolute value), including the share of the state's population in ZIP codes deemed "economically distressed" by the Economic Innovation Group, and the opportunity score assigned to a state by Opportunity Nation. States with more inequality have lower social capital scores. States with more social capital have lower relative intergenerational immobility—the relative positions of children are more scrambled in adulthood given where they started. However, absolute mobility (exceeding one's parents' income) is only slightly higher in states with higher social capital scores. States where poor residents are concentrated have less social capital, but concentration of rich people is not related to social capital.

The correlations between inequality benchmarks and the Penn State index have the opposite sign as those for our and Putnam's indices. Only for absolute mobility is the Penn State correlation stronger than the correlation using our index. The Putnam index is related to all nine benchmarks in the same way that our index is. In fact, it more strongly correlates with five of the nine measures than our index does (though the difference is sizable for only three benchmarks).

The next three benchmarks are related to education. Our index is strongly correlated with the share of a state's population that graduated from high school, but less strongly correlated with obtaining a bachelor's degree or with on-time high school graduation rates. Both the Putnam and the Penn State indices are more strongly correlated with graduating from college than is our index, but the Penn State index is much less strongly correlated than ours is with graduating from high school.

We show nine benchmarks related to health. Our index is strongly correlated with being in only fair or poor health, dying prematurely, having diabetes, and giving birth to a low-birthweight baby. Mortality from "deaths of despair"—involving alcoholism, drug overdoses, or suicide—has no relationship with our index. Our index is more strongly correlated in the expected direction with six of the nine health benchmarks than is the Penn State index, and the Penn State index has the opposite sign we would expect for premature mortality and smoking. Putnam's index generally has somewhat higher correlations with health outcomes than ours.

The next group of benchmarks reveals that age has little to do with social capital. The exception is that states with fewer children have higher Penn State social capital scores, which is counter to the near-zero correlations shown by our index and Putnam's.

In the next grouping, we cross the Census Bureau's racial categories with its Hispanic ethnicity question. States with more non-Hispanic whites have higher social capital, and states with more African Americans and Hispanics have lower social capital. The Putnam correlations are generally consistent with ours and are

stronger for four of the eight groups. The Penn State index has the opposite sign relative to our and Putnam's indices for the share of the population that is African American.

Of note, in preliminary research, we also found that states with a large share of residents who identified their ancestry as "American" also have substantially lower social capital scores (on par with the correlation between social capital scores and the Hispanic share). Self-identified Americans are overwhelmingly comprised of southern whites.[40]

The reasons for correlations between ethnic shares and social capital are surely complicated. Historical oppression and ongoing discrimination could weaken social capital investment and institutions, particularly to the extent that it leaves a group with high poverty rates and concentrated residentially. Immigrants may bring to the United States a mix of values that reflects the history and culture of their countries of origin or that reflects the unique values of the self-selected group of people that left their homeland for a new life—values that might strengthen or weaken social capital. Alternatively, communities with many newcomers to the country might be in a state of flux, as those newcomers assimilate and as institutions such as schools and churches experience shifts in composition. That could weaken social capital. Indeed, diversity itself may weaken some dimensions of social capital, as some research suggests, simply by creating barriers to easy social cooperation.

That places with larger black populations have lower social capital may reflect the deleterious consequences of racial segregation. The next grouping in Table 4 shows that states with greater segregation between blacks and non-Hispanic whites have lower social capital. Similarly, the lower social capital in states with bigger Hispanic populations may reflect the unique challenges of immigrant communities. The share of the population comprised of foreign-born residents is associated with lower state social capital levels.[41] Our social capital index reflects these correlations somewhat more strongly than do the other two indices, except that the Penn State index indicates a stronger correlation for the share foreign born.

The final grouping is a grab bag of 13 indicators. More social capital is strongly associated with more internet subscribers (counter to the notion that technology hurts social capital), lower average temperatures, and being further from the equator. The latter two are obviously related, and they are unsurprising given the pattern of northern states having high social capital levels and southern states having low levels.

The other correlations are weaker, but social capital is higher in states that are less dense, more rural, and higher above sea level, and in states with more homeowners, newer housing, and shorter commutes. It is mostly unrelated to greater state and local government spending (counter to the notion that greater independence from the federal government yields greater social capital) or to

net migration (counter the notion that more-rooted communities have stronger social capital). For eight of the 13 indicators, the correlations are stronger using the Putnam index than ours. For six of the 13, the correlations using the Penn State index are stronger than using ours. For another five, the Penn State correlations are in the opposite direction versus our and Putnam's indices.
Of the 59 benchmarks in Table 4, the correlation with our social capital index was over 0.5 for 25 of them. That was also true of 24 correlations of benchmarks with our family unity subindex, and the social support subindex was close behind at 22. The correlation was over 0.5 for 20 of the 59 benchmarks when comparing them with the philanthropic health subindex, and that was true in 18 cases looking at the family interaction subindex.

Of the 25 benchmark correlations with our index that were over 0.5 (or below -0.5), 12 were stronger using the index than using any of the seven subindices. Eight times, the family unity subindex is more strongly correlated with a benchmark than the index, and that is true three times for the social support subindex, two times for the philanthropic health and collective efficacy subindices, one time for the family interaction and community health subindices, and never for the institutional health subindex. The fact that the index usually appears to provide more predictive power than the individual subindices is another indication that the index measures something corresponding with social capital in a way that is an improvement on the individual subindices. It is also reassuring that the correlations of the index with benchmarks do not appear to be driven by one or two of the subindices.

Of the 18 benchmarks where the correlation with the Penn State index is greater than 0.30 (or less than -0.30), our index has a stronger correlation with the benchmark in nine instances. Of the 18 benchmarks where the correlation with the Putnam index is greater than 0.60 (or less than -0.60), our index has a stronger correlation in just seven instances. Our index appears to improve on the Penn State methodology, but if the association with benchmark variables is the sole criterion, our index is not an obvious improvement on the Putnam index.

However, we prefer our index for several reasons. First, substantively, our index, unlike the *Bowling Alone* index, reflects the health of family life—a dimension of social capital that has been overlooked in past research on social capital *per se*. We equate high levels of social capital with the health of our associational life—our "middle layers" between the individual and the state. As Yuval Levin has described, the middle layers begin in loving family attachments. They spread outward to interpersonal relationships in neighborhoods, schools, workplaces, religious communities, fraternal bodies, civic associations, economic enterprises, activist groups, and the work of local governments. They reach further outward toward broader social, political, and professional affiliations, state institutions, and regional affinities. And they conclude in a national identity that among its foremost attributes is dedicated to the principle of the equality of the entire human race.[42]

Whatever social capital is, it is difficult to justify leaving out the part that exists and is maintained in families. Practically, our index is also based on up-to-date data that is freely available (and, therefore, readily updateable). All this said, it is striking that Putnam's landmark attempt nearly two decades ago to measure social capital holds up so well that it correlates with contemporary benchmarks at least as well as our measure does, and often better. And the fact that our and Putnam's different approaches to measuring social capital produced similar results—the correlation between the two measures is 0.81—is reassuring; both indices apparently capture the same underlying construct.

Unfortunately, the Penn State county-level index does not appear so robust.

County Validation

In Table 5, we show bivariate correlations for county-level variables, comparing our index, the Penn State index, and our subindices to 50 different benchmarks. The Penn State index is the 2014 version of the index available on the website of the Northeast Regional Center for Rural Development.[43]

The first row shows the correlation of our index and subindices with the Penn State index. The correlation of the two indices is 0.56, and our community health index has the strongest association with the Penn State index. That reflects the fact that both are built, in part, on IRS data on nonprofit organizations. Similarly, there is a moderate correlation between our institutional health subindex and the Penn State index, since both are partly built on presidential voting rates and census response rates. The family unity and collective efficacy subindices are only weakly related to the Penn State index, since the latter does not attempt to measure those dimensions of social capital.

Table 5. Benchmarking the County Social Capital Index (Bivariate Correlations)

	Social Capital Index	Penn State Index	Subindices			
			Family Unity	Community Health	Institutional Health	Collective Efficacy
Penn State social capital score	0.56		0.22	0.79	0.43	0.23
Unemployment rate	-0.57	-0.40	-0.53	-0.38	-0.32	-0.34
Prime-age male labor force participation	0.44	0.26	0.40	0.22	0.47	0.16
Teen idleness	-0.55	-0.30	-0.45	-0.30	-0.45	-0.36
Median household income	0.41	0.09	0.50	0.01	0.41	0.16
Percent poor	-0.63	-0.34	-0.65	-0.26	-0.51	-0.33
Percent with debt in collections	-0.77	-0.49	-0.61	-0.52	-0.63	-0.43
Percent w/ housing costs exceeding income by 35%+	-0.43	-0.26	-0.37	-0.33	-0.13	-0.36

Pct of children in hh's receiving means-tested benefits	-0.71	-0.16		-0.79	-0.15	-0.49	-0.47
Population in distressed ZIP codes (EIG)	-0.50	-0.25		-0.50	-0.22	-0.41	-0.26
Percent poor in the block group of average poor person	-0.62	-0.29		-0.62	-0.26	-0.46	-0.38
Percent rich in the block group of average rich person	0.09	-0.08		0.26	-0.21	0.24	-0.09
Ratio of 80th percentile of hh income to 20th percentile	-0.51	-0.20		-0.50	-0.21	-0.36	-0.33
Gini coefficient, household income	-0.44	-0.11		-0.43	-0.15	-0.28	-0.32
Share of hh income received by top 5 percent	-0.19	0.03		-0.20	-0.02	-0.08	-0.19
Opportunity Score (Opportunity Nation)	0.66	0.45		0.55	0.38	0.60	0.34
Relative immobility (Chetty et al., 2014)	-0.46	-0.18		-0.51	-0.30	-0.20	-0.29
Percent of adults that graduated from high school	0.54	0.40		0.41	0.36	0.54	0.22
Percent of adults that obtained a bachelor's degree	0.25	0.15		0.28	0.07	0.35	0.01
Rate of on-time high school graduation	0.31	0.03		0.35	0.05	0.13	0.30
Percent of adults with fair or poor health	-0.68	-0.44		-0.60	-0.37	-0.59	-0.34
Age-adjusted premature mortality	-0.55	-0.29		-0.53	-0.20	-0.48	-0.28
Mortality rate from "deaths of despair"	-0.25	-0.10		-0.26	0.10	-0.40	-0.07
Percent of adults disabled	-0.39	-0.27		-0.37	-0.19	-0.42	-0.13
Percent diabetic	-0.39	-0.19		-0.46	-0.22	-0.24	-0.16
Percent obese	-0.26	-0.15		-0.34	-0.14	-0.11	-0.13
Percent who smoke	-0.45	-0.32		-0.48	-0.21	-0.36	-0.21
Percent of babies with low birth weight	-0.57	-0.24		-0.57	-0.27	-0.34	-0.36
Percent without health insurance	-0.44	-0.27		-0.35	-0.15	-0.50	-0.20
Median age	0.32	0.41		0.09	0.40	0.21	0.26
Percent of population under age 18	-0.13	-0.28		0.02	-0.24	-0.12	-0.08
Percent of population ages 65+	0.22	0.41		0.01	0.39	0.08	0.21
Percent non-Hispanic white	0.61	0.30		0.54	0.30	0.39	0.47
Percent non-Hispanic black	-0.55	-0.16		-0.63	-0.29	-0.14	-0.46
Percent Hispanic	-0.25	-0.19		-0.03	-0.17	-0.34	-0.15
Percent American Indian or Alaska Native	-0.10	-0.08		-0.20	0.11	-0.17	-0.02
Percent Asian	-0.04	-0.11		0.08	-0.14	0.06	-0.14
Percent Native Hawaiian or Other Pacific Islander	-0.02	-0.05		0.02	-0.01	-0.04	-0.04
Percent other	-0.13	-0.09		-0.07	-0.12	-0.06	-0.12
Percent multiracial	-0.07	-0.07		-0.02	0.00	-0.10	-0.12
Black-white segregation	-0.30	-0.25		-0.22	-0.34	-0.13	-0.23
Percent foreign-born	-0.15	-0.18		0.06	-0.22	-0.11	-0.18
Population size	-0.15	-0.14		-0.02	-0.20	0.00	-0.22
Population density	-0.10	-0.05		-0.05	-0.07	-0.01	-0.16
Percent in rural areas	0.27	0.25		0.07	0.40	0.00	0.34
Mean travel time to work	-0.12	-0.22		-0.02	-0.21	-0.13	0.03

Mean travel time to work	-0.12	-0.22		-0.02	-0.21	-0.13	0.03
Percent of housing owner-occupied	0.42	0.16		0.36	0.14	0.21	0.43
Median age of housing	-0.30	-0.47		-0.07	-0.50	-0.24	-0.10
Net migration	0.00	-0.08		0.02	-0.10	-0.02	0.08
Mean temperature	-0.54	-0.32		-0.33	-0.46	-0.40	-0.32

Source: Social Capital Project. Download Data (xlsx)

The correlation of our index with the benchmarks is greater than 0.5 (or less than -0.5) for 17 of the 50 benchmarks, while the Penn State correlations are never above that threshold. For 38 of the benchmarks, our index has a stronger correlation than the Penn State index. The Penn State correlations are stronger for nine benchmarks, and the two indices' correlations are signed in opposite directions for three benchmarks. Of the 12 benchmarks that are correlated with the Penn State index at a level greater than 0.30 (or less than -0.30), the correlation of the benchmark with our index is stronger in nine instances.

Our social capital index is more strongly correlated with all three of our employment benchmarks than is the Penn State index and with all five of our income and poverty benchmarks. For five of the eight, the correlation with our index is greater than 0.5 (or less than -0.5).

Next, Table 5 shows eight benchmarks related to segregation by income, inequality, and economic mobility. The correlation between our index and the benchmarks is below -0.5 for four of the eight. There is little relationship between the extent to which a county's rich residents are concentrated together and its social capital score. The three education benchmarks are all correlated with our index in the expected direction, and the association with high school graduate shares is particularly large.

Three of nine health benchmarks are correlated with our index at less than -0.5. All nine correlations are in the expected direction. As in our state validation analyses, our county index is not strongly correlated with age. However, the Penn State index is moderately correlated with the three age benchmarks.

The race/ethnicity correlations are uniformly consistent with the state-level validation results, as are the black-white segregation and foreign-born correlations. The eight "grab-bag" benchmarks all show similar correlations with our county index as they do with our state index.

Across the 50 county-level benchmarks, the correlations with our subindices were generally lower than was the case at the state level, possibly reflecting the relative dearth of county-level measures available related to social capital. The family unity subindex was correlated with 16 benchmarks at a level of more than 0.50 (or less

than -0.50). Just five correlations were that strong using the institutional health subindex, only two using the community health subindex, and none using the collective efficacy subindex.

Looking at the 17 benchmarks where the correlation with our social capital index is above 0.5 (or below -0.5), our social capital index is more strongly correlated with the benchmark than any of the four subindices are for 11 of them. For six benchmarks, at least one subindex correlates more strongly than does our overall index. In five instances, it is the family unity subindex that is more strongly correlated. The community health subindex is more strongly correlated with one benchmark than the overall index is. Once again, the index appears to provide more predictive power than the individual subindices.

To sum up, while our county-level social capital index is an unambiguous improvement on the Penn State index, it does seem to measure social capital levels less well than our state-level index does. It would be better to have more county-level data related to social capital than currently exists.

CONCLUSION

Despite the theoretical importance of social capital for understanding our national challenges and for crafting effective public policies, past efforts to measure the concept have suffered from a number of problems. These range from overly narrow or broad conceptualizations of "social capital," to data unavailability at the state or county levels, to out-of-date data, to the inaccessibility of non-public data. Our state and county social capital indices rectify these problems to a large degree. It is our hope that by making our data publicly available, researchers may be inspired to relate social capital to any number of other aspects of American life and to policy-relevant outcomes.

Social capital is markedly unequally distributed across the United States. A clear "north-south" divide is apparent, and the clustering of states into similar contiguous blocs suggests that geographic differences may have deep-seated roots in historical immigration and internal migration patterns, regional culture, and perhaps even features of climate and topography.

While our county-level index is a clear improvement on the only other county measure available, from Penn State University, the evidence we have accumulated suggests that a lack of data at the county level on indicators related to social capital reduces the accuracy of local estimates. Adding more social capital measures to surveys such as the American Community Survey or the Current Population Survey could greatly improve county estimates.

Nevertheless, we are reassured by a number of findings detailed in this report. When we mimicked the county-level approach at the state level, the resulting state index and our preferred state index were correlated at 0.96. When we averaged county-level scores in each state, weighting by the county population, the resulting state averages correlated with our preferred state index at 0.95, and the correlation between the state estimates mimicking the county approach and the state averages of county estimates was 0.98. The fact that Robert Putnam obtained similar results nearly 20 years ago using very different data and measures also suggests that it is possible to measure something meaningful that corresponds with social capital

Having constructed these indices, the Social Capital Project, in future work, will attempt to explain the geographic patterns identified here and to explore in greater depth the relationship between social capital and a variety of outcomes. There is clearly much to learn, and just as clearly, the regional inequalities we have uncovered demand that policymakers and researchers better understand the distribution of social capital in America.

APPENDIX

In this appendix, we provide greater detail about the process used to select the measures that go into our social capital indices and subindices. Our objective is to be as transparent as possible about the process. We also detail the source data for our benchmarks. Finally, we provide additional maps of social capital and its components at the state and county levels.

State Analyses

We began with the list of indicators shown in Appendix Table A1, below. We standardized all variables and reversed the polarity (multiplying by -1) for 21 of them so that higher standard scores always indicated more "social capital."

We started with some initial analyses estimating Cronbach's alpha and using principal components analysis, using both county- and state-level analyses. These gave us a general sense of the domains of social capital that appeared using inductive methods. We then attempted to determine how to best measure the underlying concept reflected in these domains.

Family Health

We constructed four measures of "adverse childhood experiences,"[44] from the National Survey of Children's Health (NSCH).[45] One indicated the average number out of nine items experienced by a child, one dropped three items not related to experiences in a child's household and indicated the average number of the remaining six experienced, one measured the share experiencing at least one of the six experiences, and a fourth measured the average number of items from four related to parental behavioral problems. They all correlated with each other at above 0.90. We retained the one including just four problems, which excludes parental divorce (already addressed in other variables), parental death, poverty (only indirectly about family interactions), neighborhood violence, and discrimination (both involving outside-the-home experiences).

The share of families with children with a single parent and the share of children in families headed by a single parent, both from the Census Bureau's American Community Survey (ACS), were correlated at 0.99.[46] We dropped the former.

Looking at the percent of births to unwed mothers, percent of women married, and percent of children in single-parent families, all from the ACS, the alpha was 0.95. Adding the percent of women never married (ACS) and the percent of children experiencing divorce (NSCH) lowered it to 0.88. Adding only the percent never married lowered it to 0.93. Adding both plus the share eating dinner with their family (from the September 2013 Volunteer Supplement to the Current Population Survey[47]) lowered it to 0.84. Adding only the nonmarital fertility rate (from the ACS) lowered it to 0.87.

Looking at the percent of births to unwed mothers, the nonmarital fertility rate, and the percent of children in single-parent families, the alpha was 0.83. It rose to 0.85 if the percent of children experiencing divorce was added. It rose to 0.87 if percent married was added instead. It fell if the percent in one-person households, percent never married, or having dinner with one's family was added. It rose to 0.95 if the nonmarital fertility rate was dropped. The percent of births that were to unmarried women correlated much more strongly with other family indicators than the nonmarital fertility rate.

Appendix Table A1a. Social Capital Indicators Considered (State and County-Level)

Indicator	Data Source	Notes
Share of births in past year to women who were unmarried	American Community Survey, 2012-2016, 5-year estimates; 2007-2011, 5-year estimates for 27 counties in 8 states	American FactFinder Table S1301
Unmarried women 15-50 with birth in past year per 1,000 unmarried women 15-50	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02
Share of households with just one person	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S2501
Share of women ages 35-44 who are currently married (and not separated)	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of women ages 45-54 who have never married	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of families with children headed by a single parent	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Tables B11003 & B11014
Share of own children living in a single-parent family	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B09002
Religious adherents per 1,000	U.S. Religion Census: Religious Congregations and Membership Study, 2010, County and State files	data obtained via Association of Religious Data Archives, census conducted 2009-2011
Congregations per 1,000	U.S. Religion Census: Religious Congregations and Membership Study, 2010, County and State files	data obtained via Association of Religious Data Archives, census conducted 2009-2011
Membership organizations per 1,000	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
Recreation and leisure establishments per 1,000	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
"Associations" per 1,000 using the Penn State definition	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
Registered non-religious non-profit organizations per 1,000	IRS, Business Master File, 12/2015; ACS population estimates, 7/2015 (2015 vintage)	via National Center for Charitable Statistics & American FactFinder Table PEPANNRES
Registered non-religious non-profits plus religious congregations per 1,000	Same, plus U.S. Religion Census: Religious Congregations and Membership Study, 2010	same, congregation data obtained via Association of Religious Data Archives
Average (over 2012 and 2016) of votes in the presidential election per citizen age 18+	Election Administration and Voting Survey; ACS, 2012-2016, 5-year estimates	U.S. Election Assistance Commission; counties: EAVS voting combined with American FactFinder Table B05003 estimates of citizens 18+; votes unavailable for Alaska counties, which we assign the statewide voting rate; states: EAC rates based on citizen estimates from 2010 decennial census and ACS
Mail-back response rates for 2010 census	Census Bureau	County estimates via University of Michigan Population Studies Center, Institute for Social Research
Share saying they get the emotional support they need only sometimes, rarely, or never	Behavioral Risk Factor Surveillance System	Counties via County Health Rankings (2014 edition), based on 2005-10 BRFSS data; county samples not necessarily representative; states: from analysis of BFRSS microdata, 2006 & 2010

Source: Social Capital Project.

Appendix Table A1b. Social Capital Indicators Considered (State-Level Only)

Indicator	Data Source	Notes
Share of adults saying they attend religious services at least once a week	Pew Religious Landscape Study, 2014	Pew Research Center
Share saying they participate in prayer, scripture study or religious education groups at least 1x/week	Pew Religious Landscape Study, 2014	Pew Research Center
Share of children whose parents reported they experienced divorce	National Survey of Children's Health, 2016	
Share whose parents reported they experienced the death of a parent	National Survey of Children's Health, 2016	
Share whose parents reported they experienced parental incarceration	National Survey of Children's Health, 2016	
Share whose parents reported they experienced domestic violence	National Survey of Children's Health, 2016	
Share whose parents reported they lived with someone with a mental health issue	National Survey of Children's Health, 2016	
Share whose parents reported they lived with alcohol or drug abuser	National Survey of Children's Health, 2016	
Share whose parents reported they witnessed neighborhood violence	National Survey of Children's Health, 2016	
Average number of adverse childhood experiences parents report their children experienced (of 4)	National Survey of Children's Health, 2016	experiencing alcohol/drug abuse, domestic violence, parental incarceration, & mental health issues
Average number of adverse childhood experiences parents report their children experienced (of 6)	National Survey of Children's Health, 2016	adds experiencing parental death or divorce
Average number of adverse childhood experiences parents report their children experienced (of 9)	National Survey of Children's Health, 2016	adds experiencing poverty, discrimination, or neighborhood violence
Share of children whose parents report they experienced at least 2 of 6 ACEs	National Survey of Children's Health, 2016	
Share of parents who say they can share ideas or talk about things that really matter with kids "very well"	National Survey of Children's Health, 2016	restricted to parents with child 6-17 years old
Share who report someone in the family read to child every day in past week	National Survey of Children's Health, 2016	restricted to parents with child 0-5 years old
Share who report all members of household ate a meal together every day in past week	National Survey of Children's Health, 2016	
Share who report child spends at least 4 hours per weekday in front of a TV	National Survey of Children's Health, 2016	includes watching TV, videos, or video games
Share who report child spends at least 4 hours per weekday on electronic device, excluding homework	National Survey of Children's Health, 2016	includes computers, cell phones, handheld video games, and other electronic devices
Share who report family demonstrates 4 ways of being resilient "all or most of the time" when having problem	National Survey of Children's Health, 2016	
Share who report having someone to turn to for emotional support re. children/parenting	National Survey of Children's Health, 2016	over past 12 months
Share of adults who report having 5 or more close friends	Civic Engagement Supplement to the November 2008 Current Population Survey	
Average number of close friends reported by adults	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share of adults who report having volunteered for a group in the past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having attended a public meeting re. community affairs in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having worked with neighbors to fix/improve something in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having made a donation of >$25 to a charitable group in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who volunteered, attended a public meeting, worked with neighbors, or made donation	Volunteer Supplement to the September 2015 Current Population Survey	

Share of adults who always vote in local elections	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who always vote in local elections, self-respondents only	Volunteer Supplement to the September 2013 Current Population Survey	excludes adults for whom someone else gave an answer
Share of adults who participated in a group in the past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who participated in a group other than a sport/recreation organization	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who participated in a non-religious group other than a sport/rec org	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who participated in a religious group in the past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who served on a committee or as an officer of a group	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who ate dinner with at least one household member "basically every day"	Volunteer Supplement to the September 2013 Current Population Survey	in a typical month over the past year
Share of adults who were in contact with family and friends "basically every day" past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who talked with a neighbor at least several times/week in past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting they and their neighbors do favors for each other at least 1x/month	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting they can trust all or most of their neighbors	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting some or great confidence in corporations to do what is right	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting some or great confidence in the media to do what is right	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting some or great confidence in public schools to do what is right	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults saying people can be trusted most or all of the time	2012 and 2016 American National Election Study, internet samples	states with fewer than 75 observations were coded as missing
Share who communicated with family/friends via email/Internet "basically every day"	Civic Engagement Supplement to the November 2008 Current Population Survey	in typical month over past year, also available in 2009, 2010, 2011 supplements
Share who discussed politics with family/friends "basically every day"	Civic Engagement Supplement to the November 2008 Current Population Survey	in typical month over past year, also available in 2009, 2010, 2011, 2013
Share who contacted/visited public official in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	also available in 2009, 2010, 2011, 2013 supplements
Share who bought or boycotted product or service due to company values in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	also available in 2009, 2010, 2011, 2013 supplements
Share who attended a meeting where political issues were discussed in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who took part in march/rally/protest/demonstration in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who participated in at least one of the four activities above in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who showed support for a political candidate/party in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	

Source: Social Capital Project.

Dinner with family was correlated with percent married and percent never married, but not with other family indicators. A second indicator involving eating meals with family (from the NSCH) also was not well correlated with other variables and was often signed the wrong way.

Looking at adverse childhood experiences, reading to children every day (NSCH), heavy exposure to TV/videos/video games (NSCH), heavy exposure to electronic

devices (NSCH), and dinner with family, the alpha was only 0.61. Dropping adverse childhood experiences and reading, the alpha rose to 0.71. The alpha using only reading, TV, and electronic devices was 0.76.

Ultimately, we decided to create a family unity index from the percent of births to unmarried women, the percent of children in single-parent families, and the percent of women who were married (alpha=0.95). These variables are all available at the county level. We also created a second family unity index using the weights on the three variables produced in the county-level principal components analysis. These weights were very similar to those using PCA at the state level, and the two indices correlated at 0.9999.

We also created a "family interaction" index including reading to children, TV viewing, and electronic device viewing. These variables are not available at the county level.

We considered including adverse childhood experiences as its own index, but it was less strongly correlated with the other subindices, and it is unavailable at the county level.

Social Support

The average number of friends variable from the 2008 Civic Engagement Supplement to the Current Population Survey[48] was correlated at 0.91 with the variable indicating the share with at least five friends (from the same survey), and it was more strongly correlated than the latter with the share having daily contact with family and friends (from the September 2013 Volunteer Supplement). We dropped the variable giving the share with at least five friends. The share of adults with emotional support (from the 2006 and 2010 Behavioral Risk Factor Surveillance System data)[49] and the parenting support measure in the NSCH were correlated at 0.62. We dropped the latter.

Looking at emotional support, trust in neighbors, talking to neighbors, doing favors for neighbors, average number of friends, and contact with family and friends, the alpha was 0.83.[50] Adding working with neighbors, from the September 2015 Volunteer Supplement, raised it to 0.84.[51] Adding dinner with family members lowered it to 0.82, while adding both left it at 0.83. Adding both plus the violent crime rate (from the Federal Bureau of Investigation Uniform Crime Reports)[52] raised it only to 0.84. Dropping average number of friends, doing favors for neighbors, or trusting neighbors lowered it below 0.80. Adding the percent of women married raised the alpha to 0.84. Further adding the percent of women never married did not change it. Adding the percent in one-person households lowered it.

Looking at emotional support, trust in neighbors, talking to neighbors, doing favors for neighbors, average number of friends, and contact with family and friends, the alpha was 0.83. It rose to 0.85 if talking to neighbors and contact with family and friends were dropped.

We created a social support index including emotional support, trust in neighbors, doing favors for neighbors, and average number of friends (alpha=0.85). Only emotional support is available at the county level, but it is missing for several hundred counties, and it comes from a survey that is not necessarily representative of every county.

Community Health, Religious Health, Civic Engagement

We created four variables related to participation in groups, using the September 2013 Supplement to the Current Population Survey. They ended up highly correlated with one another. We dropped the measure that excluded participation in recreation groups like golf and tennis clubs. Instead of using the separate variables we created for participation in religious groups and in nonreligious (and non-recreation) groups, we decided to use the variable for participation in all groups.

Church attendance and participation in prayer groups, both from the 2014 Pew Religious Landscape Study, were highly correlated (0.92).[53] We dropped participation in prayer groups. Church attendance, religious adherence rates (from the 2010 U.S. Religion Census: Religious Congregations and Membership Study)[54], and participation in religious groups were all correlated at above 0.50 with each other, but only participation in religious groups had any moderate positive correlation with other civic engagement variables. Looking at participation in religious organizations, church attendance, and religious adherence rates, the alpha was 0.79, and it fell if any of the three were excluded. These findings will be the subject of future Social Capital Project analyses. We used none of these measures in the end.

We looked at the Penn State measure of associations per capita, but we also created two of our own, splitting recreation and leisure establishments (like bowling centers and golf clubs) from membership organizations. (All from the Census Bureau's 2015 County Business Patterns data.[55]) All three of these measures were correlated with the non-religious civic engagement measures. The Penn State measure and our measure for membership organizations correlated at 0.90.

The civic engagement measures from the Current Population Survey supplements were all strongly correlated with each other, and the registered non-religious nonprofit measure (from IRS data) also correlated well with the other non-religious civic engagement measures.[56] The measure adding

congregations to non-religious nonprofits generally was a bit more strongly correlated with these other measures, so we used that measure instead. Using that measure also tended to produce larger alphas with other variables than using non-religious nonprofits and congregations separately.

Looking at group participation, membership organizations per capita, recreation and leisure establishments per capita, non-religious nonprofits and congregations, serving on a committee or as an officer, attending a public meeting, volunteering, and working with neighbors on a project, the alpha was 0.91. Dropping recreation and leisure establishments, the alpha remained at 0.91. Swapping in the Penn St. measure for our membership organization measure (or for both it and our recreation and leisure establishment measure) also left the alpha unchanged. Adding voting in local elections (from the September 2013 Voting Supplement) lowered the alpha. Dropping group participation slightly lowered the alpha.

Adding measures of political participation to other civic engagement variables did not alter the alpha much. Of the six measures we considered (from the November 2008 Civic Engagement Supplement), we retained two—attending political meetings and participating in a demonstration—because of the degree of engagement involved. We dropped discussing politics (less obviously related to civic engagement and more related to interests and knowledge), boycotting companies (too private an act), and supporting a candidate (too imprecisely defined to include low-investment and –involvement "support").

The share making charitable contributions of at least $25 (from the 2015 Volunteer Supplement) was negatively correlated with two IRS measures on charitable contributions (from 2014 IRS Statistics of Income data).[57] The Current Population Survey measure was positively correlated with non-religious civic engagement variables; the IRS measures were negatively correlated. We dropped the IRS measures. Adding the Current Population Survey measure to the other community health indicators left the alpha unchanged, however.

We created a community health index that included membership organizations per capita, nonreligious not-for-profits and congregations per capita, serving on a committee or as an officer, attending a public meeting, volunteering, working with neighbors on a project, attending a political meeting, and participating in a demonstration (alpha=0.92). We excluded voting in local elections and charitable contributions, in part, because they are unavailable at the county level. We excluded group participation because it did not increase the alpha by much.

Institutional Health

Voting in local elections was negatively correlated with voting in presidential elections (from the Election Administration and Voting Survey) and census response rates (from the Census Bureau).[58] It also correlated less strongly with other variables in our database and is unavailable at the county level. We dropped it.

The generalized trust variable from the American National Election Study (ANES) was correlated with the CPS variable relating to trust in neighbors at only 0.33.[59] It has very small correlations with the CPS confidence in institutions variables (and two of them are negative). Since the ANES variable is only available (with sufficient sample sizes) for half the states, and since it is unavailable at the county level, we dropped it from consideration.

Presidential voting rates, census response rates, and our three confidence-in-institutions measures (from the September 2013 Volunteer Supplement) were all positively correlated. Looking at them together, the alpha was 0.72. Adding the three religion variables lowered it to 0.64. Dropping the confidence variables lowered it to 0.66.

We created an institutional health index from presidential voting rates, census response rates, and the three institutional confidence variables (alpha=0.72). The alpha using the two variables available at the county level was 0.66, and the two subindices are correlated at 0.73, but unfortunately at the county level, census response rates and voting rates are not strongly correlated, so we did not use the two-variable subindex.

Social Capital Index

We computed the preferred index from family unity, family interaction, community health, institutional health, social support, collective efficacy (violent crime rate), and philanthropic health (percent giving at least $25 to charity). The alpha was 0.86.

We also computed an index using the methodology used for the county level. This version correlated with the state index at 0.96.

County Analyses

We began with the list of indicators shown in Appendix Table A1, above. The county-level data required cleaning before it could be analyzed. One problem was that a small number of county definitions changed over the time period covered by our measures.[60] A second was that some counties had one or more extreme values, often for smaller counties where an extreme value can reflect small samples. We inspected the distributions of each variable and recoded extreme values on a case-by-case basis. For some variables, we either bottom-coded or top-coded (often at the 99.75 percentile) the values. For others, we dropped percentages equal to 0 or to 100. For two variables, we recoded some rates that should not have exceeded 100 percent to 100 percent. Values of 0 or 100 were recoded to missing if a county had four or more variables at one of those extreme values.

After this cleaning, we standardized all variables and reversed the polarity (multiplying by -1) for eight of them so that higher standard scores always indicated more "social capital."

Family Health

The share of families with children with a single parent and the share of children in families headed by a single parent—both from the same ACS data used at the state level—were correlated at 0.95. We dropped the former.

Looking at the percent of births to unwed mothers, percent of women married, and percent of children in single-parent families, the alpha was 0.81. Adding the percent never married raised it, but only to 0.82. Adding only the nonmarital fertility rate lowered it to 0.78. (All of these variables were from the ACS.)

Looking at the percent of births to unwed mothers, the nonmarital fertility rate, and the percent of children in single-parent families, the alpha was 0.75. It rose to 0.78 if the percent of women married was also added. It fell if the percent in one-person households or the percent of women never married was added. It fell to 0.73 if the nonmarital fertility rate was dropped. The percent of births that were to unmarried women correlated more strongly with other family indicators than the nonmarital fertility rate.

In the end, we created the same family unity subindex as at the state level, using percent of births to unwed mothers, the percent of women married, and percent of children in single-parent households (alpha=0.81). We created two versions, one that used the weights from

PCA analyses at the county level, and one that used the weights from PCA analyses at the state level. They correlated with each other at 0.9997; the weights on the three variables were very similar at the state and county levels.

There were no family interaction variables available at the county level, so we were unable to create a subindex for this dimension.

Social Support

The only social support variable available at the county level is having emotional support,[61] but it is missing for several hundred counties, and it comes from a survey that is not necessarily representative of every county. We chose not to use it, and to thereby forego having a county-level social support subindex.

Community Health, Religious Health, Civic Engagement

Our two variables related to charitable contributions, from IRS data,[62] generally had low or negative correlations with the other indicators. For this reason, and because they were dropped from the state index, we dropped them here too. The Penn State social capital measure and our measure for membership organizations correlated at 0.95.[63] We dropped the Penn State measure.

We had six remaining variables related to community health: non-religious non-profit organizations (IRS), non-religious non-profit organizations plus religious congregations, religious congregations, religious adherence (both from the 2010 U.S. Religion Census: Religious Congregations and Membership Study), membership organizations, and recreation and leisure establishments (both from County Business Patterns data).[64] However, we were concerned that we lacked any indicators of informal civil society and activities requiring a time commitment. At the state level, several such measures are available from the Current Population Survey and included in our community health subindex—working together with neighbors, attending public meetings, serving on committees or as officers, volunteering, attending political meetings, and participating in demonstrations.

To resolve this concern, we first went back to the state data and created a new subindex of "informal civil society" for each state. The subindex score was the first principal component score combining the six CPS variables above. We then assigned this subindex score to every county within a state. In other words, the only variation in the subindex score is between states, and all counties within a state get the same score.

Next, back in the county data, we created five different candidate subindices, using different combinations of the informal civil society subindex score, membership organizations per capita, non-religious non-profit organizations per capita, congregations per capita, and the combination of non-religious non-profits and congregations. (Religious adherence was not strongly correlated with the others, and because of our concerns about the establishment data—noted in the report—we were wary of including recreation and leisure establishments when we already were using membership organizations.) These subindices were estimated using PCA.

Next, we computed, for each of the five candidate subindices, the population-weighted average subindex score across a state's counties. Then we correlated each of these state averages with the state-level community health subindex. We selected the subindex, out of the five candidates, that produced the strongest correlation.

The final county-level community health index combines non-religious non-profits per capita, congregations per capita, and the informal civil society subindex.

Institutional Health

Looking at voting rates in presidential elections (2012 and 2016 Election Administration and Voting Surveys), 2010 census response rates (from the Census Bureau), and religious adherence, none were strongly correlated with one another, and the alphas were very low using any combination of the three. Census response rates generally correlated poorly with the other social capital indicators.[65]

As with the community health subindex, we were concerned about the incomplete data we had at the county level. In this case, we lacked information about confidence in institutions. We took the same approach as for community health. In the state data, we created a confidence subindex that included the three institutional confidence variables. We assigned every county in a state the state's subindex score. Then we created three versions of a county-level institutional health index, using different combinations of presidential voting rates, census response rates, and the confidence subindex.

As before, we created population-weighted state averages across a state's counties and compared them to the state-level institutional health index. The version that correlated most strongly included presidential voting rates, census response rates, and the confidence subindex.

Social Capital Index

We computed an initial index from family unity, community health, institutional health, and collective efficacy (violent crime rate).[66] The alpha was 0.66. We also computed an alternative index, dropping violent crime, which was missing for 178 counties (out of 3,142). We were able to compute scores for 103 of these counties by creating an alternative index that left out violent crime. The alpha fell to 0.58, but it correlated at 0.94 with the initial index. Finally, we modified the (standardized) initial index by replacing any missing values on the index with values from the (standardized) alternative index. This is our final county social capital index.

Benchmarking Data

Appendix Tables A2a and A2b provide information on the benchmarks against which we compare our social capital indices and subindices.

Appendix Table A2a. Benchmark Indicators (State and County-Level)

Indicator	Data Source	Notes
Unemployment rate	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03
Prime-age male labor force participation	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B23001; share of men 25-54 who worked at some point over the previous 12 months
Teen idleness	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S0902; share of teens 16-19 not in school & not in labor force
Median household income	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03
Percent poor	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03; share of families and people whose income past 12 months is below the poverty level
Percent with debt in collections	Urban Institute estimates using 2016 credit bureau data	share of people with a credit bureau record that have debt in collections
Percent w/ housing costs exceeding income by 35%+	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP04
Percent of children in hh's receiving means-tested benefits	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S0901; share of children under 18 in households receiving cash public assistance, SSI, or SNAP
Population in distressed ZIP codes (EIG)	Economic Innovation Group, 2016 Distressed Communities Index data	Distressed ZIP codes are in the bottom fifth of Distressed Communities Index scores, which take into account seven factors related to education, housing, employment, and income
Percent poor in the block group of average poor person	American Community Survey, 2011-2015, 5-year estimates	Microdata obtained from DataFerrett
Percent rich in the block group of average rich person	American Community Survey, 2011-2015, 5-year estimates	Microdata obtained from DataFerrett
Ratio of 80th percentile of hh income to 20th percentile	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B19080
Gini coefficient, household income	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B19083
Share of hh income received by top 5 percent	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B19082

Opportunity Score	Opportunity Nation, 2017 Opportunity Index	Range from 0 to 100. Based on subindices related to the economy, education, health, and community. These subindices are based on a variety of indicators.
Relative immobility	Chetty et al. (2014), using IRS data	rank-rank slope, which gives the expected number of income percentiles in adulthood separating the richest and poorest children
Percent of adults that graduated from high school	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02; includes those with a GED
Percent of adults that obtained a bachelor's degree	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02
Rate of on-time high school graduation	U.S. Department of Education EDFacts Data Files, 2014-15 school year	via 2018 County Health Rankings data
Percent of adults with fair or poor health	Behavioral Risk Factor Surveillance System, 2015	via 2017 County Health Rankings data, age adjusted, self-reported
Age-adjusted premature mortality	National Center for Health Statistics - Mortality files	via 2017 County Health Rankings data
Mortality rate from "deaths of despair"	Centers for Disease Control and Prevention, Multiple Cause of Death Data, 2015	analyses using CDC WONDER; Deaths of despair include fatalities from alcohol abuse, drug overdose, and suicide. See Case and Deaton (2017).
Percent of adults disabled	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S1810; universe is civilian noninstitutionalized population
Percent diabetic	Centers for Disease Control and Prevention, Diabetes Interactive Atlas, 2013	via 2017 County Health Rankings data
Percent obese	Centers for Disease Control and Prevention, Diabetes Interactive Atlas, 2013	via 2017 County Health Rankings data; share with BMI of 30 or more
Percent who smoke	Behavioral Risk Factor Surveillance System, 2015	via 2017 County Health Rankings data
Percent of babies with low birth weight	National Center for Health Statistics - Natality files	county via 2017 County Health Rankings data; state via KIDS COUNT data center; share of live births <2500 grams
Percent without health insurance	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S2701; universe is civilian noninstitutionalized population
Median age	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent of population under age 18	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B27001; universe is civilian noninstitutionalized population
Percent of population ages 65+	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B27001; universe is civilian noninstitutionalized population
Percent non-Hispanic white	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic black	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent Hispanic	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic American Indian or Alaska Native	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic Asian	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic Native Hawaiian or Other Pacific Islander	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent other	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent multiracial	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Black-white segregation	American Community Survey, 2011-2015, 5-year estimates	Microdata obtained from DataFerrett
Percent foreign-born	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02
Population size	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Population density	American Community Survey, 2012-2016, 5-year estimates & 2010 Census Summary File 1	American FactFinder Tables DP05 & GCT-PH1; universe is civilian noninstitutionalized population

Percent in rural areas	2010 Census Population Estimates	county: via 2017 County Health Rankings data; state: 2010 Census Urban List; population outside "urbanized areas" and "urban clusters"
Mean travel time to work	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03
Percent of housing owner-occupied	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP04
Median age of housing	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B25035
Net migration	IRS Statistics of Income Migration data, 2015-2016	
Mean temperature	North America Land Data Assimilation System, 2011	via CDC WONDER, Centers for Disease Control and Prevention

Source: Social Capital Project.

Appendix Table A2b. Benchmark Indicators (State-Level Only)

Indicator	Data Source	Notes
Percent of adults incarcerated	Bureau of Justice Statistics, 2014, Correctional Populations In The United States Series	Number in prison or jail at the end of 2014 per 100,000 residents age 18+
Absolute mobility	Chetty et al. (2016), using decennial census, Current Population Survey, and IRS data	Online Data Table 2, 1980 cohort
Percent with internet subscription	American Community Survey, 2016, 1-year estimates	American FactFinder Table S2801
State and local government spending per capita	Census Bureau, 2015 Annual Surveys of State and Local Government Finances	
Mean elevation	Census Bureau, Statistical Abstract of the United States: 2004-2005	Table 351
Latitude	Ink Plant, LLC	
Longitude	Ink Plant, LLC	

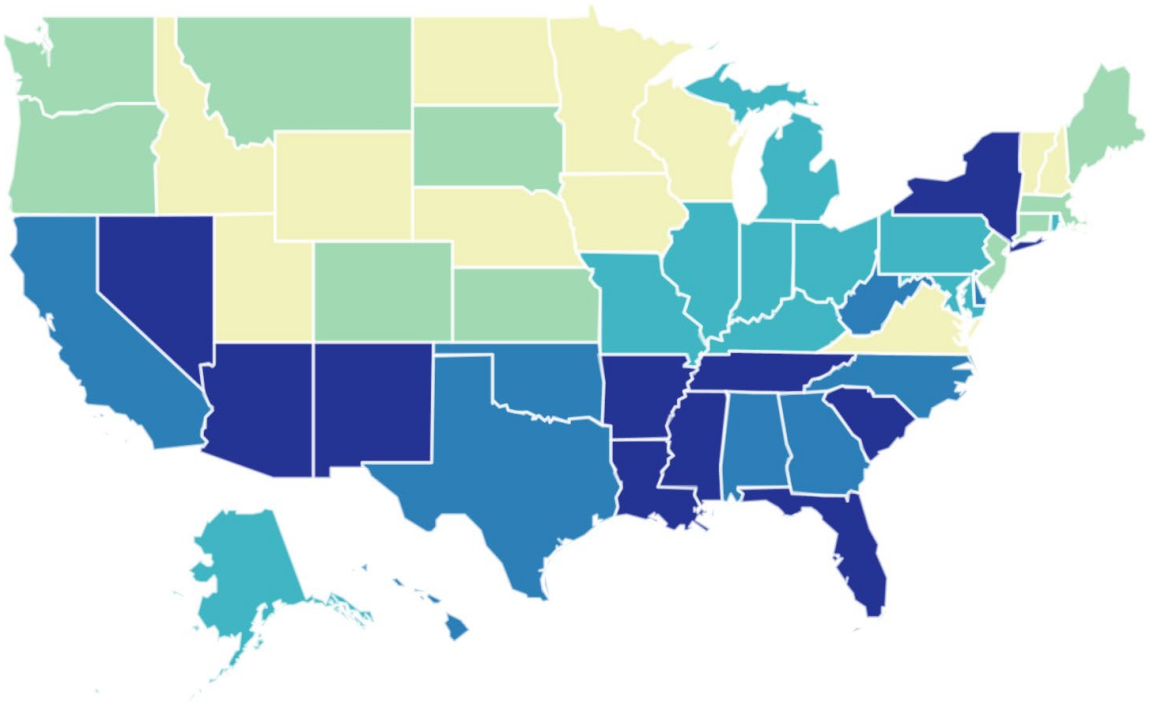
Source: Social Capital Project.

Additional Maps

In Appendix Figures A1 and A2, we provide state-level social capital maps using alternative (inferior) estimates. In Appendix Figure A1, we show the results when we construct state-level indices that mimic the approach to constructing county-level indices. In Appendix Figure A2, the state estimates are population-weighted average county social capital scores.

Appendix Figures A3-A9 display present each of the seven state subindices. Appendix Figures A10-A13 map the four county subindices.

Figure A1. State-Level Social Capital Index (County-Level Method)



Source: Social Capital Project. Maps powered by Leaflet.Download Data (xlsx)

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4. See, for example, Robert D. Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000); Samuel Bowles and Herbert Gintis, “Social Capital and Community Governance,” *The Economic Journal* 112 (2002): F419–36.

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6. Robert D. Putnam, *Bowling Alone*.

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16. The official website of the LDS Church indicates 5,069 Mormon congregations. See "Facts and Statistics," The Church of Jesus Christ of Latter-day Saints, accessed March 27, 2018, https://www.mormonnewsroom.org/facts-and-statistics/country/united-states/state/utah.

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18. We used the 2014 version of the Penn State data. State-level estimates for associations and nonprofits were created by multiplying associations per capita and nonprofits per capita by the 2014 population included in the data. We computed statewide census response rates by taking the 2014-population-weighted average of county response rates within a state. We computed statewide presidential voting rates by a similar population-weighted average, except that we used county estimates of the civilian population at least 18 years old from the 5-year 2016 American Community Survey data (covering 2012-2016, Table B05003).

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22. It finishes third to worst if the principal components analysis is conducted excluding Washington, D.C.

23. See, especially, Kenneth Prewitt, Christopher D. Mackie, and Hermann Habermann, eds., *Civic Engagement and Social Cohesion: Measuring Dimensions of Social Capital to Inform Policy* (Washington, DC: The National Academies Press, 2014); Katherine Scrivens and Conal Smith, "Four Interpretations of Social Capital: An Agenda for Measurement" (Working Paper No. 55, OECD Statistics, 2013), accessed March 7, 2018, http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/DOC(2013)6&docLanguage=En; and Robert D. Putnam, *Bowling Alone*.

24. We round the weights to two decimal places in the report, but the actual weights are rounded to four decimal places.

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26. See, for example, Robert J. Sampson, Stephen W. Raudenbush, and Felton Earls, "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy," Science 277, no. 5328 (August 1997), 918-924; Robert Sampson, *Great American City: Chicago and the Enduring Neighborhood Effect* (Chicago: The University of Chicago Press, 2012).

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28. After realizing that the counties including Austin and Dallas, Texas—two of the nation's largest cities—was missing for this ACS variable, we attempted to pull estimates from earlier releases of ACS 5-year averages. Unfortunately, the 2011 data—averaging 2007 to 2011—was the most recent release that included data for the counties. We used this data to fill in missing data for Austin and Dallas but also for 25 other counties in and outside Texas.

29. Weights were as follows: volunteering, 0.39; attending public meetings, 0.44; working with neighbors, 0.45; serving on a committee or as an officer, 0.41; attending political meetings, 0.42; and participating in demonstrations, 0.31. The subindex accounted for 71 percent of the variability in the original six variables.

30. The weights were 0.59 for corporations, 0.53 for media, and 0.62 for schools. The subindex accounted for 65 percent of the variability in the original three variables.

31. County-level presidential voting rates were computed by taking votes from the U.S. Election Assistance Commission and dividing them by ACS estimates of the civilian population aged 18 or older. We do this for 2012 and 2016 (in both cases using the 5-year 2012-2016 population in the denominator), and then average them. Alaska votes are unavailable, so each county is assigned the statewide voting rate in each year.

32. Measures of emotional support at the county level are available through County Health Rankings (taken from multiple years of the Behavioral Risk Factor Surveillance System survey). However, this survey was never designed to be representative at the county level.

33. The thinner state-level index explained 62 percent of the variance across the four variables, higher than the 56 percent of variance across seven variables explained by the fuller index.

34. Tom van der Meer and Jochem Tolsma, "Ethnic Diversity and Its Effects on Social Cohesion," *Annual Review of Sociology* 40 (2014), 459-478.

35. Segregation is clearly related to "bridging social capital"—social capital that allows groups to work together or that develops from such cooperation.

36. The highest social capital grouping has eleven states, and the two lowest social capital groupings have 599 counties. There are 150 counties for which we could not compute social capital scores.

37. Robert D. Putnam, Bowling Alone; Robert D. Putnam and David E. Campbell, *American Grace: How Religion Divides and Unites Us* (New York: Simon and Schuster, 2010).

38. We have developed some initial hypotheses to explain the low correlations. First, it may be that people who live in communities that have low social capital and substantial social and economic problems are drawn to religion as a source of support and a way of making sense of the world. Second, it may be that communities that are low in social capital for historical or demographic reasons may also be more religious for historical or demographic reasons. For instance, the institution of slavery may have had a lasting effect on the social capital levels and religiosity of African Americans. Third, secular social capital may "crowd out" religious social capital, so that places with robust community life that does not revolve around religious institutions find religious participation less valuable. Fourth, it may be that religious adherents are withdrawing from the broader civil society as it becomes more secularized (though it seems less likely that they would withdraw from their own families). Fifth, it may be that within a state or county, places with high religiosity and with low social capital are largely separate. That separateness might get obscured in aggregating up to the state or county level. Sixth, perhaps in some low-social-capital communities there is high religiosity within faith traditions that emphasize a personal relationship with God rather and that do not produce institutions of civil society to as great an extent.

39. See the discussion in the "Past Efforts to Develop a Social Capital Index" section for how we constructed the state-level version of the Penn State index. Putnam's index scores are available at http://bowlingalone.com/?page_id=7.

40. U.S. Census Bureau, *Ancestry: 2000, Census 2000 Brief*, by Angela Brittingham and G. Patricia de la Cruz, June 2004, "Large Ancestry: 2000," Figure 3, accessed March 27, 2018, https://www.census.gov/prod/2004pubs/c2kbr-35.pdf; Anthony Daniel Perez and Charles Hirschman, "The Changing Racial and Ethnic Composition of the US Population: Emerging American Identities," *Population and Development Review* 35, no. 1(March 2009), 1-51, Table 5, accessed March 27, 2018, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2882688/.

41. Reinforcing this hypothesis, in preliminary research on ancestry we have conducted, states and counties with many people of Chinese and Asian Indian descent also have lower social capital, despite those groups having average household incomes that are 30 percent and 78 percent above the overall American average (according to the American Community Survey).

42. Yuval Levin, *The Fractured Republic: Renewing America's Social Contract in the Age of Individualism* (New York: Basic Books, 2016).

43. Anil Rupasingha, Stephan J. Goetz, and David Freshwater, "The Production of Social Capital in US Counties."

44. See, for example, Vincent J. Felitti et al., "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. The Adverse Childhood Experiences (ACE) Study," *American Journal of Preventive Medicine* 14, no. 4 (May 1998): 245-58, accessed March 27, 2018, https://www.ncbi.nlm.nih.gov/pubmed/9635069.

45. U.S. Census Bureau, *National Survey of Children's Health (NSCH*), 2016 NSCH Data Release, accessed March 27, 2018, https://www.census.gov/programs-surveys/nsch/data/nsch2016.html.

46. U.S. Census Bureau, *American Community Survey*, accessed March 27, 2018, https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

47. See U.S. Census Bureau, *Current Population Survey*, September 2013: Volunteer Supplement, accessed March 27, 2018, https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/36035#.

48. See Sarah Flood, et al., *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0*. [dataset], (Minneapolis: University of Minnesota, 2017), accessed March 27, 2018, https://doi.org/10.18128/D030.V5.0.

49. See U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, *Behavioral Risk Factor Surveillance System*, accessed March 27, 2018, https://www.cdc.gov/brfss/annual_data/annual_data.htm.

50. The variables related to neighbors and contact with family and friends are from the September 2013 Volunteer Supplement.

51. See U.S. Census Bureau, *Current Population Survey, September 2015: Volunteer Supplement*, accessed March 27, 2018, https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/36411.

52. See U.S. Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Statistics*, accessed March 27, 2018, https://www.ucrdatatool.gov/Search/Crime/State/TrendsInOneVar.cfm.

53. "Attendance at religious services by state," Pew Research Center, 2014, accessed March 27, 2018, http://www.pewforum.org/religious-landscape-study/compare/attendance-at-religious-services/by/state/; "Frequency of participation in prayer, scripture study or religious education groups by state," Pew Research Center, 2014, accessed March 27, 2018, http://www.pewforum.org/religious-landscape-study/compare/frequency-of-participation-in-prayer-scripture-study-or-religious-education-groups/by/state/.

54. See Association of Religion Data Archives, *U.S. Religion Census: Religious Congregations and Membership Study*, 2010 (State File), accessed March 27, 2018, http://www.thearda.com/Archive/Files/Descriptions/RCMSST10.asp.

55. See U.S. Census Bureau, *American Community Survey*.

56. The IRS data is available at The Urban Institute, *NCCS Data Archive*, accessed March 27, 2018, http://nccs-data.urban.org/data.php?ds=bmf. The CPS civic engagement variables are from the September 2013 and 2015 Volunteer Supplements.

57. See Internal Revenue Service, *SOI Tax Stats County Data 2014*, accessed March 27, 2018, https://www.irs.gov/statistics/soi-tax-stats-county-data-2014.

58. For voting rates, see U.S. Election Assistance Commission, *2012 Election Administration and Voting Survey: A Summary of Key Findings*, September 2013, "Turnout rates for voter participation using different bases," Table 29, accessed March 27, 2018, https://www.eac.gov/assets/1/6/2012ElectionAdministrationandVoterSurvey.pdf; U.S. Election Assistance Commission, *The Election Administration and Voting Survey: 2016 Comprehensive Report*, "Voter Turnout," Overview Table 1, accessed March 27, 2018, https://www.eac.gov/assets/1/6/2016_EAVS_Comprehensive_Report.pdf. For census response rates, see U.S. Census Bureau, "2010 Census Response Rates for the 25 Most Populous Cities" April 26, 2010, accessed March 27, 2018, https://www.census.gov/2010census/news/xls/mail_part_rate_4-27-10.xls.

59. The data is available at ANES, *2012 Time Series Study*, accessed March 27, 2018, http://www.electionstudies.org/studypages/anes_timeseries_2012/anes_timeseries_2012.htm and ANES, 2016 Time Series Study, http://www.electionstudies.org/studypages/anes_timeseries_2016/anes_timeseries_2016.htm, March 27, 2018. We used only the web samples, which are intended to be representative at the state level.

60. In 2007, the Skagway-Hoonah-Angoon Census Area was split into Skagway Municipality and the Honnah-Angoon Census Area. In 2008, the Wrangell-Petersburg Census Area and the Prince of Wales-Outer Ketchikan Census Area were divided into Wrangell City and Borough, Petersburg Census Area, and the Prince of Wales-Hyder Census Area, with part of Prince of Wales-

Outer Ketchikan annexed by Ketchikan Gateway Borough. Subsequently, in 2013, part of the Petersburg Census Area and part of the Hoonah-Angoon Census Area were combined into Petersburg Borough, and the rest of the Petersburg Census Area was added to the Prince of Wales-Hyder Census Area. We dropped any data for Prince of Wales-Outer Ketchikan, Skagway-Hoonah-Angoon, or Wrangell-Petersburg. In 2015, the Wade Hampton Census Area became the Kusilvak Census Area and got a new FIPS code.

Outside Alaska, Shannon County, South Dakota became Oglala Lakota County in 2015 and got a new FIPS code. In 2013, the independent city of Bedford, Virginia was added to Bedford County. We added the totals for these two FIPS codes for variables measured in years before 2013.

61. See Robert Wood Johnson Foundation, *County Health Rankings and Roadmaps*, accessed March 27, 2018, http://www.countyhealthrankings.org/sites/default/files/2014%20County%20Health%20Rankings%20Data%20-%20v6.xls.

62. See Internal Revenue Service, *SOI Tax Stats County Data 2014*.

63. Anil Rupasingha, Stephan J. Goetz, and David Freshwater, "The Production of Social Capital in US Counties."

64. For non-religious nonprofit organizations, see The Urban Institute, *NCCS Data Archive*. For religious congregations and religious adherence, see Association of Religion Data Archives, *U.S. Religion Census: Religious Congregations and Membership Study, 2010 (State File)*, accessed March 27, 2018, http://www.thearda.com/Archive/Files/Downloads/RCMSCY10_DL2.asp. For membership organizations and recreation and leisure establishments, see U.S. Census Bureau, *American Community Survey*.

65. For presidential voting rates, see U.S. Election Assistance Commission, *Datasets, Codebooks and Surveys*, accessed March 27, 2018, https://www.eac.gov/research-and-data/datasets-codebooks-and-surveys/. We had to add totals for a number of cities and towns into their respective counties in Illinois, Maine, Missouri, and Wisconsin. Alaska counties all have the statewide voting rate. Denominators are the civilian voting-age population, from the 2012-2016 ACS. For census response rates, see Michigan Population Studies Center, Institute for Social Research, *Final Mail Participation Rates for All Counties [Census 2010*], accessed March 27, 2018, https://www.psc.isr.umich.edu/dis/census/Features/participation/allcounties_oct2010.html.

66. For violent crime rates, we used County Health Rankings data tabulating results from the FBI's Uniform Crime Reports. We used 2012-14 estimates where available, otherwise 2010-12 estimates, otherwise 2009-11 estimates, or otherwise 2008-10 estimates. See Robert Wood Johnson Foundation, *2017 County Health Rankings Data*, accessed March 27, 2018, http://www.

countyhealthrankings.org/sites/default/files/2017CountyHealthRankingsData.xls; Robert Wood Johnson Foundation, *2015 County Health Rankings Data*, accessed March 27, 2018, http://www.countyhealthrankings.org/sites/default/files/2015%20County%20Health%20Rankings%20Data%20-%20v3.xls; Robert Wood Johnson Foundation, *2014 County Health Rankings Data*, accessed March 27, 2018, http://www.countyhealthrankings.org/sites/default/files/2014%20County%20Health%20Rankings%20Data%20-%20v6.xls; and Robert Wood Johnson Foundation, *2013 County Health Rankings Data*, accessed March 27, 2018, http://www.countyhealthrankings.org/sites/default/files/2013CountyHealthRankingsNationalData.xls.

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