

THE ROLE OF SOCIAL CAPITAL IN IMPROVING HEALTH OUTCOMES, EQUITY, AND RESILIENCE: A PRIMER AND QUANTITATIVE ANALYSIS

TECHNICAL BRIEF

OVERVIEW AND OBJECTIVES

This technical brief consolidates a full report conducted as part of the Health System Strengthening Accelerator (Accelerator), a five-year initiative led by Results for Development (R4D), ICF International, and the Health Strategy and Delivery Foundation, with funding from the United States Agency for International Development and the Bill & Melinda Gates Foundation. The objective of this work is fourfold:

To introduce and assess how social capital has been conceptualized and measured



To detail the literature and state of knowledge on the relationship between social capital and health, with a focus on lowand middle-income countries (LMICs)



To undertake a quantitative case study to investigate the empirical relationship between social capital and health, specifically examining possible mechanisms of action and equity impacts



To identify key messages and considerations for policymakers and programs considering leveraging social capital as part of the toolkit to improve health outcomes and achieve wider health sector objectives

INTRODUCTION

Interest in the social determinants of health has increased in the past three decades, with estimates suggesting that up to 50% of the reduction in global child mortality between 1990 and 2010 can be attributed to investments and policy interventions outside the health sector.1 The same period saw a resurgence of interest in the social dimensions of development, with work examining social capital seeing a rise in prominence.² Since then, social capital has been identified as a potential determinant of outcomes ranging from economic growth to innovation, political governance, crime, economic mobility, employment, and education.³⁻⁷ A substantive body of work has also examined the relationship between social capital and health.8-9 This culminated in the World Health Organization Commission on the Social Determinants of Health's framework (2010), highlighting social capital as a key determinant.¹⁰

However, most literature on the relationship between social capital and health has focused on high-income countries, and it has been noted that "there is a dearth of evidence from resource-poor countries."¹¹ Consequently, social capital remains a neglected determinant of health in LMICs, despite its potential effectiveness in improving health outcomes, equity, and household resilience.¹² It is counterintuitive that the link between social capital and health in LMICs is less developed. First, strengthening communities is critical in safeguarding population health in contexts with high resource scarcity and volatility. Second, additional means of improving health outcomes warrant exploration, given the shortcomings of formal health systems in LMICs. Third, the potential health effects of social capital could be significantly larger in LMICs, compared to high-income contexts. These factors suggest that strengthening social capital within and between communities may be an effective policy option for improving health outcomes, equity, and household resilience.

WHAT IS SOCIAL CAPITAL?

Social capital is a multidisciplinary concept, and many distinct definitions have been used. Several definitions of social capital are commonly cited,¹³⁻¹⁷ and they largely corroborate that social capital refers to "the networks, norms, and trust that facilitate cooperation and collected action among individuals and groups," such that social capital has been referred to as the "glue of a society."¹⁷

Many believe social capital is not a singular concept but a "family of concepts," within which there are many (related) forms or measures of social capital, and this likely contributes to the lack of a single definition or measure.¹⁸ A well-established distinction is made between three dimensions of social capital: structural, cognitive, and relational. The structural dimension is tied to the social structure through network ties and social organization, and the cognitive dimension focuses on shared language and narratives. The relational dimension is focused on the characteristics of social relationships and generally includes trust.¹⁹⁻²⁰

Researchers have identified three main categories of social connections that create social capital: bridging, bonding, and linking ties. Bonding ties occur within groups, such as family or individuals with an important shared trait. Bridging ties occur across similar groups, or between people who are different in a salient way. Linking ties connect individuals to people or entities with power or resources.²¹ Figure 1 (next page) organizes components of measurement of social capital along the three dimensions, including network structure and ties. Even in terms of measurement, there is substantial overlap across the dimensions, for example with trust or civic engagement, indicating that these dimensions are intended as complementary but not fully distinct.



Source: Acquaah M., Amoako-Gyampah, K., Gray, B., & Nyathi, N. Q. (2014). *Measuring and Valuing Social Capital: A Systematic Review.* Network for Business Sustainability South Africa. Retrieved from: nbs.net/knowledge

Although there is no correct definition or typology of social capital, and each definition or categorization differs slightly, all share the fundamental idea that social capital is relational.

Different types of social capital may play relatively more or less significant roles in determining different outcomes. Although certain aspects and categories have been proposed as being more important—"the *central area* of social capital is trust"²²—it is likely that the relative importance of different types or categories of social capital varies. For instance, cross-type connectedness may be more important for influencing economic mobility, while civic engagement plays a larger role in determining health. This suggests that there is no overall most important type of social capital to target from a policy perspective. This subject of which type of social capital has more relative importance remains highly underexplored.

Measurement of Social Capital

In the past five years, based on the increasing acceptance that social capital plays an important role in a broad range of outcomes, there has been a renewed emphasis on attempting to measure social capital in high-income countries. The Social Capital Project is a multiyear project from 2017 that developed an index providing "the clearest picture ever taken of the health of American communities."²³ In addition, the Social Capital Atlas provides information on the state of social capital in the United States derived from Facebook data disaggregated at the zip code level.⁴

The complexity in definitions and conceptualization has resulted in similar challenges when measuring and operationalizing social capital for analytic purposes. The Organisation for Economic Co-operation and Development compiled a social capital question "data bank" of 1,300 questions aimed at capturing aspects of social capital from more than 50 surveys.²⁴ Stiglitz et al. have highlighted the need for greater focus on the development of better measures of social capital, given the perceived importance of the concept.²⁵

Practically focused on the measurement of social capital, the Organisation for Economic Co-operation and Development identified four key conceptualizations of social capital with applied measures: personal relationships, social network support, civic engagement, and trust and cooperative norms.²³ Chetty et al. focused on similar areas for their social capital analysis that correspond to personal relationships, social network support, and civic engagement.⁴

A number of tools and indices have been developed that attempt to measure the various aspects of social capital comprehensively. Most empirical studies, particularly in LMICs, continue to rely on the use of simple single proxy indicators to capture and quantify different forms of social capital. **Table 1** outlines several indicators and measurement tools that have been used to quantify individual and area-level social capital.

TABLE 1	Surveys and Tools for Measuring Social Capital		
Measurement type		Measure	
Index		 Social Capital Assessment Tool²⁶ World Bank's Social Capital Assessment Tool²⁷ Adapted Social Capital Assessment Tool²⁰ The Petris Social Capital Index²⁸⁻²⁹ Putnam's Social Capital Index¹⁷ Integrated Questionnaire for the Measurement of Social Capital³⁰ Social Capital Assessment Tool in Pregnancy for Maternal Health in Low and Middle-income Countries³¹ 	
Structural social capital proxy		• Individual indicators of voluntary organization membership ¹⁵	
Network/structural social capital		• Network-based measures ³²	
Structural and cognitive social capital proxies		 United Kingdom Office of National Statistics³³⁻³⁴ World Value Surveys³⁵ 	

Attempts to measure social capital make two points clear: (1) social capital is difficult to measure and quantify at an aggregate level due to the multiple forms of social capital (i.e., capturing aggregate social capital requires indicators for all types of social capital; and (2) data requirements for the measurement of social capital vary with the forms of social capital (i.e., certain forms of social capital have more intensive data requirements than others). For example, network data are more demanding to collect and therefore less readily available and used in LMICs.

Data limitations remain a key constraint in building an understanding of the role of social capital in LMICs The lack of progress in data collection around social capital may be a result of its not clearly falling under the remit of any single sector. As indicated previously, recognition of social capital's importance has recently led to several initiatives in highincome countries starting to intentionally collect detailed data. Increasing the intentional collection of data on social capital in LMICs is a crucial step to building a greater understanding of the link between social capital and health and guiding policymakers.

HOW CAN SOCIAL CAPITAL INFLUENCE HEALTH?

Most empirical research on the relationship between social capital and health has identified a positive association in LMICs.³⁶⁻⁴⁷ Despite these studies and the growing importance of social determinants of health in policy dialogues, the relationship between social capital and health in LMICs remains an underexplored topic in the wider research agenda of understanding health outcomes and inequities.¹¹ **Figure 2** illustrates multiple hypothesized mechanisms through which social capital may influence health-related outcomes in LMICs.





Collective Resources (Safety Nets and Financial Risk Protection)

Social capital and informal networks can reduce the financial burden and economic implications of accessing health care through increased access to collective resources. The financial cost of health care and outof-pocket payments can cause individuals and households to reduce or forgo health care utilization following a negative health shock.⁴⁸ Financial risk protection, including the prevention of impoverishing health expenditures, is a principal objective of health systems. In many LMICs, formal credit and insurance systems are limited. Social capital and informal networks can play a role in increasing health care utilization and reducing financial hardships by enabling collective resource pooling and mutual insurance. Informal networks in countries with large informal economies provide mutual insurance based on social networks and trust.49

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Health Care Utilization and Institutional Trust

Social capital plays a role in influencing health outcomes not only within and between communities but also in the relationship between communities and the formal health care system. Increasing institutional trust between individuals, communities, and health care providers and systems influences individuals' willingness to engage with the health care system and to utilize health care. Trusting patients are more likely to seek health care early, disclose sensitive information to health care workers, and adhere to treatment. Institutional trust also impacts provider choice, community participation in disease surveillance, and enrollment in community-based health insurance. Social capital has been shown to be beneficial during disease outbreaks, aiding response efforts.⁵⁰ Furthermore, increased

community social capital can strengthen collective action and lobbying for improved local public services, including enhancing the quality of health care.

3

Social Participation and Psychological Support

Untreated mental health disorders contribute significantly to the global burden of disease, and mental health care services in LMICs are often lacking or of poor quality, resulting in a large treatment gap. Identifying and utilizing protective factors within communities, such as social participation, integration, and supportive resources, could help reduce the prevalence of mental health conditions and alleviate stress caused by social isolation. Social capital can also serve as a psychological resource during times of negative health or economic shocks and improve an individual's resilience to such shocks.

Informational Resources

Social capital may play a role in disseminating health information, potentially leading to improved health behaviors and outcomes. A significant portion of the literature illustrates the lack of information to be an important factor in poor health behaviors and the underutilization of health care services.51 Studies have shown that individuals' behaviors are responsive to information on health risks and the benefits of specific health behaviors. Social capital expands individuals' informational resources, reducing the cost of acquiring information. Having a larger number of weak ties in a social network can be more effective for spreading information. Social capital also facilitates the diffusion of good practices and norms through social learning, as individuals observe the benefits of health behaviors and practices in their communities.

Potential for Negative Effects

It should also be noted there is also the potential for social capital to have negative health effects. High levels of social capital may result in communities being less tolerant of deviations in health-related behaviors, even when they can be beneficial. In addition, expectations around community participation and societal obligations can cause distress and worry. Attempts to leverage social capital for health promotion objectives should consider the potential for unintended negative effects and act to mitigate these, such as by acting against the social contagion of undesirable norms and health behaviors or ensuring that groups or individuals are not excluded through strengthening social ties. The possibility of negative effects suggests the importance of building a strong understanding of communities when considering implementing social capital interventions.

These mechanisms provide strong theoretical reasons for why social capital can be an important determinant of health and healthrelated outcomes. The role each mechanism potentially plays in determining how social capital influences health may depend on the conceptualization and form of social capital considered (e.g., informal interactions, participation in organizations, trust), and the context. However, few studies have sought to explicitly examine the relative importance of these mechanisms and have been speculative in suggesting a rationale for why a relationship between health and social capital exists. This study examined the relationship between social capital and financial risk protection, health care utilization, and ultimate health outcomes. It also aimed to provide evidence on whether increasing social capital has the potential to reduce socioeconomic-related health inequalities.

QUANTITATIVE CASE STUDY: SOCIAL CAPITAL AND HEALTH IN SOUTH AFRICA

Research Questions

The study addressed four main empirical questions:

- 1. Does social capital affect physical and mental health outcomes?
- 2. Does social capital affect health care utilization?
- 3. Does social capital improve household resilience as measured by financial risk protection?
- 4. Does the effect of social capital on health outcomes vary by household socioeconomic status?

Question 1 relates to most of the previous quantitative studies in that it attempts to identify the presence of a relationship between social capital and health. Questions 2 and 3 attempt to gain a deeper understanding of the mechanisms driving any potential relationship between social capital and health in South Africa, by examining one of the key hypothesized mechanisms described previously and examining whether there is any impact on household resilience in the face of financial pressures related to health care expenditure. The final question examines whether there may be health equity implications of social capital. Understanding the effect of social capital across levels of household income has important implications for whether social capital interventions might have the potential to reduce socioeconomicrelated health inequalities.

Data and Indicators

The study used data from the South African National Income Dynamics Study, a longitudinal survey tracking a nationally representative sample of 28,000 individuals and their households since 2008. The analysis included all five waves of the survey from 2008 to 2017.

Two indicators, generalized trust and localized trust, were used to measure social capital. These represent the most commonly used proxies for cognitive social capital in empirical studies.⁵² Indicators of trust are used as proxies for measuring what Jackson refers to as "community capital," which he defines as "the ability to sustain cooperative (aggregate social-welfare-maximizing) behavior in transacting, the running of institutions, the provision of public goods, the handling of commons and externalities, and/or collective action, within a community."³³

Health outcomes were measured using self-reported overall health status and a validated 10-item version of the Centre of Epidemiological Studies Depression (CES-D) Scale for mental health. Health care utilization was assessed using a binary variable indicating whether individuals utilized health care in the past 30 days.¹ Financial risk protection was assessed using indicators such as the percentage of out-of-pocket expenditure on health care relative to total household income and the probability of experiencing catastrophic health care expenditures.²

TABLE 2	ABLE 2 Key variables used in analysis			
Key variables		Description		
Social capital				
Generalized trust		Is it "very likely," "somewhat likely," or "not likely at all" for your lost wallet to be returned with its contents <i>by a complete stranger</i> ?		
Localized trust		Is it "very likely," "somewhat likely," or "not likely at all" for your lost wallet to be returned with its contents <i>by someone who lives close by</i> ?		
Health status				
Self-reported overall health status		Individual's self-assessed health based on a 5-point Likert scale ranging from "poor" to "excellent"		
CES-D-10		Aggregation of responses to 10 questions indicating ways that individuals felt or behaved related to mental well-being, with scores between 0 and 30 (higher represents worse mental health)		
Health care utilization				
Health care utilization in the past 30-days		Binary variable equal to 1 if an individual utilized health care in the past 30 days		
Financial risk protection				
Out-of-pocket health expenditure as a percentage of total household income		The percentage of total health income that is spent on health care utilization and services		
Incidence of catastrophic health expenditure		Out-of-pocket health expenditure >10% of total household income		

¹In examining the effect of social capital on health care utilization, the analysis attempted to control for differences in health status by including information on whether individuals suffer from acute and chronic illnesses as well as HIV status.

² Analysis of the impact on financial risk protection was done at the household level instead of the individual level. The data were aggregated at the household level, and observations were weighted based on the number of individuals within each household.

Fixed effect models were estimated to examine how within-individual changes in social capital related to changes in health outcomes. Separate models were estimated for generalized and localized trust. To examine whether the effect of social capital on health was variable across levels of income, individuals were split into guartiles based on household income. Analysis of the relationship between social capital and health status and health care utilization was undertaken at the individual level, and analysis examining the relationship between social capital and financial risk protection was done at the household level. Details on all the econometric specifications can be found in Technical Appendix A.1 of the full report, which this brief accompanies. All analysis was undertaken in Stata 15.

Results

Result 1: Does social capital affect physical and mental health outcomes?

Levels of social capital are low in South Africa and many other LMICs.⁴² **Figure 3** shows that a small proportion of individuals have high levels of trust, both generally and in others within the same community. A small but statistically significant positive relationship was found between localized trust and self-reported overall health. This suggests that individuals who increased their level of localized trust from low to high saw an improvement in their overall health status. No statistically significant relationship was found between generalized trust and overall health status.

In terms of mental health, increases in individuals' trust (both generalized and localized) saw a worsening in CES-D-10 mental health scores. However, despite this negative effect of increases in trust on mental health scores, the average baseline CES-D-10 mental health scores in South Africa are far from any clinically meaningful threshold. Therefore, this result might be interpreted as comparable to individuals with higher social capital being marginally more stressed, for instance as a result of increased social activity, rather than signaling a clinically meaningful negative impact on mental health. It does reaffirm that the health effect of social capital is complex and not unambiguously positive, although it is not a significant concern in this instance.

FIGURE 3 Distribution of individual generalized and localized trust





Result 2: Does social capital effect health care utilization?

We found a small negative relationship between trust (both generalized and localized) and health care utilization. The models aimed to control for the need for health care utilization across individuals with different levels of social capital. This result might be considered counterintuitive as, holding health constant, more trusting individuals might be expected to trust health care providers more and have higher utilization rates. This finding suggests that other mechanisms (i.e., not increased health care utilization) are responsible for the previously identified positive social capital-health relationship in this setting. Consequently, if it was believed that suboptimal health care utilization was an issue in this setting, attempting to increase social capital may not be an appropriate policy response. This finding highlights the importance of building evidence on the specific pathways linking social capital and health.

However, this result could also suggest that the models did not adequately control for changes in an individual's health status. It could be that individuals seeing improvements in their social capital over time also improved their health and therefore had less need to utilize health care services.

Result 3: Does social capital improve household resilience as measured by financial risk protection?

From our analysis, there is limited evidence that social capital has an effect on financial risk protection in South Africa. Households that experienced a change in their levels of social capital over time did not see any change in their probability of suffering a catastrophic health expenditure or see any meaningful change in their out-of-pocket health expenditure as a percentage of total household income. Again, momentarily ignoring data limitations, this suggests that interventions aimed at building social capital would not meaningfully improve household resilience and financial risk protection in South Africa.

Result 4: Does the effect of social capital on health outcomes vary by household socioeconomic status?

Finally, our analysis suggests that increases in social capital (as measured by localized trust) may have a larger positive impact on the overall health status of poorer individuals. Figure 4 shows the effect of social capital on self-reported overall health for individuals across income quartiles. The positive relationship between localized trust and overall health is largely driven by individuals from the lowest two (poorest) quartiles. For individuals from the poorest households (first quartile), moving from low local trust to medium or high local trust is associated with a 0.017 and 0.04 increase in self-reported health scores, respectively. This corresponds to a 0.5% and 1.1% improvement in selfassessed health, respectively. Individuals from poor households (second quartile) moving from low local trust to medium or high local trust is associated with a 0.06 and 0.05 increase in self-reported health scores, respectively. This corresponds to a 1.6% and 1.4% improvement in self-assessed health, respectively. This result suggests that building social capital may act to reduce socioeconomic-related health inequalities by disproportionately improving health outcomes among individuals with lower socioeconomic status.



Effect of changes in social capital (localized trust) on overall health by household socioeconomic status



Marginal Effects of Local Trust on Health Status Across Household Income

KEY MESSAGES AND POLICY IMPLICATIONS

Findings from the literature review and quantitative analysis suggest a number of key messages, policy recommendations, and priority research areas.

(1)

Should policymakers and programs focused on improving health outcomes, equity, and household resilience consider interventions based on building social capital?

- Yes! Social capital has been shown to have a positive relationship with health outcomes, suggesting that interventions fostering social capital can improve population health. The quantitative case study found a positive relationship between social capital, as measured by localized trust, and individual's selfreported health status. Overall, evidence suggests that policies and interventions that build social capital should be considered as part of the toolkit to improve health outcomes and achieve wider health sector objectives.
- Especially for Equity: The analysis suggests that programming to increase social capital may be especially beneficial when improving health equity is an objective. As a significant determinant of health, social capital adds another dimension that may explain disparities in health outcomes. This implies that:
 - Addressing health inequities may require addressing differences in social capital. The importance of social capital as a determinant of health suggests that even after addressing financial constraints that contribute to health inequities, differences in health outcomes will persist.

- Social capital interventions should be considered to reduce health inequities. Improvements in social capital have a larger health impact on households with lower income, suggesting that building social capital may address health inequities and be characterized as pro-poor.
- However, targeting health interventions to areas with high social capital may exacerbate existing health inequalities even when interventions are successful. Social capital may predict success of programs, but unless areas with lower social capital are also being reached, targeting programming based on social capital could potentially increase health inequities.
- But remember, context is key for the relative importance of the pathways linking **social capital to health.** Policy implications and appropriate responses will depend on the role played by the various mechanisms. Putting data issues aside, our analysis suggests that the influence of social capital on health did not occur through a resource pooling effect or through increasing the propensity for health care utilization in South Africa. If these mechanisms were the principal pathways through which social capital was impacting health outcomes, policymakers could skip building social capital and address other determinants to increase health care utilization or improve household financial risk protection. However, in this setting, the social capitalhealth relationship identified appears to operate through an alternative pathway. Even if social capital was only influencing health through improving health care utilization, increasing social capital may still be an efficient means to achieve increases in utilization. Understanding the relative importance of mechanisms across different settings is important to guide policymakers considering leveraging social capital in program and intervention design.

2

How can policymakers and programs in LMICs act to increase social capital?

- Although there is growing evidence that social capital is beneficial for health in LMICs, a critical question of whether social capital can be purposefully changed remains. Policy suggestions to build social capital, synthesized from literature review, include the following:
 - Increase community stability. Policies that increase community stability will likely increase individual's and community's investments in social capital by increasing the returns on these investments.⁵³
 - Reduce the cost of forming social capital. Provide funding and subsidies to organizations to expand to underserved communities, or campaign to encourage the establishment of social organizations by communities. Reduce physical distance and travel costs.⁵³
 - Increase institutional transparency. Policies creating connections between local institutions and communities can increase trust. Community-based monitoring and decentralization policies involving local stakeholders can improve social capital and engagement in health policies.⁵⁴
- When implementing programs to increase social capital, be mindful of context and preexisting community-level social norms. Building individual social capital is important, but this exists within the wider community's social structures and norms. Prior to implementing programs aimed at building social capital, several steps should be considered:

- Evaluate context and preexisting social norms. Cognitive social capital, such as trust or social cohesion, increases the alignment of individuals with social norms, whether they are positive or negative health-related practices. There is a documented risk of the negative "social contagion" aspect of social capital.⁵⁵
- Determine whether interventions are best implemented at the individual or community level. In contexts in which beneficial health-related behaviors and practices are lacking, social capital interventions should be implemented at the community level, alongside programs aimed at changing health behaviors.
- Consider participatory program designs. Health interventions and programs that use participatory program design address issues of community-level negative health behaviors and practices and build social capital simultaneously.
- Theory suggests that targeting interventions toward populations in which social capital is low will increase the likelihood of a beneficial health effect. Contexts in which social capital has been damaged by violence, crime, or disaster may struggle to reestablish trust, negatively impacting health. Potential groups or communities to target include the following:
 - Post-conflict communities. The negative effect of conflict on social capital and the subsequent impact on mental and psychological health has been explored in multiple settings. Findings suggest the relevance of policies to rebuild community cohesion, civic engagement, and social inclusion.⁵⁶⁻⁵⁸

- Populations disproportionately affected by social isolation. Policies that guard against the onset of social isolation and loneliness of vulnerable populations (e.g., the elderly and individuals living with HIV/AIDS59-62) should be considered. Supportive communities provide additional protection against mental health issues and social isolation. Berkman and Glass showed that social isolation has a comparable effect to smoking as a risk factor for premature mortality.⁶³
- Pregnant women and mothers of newborns. Studies have identified associations between maternal social capital and child health outcomes.⁶⁴⁻⁶⁸ Interventions for mothers with lower education and economically marginalized families may improve health equity as a larger impact of maternal social capital on child health.

3

What should be prioritized as a future research and learning agenda?

Countries should start collecting detailed and large-scale data on social capital. Data are routinely collected on some forms of capital, such as gross domestic product and (to a lesser extent) human capital. Countries should increase efforts to collect information on social capital. The case for collecting data on social capital is increasingly strong, given the expanding range of evidence of its impacts. Standard measures of social capital would be beneficial in allowing cross-country comparisons, and measuring different aspects or types of social capital may be more or less relevant for different contexts or research objectives.

- Robust evidence on the impact of interventions and policies to build social capital is urgently required. Paldam and Svendsen noted the policy dilemma related to building social capital in that voluntary cooperation is self-enforced, suggesting that attempts by external parties to induce individuals or communities to trust each other and cooperate may be problematic.¹⁷ Therefore, studies of programs and interventions purposefully aimed at building social capital are required to better understand the methods and contexts in which this may be effectively done. Rocco and Aas note two international organizations that focus on building social capital, the Asset-Based Community Development Institute and Home-Start, but suggest that more research on the effectiveness of their approaches is needed.69
- Countries should begin the collection of cost data on potential interventions to build social capital. Given limited health budgets, choices must be made about what interventions to finance. Therefore, unavoidable tradeoffs must be made if deciding to fund interventions aimed at building social capital. Without cost information, it is impossible to compare the cost-effectiveness of social capital interventions and fully assess the economic case for investing in this area.

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