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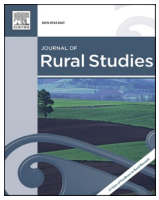

Leveraging social ties to financial gains: Exploring the impact of social capital in rural development☆

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ABSTRACT

Social capital, defined as networks of individuals linked through bonding or bridging relationships, plays a crucial but poorly conceptualized role in place-based development. The word "capital" implies an underlying value of the social connections throughout a community, and this study explores how these social relationships are used to initiate, plan, access financial capital, and implement economic development projects in rural areas. We avoid county-level aggregation bias and use a divergent pathway case study of projects across eight communities to examine how social ties are used during rural development in places with both high and low financial capital. Both types of communities had active social networks and were successfully completing projects, but they were sometimes using their ties differently. We find that most projects initiate through bonding social capital. The availability of financial capital within a network significantly influences network ties and their utilization in later steps of rural development projects. Low prosperity communities with limited financial capital are more likely to use bridging ties to leverage new financial resources. High prosperity communities relied on both bonding and bridging ties but had more potential actors, financial resources, and business experience. We find social and financial capital are intertwined, suggesting future efforts to support rural development should consider both types of assets.

1. Introduction

Few economic development research topics have received as much multidisciplinary attention as "social capital" over the past few decades. Robert Putnam's best-selling book, Bowling Alone (Putnam, 2000), raised national awareness and alarm about the decline of civic organizations and social capital. Since then, social capital—loosely defined as networks of individuals linked through bonding or bridging relationships—has become a much-discussed but poorly interrogated concept within studies of place-based development (Westlund and Adam, 2010). Social scientists have often quantified social capital at the county level using secondary data, including churches and civic institutions (Rupasingha et al., 2006), harvested social media information (Chetty et al., 2022), or political participation and volunteerism (Costa and Kahn, 2001). While these efforts yield interesting, sometimes valuable insights, we argue that they ultimately fall short of truly measuring the way in which well-functioning social networks can generate place-based economic activity.

This article explores two primary questions: How do rural social networks leverage resources for local development? Second, how do social capital networks vary across communities? Rather than achieving this with county-aggregated measures, our analysis uses granular qualitative data collected from community leaders in rural Iowa to explore how social ties are leveraged for project development. We selected communities with contrasting levels of social capital and economic prosperity to observe how well-functioning social networks influence local development and decision-making in places.

We examine the social ties leveraged throughout rural development projects. By conducting semi-structured interviews of engaged leaders in two towns within each county, we gain a more nuanced view of social capital by studying the roles of community stakeholders. These interactions unpack how social capital interacts with financial capital. Across the eight communities included in the analysis, residents initiated and implemented projects through coordinated efforts, expanding

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their networks over time to secure funding. Both prosperous and less prosperous communities used bonding and bridging ties to access expertise, support, and financial capital. We find that projects often originate with bonding ties among socially connected individuals while bridging ties are most crucial for when raising money and other resources for the project. Residents in less prosperous communities relied on bridging ties more often to obtain financial resources.

2. Measuring social capital with a focus on bridging and bonding ties

Social capital is frequently touted as a special quality that, under the right circumstances, is an essential ingredient in place-based development. Robert Putnam is credited with popularizing the concept (Putnam, 1993, 1995, 2000), building from Granovetter's (1985) discussion of the "embeddedness" of economic activity, as well as Coleman (1988), who initially posited that social capital enables the "achievement of certain ends that would not be attainable in its absence."

Social capital has been used to explain why some communities were more successful in coping with economic transformation (Safford, 2009) and why some local product marketing strategies outperform others (Farris et al., 2019; Moreno and Malone, 2021). The implied causal link between social resources and community outcomes is that organizations increase capacity for civic engagement. Authors have investigated the coincidence of social capital with other socioeconomic outcomes in multivariate analyses. Table 1 summarizes some of the variables and methods used to create proxies for social capital. Scholars have found support for claims that communities with higher levels of social capital have lower crime rates (Deller and Deller, 2010; Williams and Windebank, 1999), higher economic growth (Rupasingha et al., 2000; Mencken et al., 2006; Taylor et al., 2023) and lower poverty rates (Tolbert et al., 2002).

In a now-seminal article, Granovetter (1973) introduced the concepts of "strong ties" and "weak ties," theorizing that strong ties, such as those between close friends and family, provide emotional support and social cohesion, while weak ties, such as those between acquaintances, serve as bridges to new information and opportunities. This framework highlights the critical role of weak ties in facilitating the flow of information across social networks, which can lead to greater innovation (Hauser et al., 2007), policy adoption (Arnott et al., 2021) and access to resources (Kavanaugh et al., 2003). Building on Granovetter's theory, the distinction between bonding (strong) and bridging (weak) ties has become significant in understanding social capital, community resilience, and socioeconomic development across various contexts. Bonding ties foster internal community support and cohesion, whereas bridging ties are vital for linking communities, farmers (Wahid et al., 2024) and youth (Visser et al., 2021) to external resources and opportunities. Bridging ties are seen as vital for community investments and resilience during economic shifts, as they enable communities to access diverse information, expertise, and financial capital (Briggs, 1998; Gittell and Vidal, 1998; Putnam, 2000; Safford, 2009).

The significance of bonding and bridging ties extends beyond individual connections to the realm of organizational structures and community associations. Some studies of associational activity also reflect a distinction between bonding and bridging organizations, examining how different types of associations contribute to social capital formation and community outcomes (Briggs, 1998; Deller and Deller, 2010; Gittell and Vidal, 1998; Rupasingha et al., 2006). This approach to analyzing associational density provides insights into the broader social fabric of communities and their capacity for both internal cohesion and external connectivity. Different disciplines propose methods to measure bonding and bridging ties, such as church membership data (Beyerlein and Hipp,

Table 1
Measures of social capital.

Author(s)	Region	Concept	Measurements			
Tolbert et al. (1998)	U.S. Counties	Civil society	Third places, associations	% Small mfg firms, % family farms	% in civically engaged denominations	
Onyx and Bullen (2000)	5 Australian towns	Social Capital	Individual survey: 68 questions about 8 dimensions of social capital (community, agency, trust, neighbors, friends, tolerance, value of life, workplace). Rated on a 1 to 4 scale.			
Putnam (2000)	U.S. Counties	Social capital	Newspaper readership	Voter turn-out rates	Associational membership	
Costa and Kahn (2001)	U.S.	Social capital	Volunteering	Memberships	Entertaining friends/relatives	
Leonard (2004)	West Belfast	Bridging vs. bonding ties	Individual interviews: Participation in informal help and support networks, ability to rely on neighbors for help, involvement in paid informal economic activities, and other questions.			
Mencken et al. (2006)	Appalachian Counties	Civic engagement	% in civically engaged religions (1990)	# of Nat. Assoc. per capita (1990)	# of third places (1990)	
Rupasingha et al. (2006)	U.S. Counties	Social capital	Census response rate	Voter turnout in presidential elections	# of NCCS non- profits per 1000	# of CBP establishments per 1000
Coffé and Geys (2007)	Flanders, Belgium	Bridging vs. bonding organizations	Authors use gender and age of organization's membership lists to create a diversity score. Organizations that balance gender and include multiple age groups are labeled as bridging organizations.			
Besser (2009)	Iowa Counties	Bonding and Bridging ties	Telephone surveys in 1999 and 2004: 150 households in a single town in each county. Questions included town friendliness, friendships, trust, respect towards leaders, organizational and personal motives.			
Isserman et al. (2009)	U.S. Counties	Civic engagement	Social capital establishments per capita	% Small mfg. firms, % family farms	% in civically engaged denominations	% of the population w/a single shared ancestry
Safford (2009)	Two cities in Midwest	Social networks	Shared membership in economic organizations	Shared membership in civic organizations		
Deller and Deller (2010)	U.S. Rural Counties	Social capital	# of CBP establishments per 1000	# of NCCS nonprofits that have filed a 990 per 1000	# of churches (evangelical, Catholic, Jewish, other) per 1000	Cooperatives per 1000 people
Chetty et al. (2022)	Age 25–44 by U.S. zip code	Social capital	Facebook friendships			

Full citations for these measures can be found in the reference section.

2005) or surveys assessing trust and reciprocity (Besser, 2009; Leonard, 2004; Onyx and Bullen, 2000). Authors also note inherent problems creating these proxy variables (Coffé and Geys, 2007; Leonard, 2004; Tarrow, 1996; Woolcock, 1998).

Building on these theoretical foundations and measurement approaches, this study adopts a comprehensive framework for conceptualizing and operationalizing bonding and bridging social capital, aligning with recent research in rural contexts (Arnott et al., 2021; Craig et al., 2023; Erlandson, 2023). We broadly define bonding capital to encompass close relationships between individuals who share similar backgrounds, including income levels, assets, and religious affiliations. Conversely, we characterize bridging ties as weak relationships that connect people from diverse backgrounds who interact infrequently. Importantly, this conceptualization incorporates the notion of linking ties, which specifically refers to connections with individuals in positions of authority or influence, such as government agencies (Woolcock, 1998).

This inclusive approach to social capital measurement is consistent with recent studies that have explored the complex interplay between different types of social ties in various settings, from agricultural innovation to community development (Cofré-Bravo et al., 2019; Dobbin and Smith, 2021). By adopting this comprehensive framework, our study aims to provide a nuanced understanding of how different forms of social capital contribute to community resilience and socioeconomic development, addressing some of the measurement challenges identified in previous research.

3. Conceptual framework

Prior work has identified issues with using measures of associational density to operationalize the concept of social capital as this confuses the theoretical argument about how social capital is produced (through repeated interactions in an organization) and what benefits it creates (a lively, engaged society with multiple associations), see Woolcock, 1998. Some work has begun to disentangle the relationships between networks and outcomes, Cofre et al. 2019 finds that social networks are complex, different configurations are not inferior or superior. As such, our conceptual framework focuses on how social capital enters the local rural development decision process through bridging and bonding ties within distinct levels of exchange (Robison et al., 2020). Using the project completion cycle, we focus on distinct points at which projects can be examined and compared. These distinct points of community context, initial network structure, network functionality, place resources, and project outcomes are described below.

First, *community context* includes the socioeconomic characteristics of the individuals within a rural development project network. These characteristics—class, income, religion, ethnicity, and sense of place—shape network formation and network function within a population by creating bonds between some people and gaps between others that require bridging relationships. *Initial network structure* is defined by the ties and source of trust between the core set of people in the primary network. Network structure can be measured in terms of requirements for membership, the reputational history of the group in the community, project history in the community, and past solicitation efforts for fundraising and volunteering. Some projects originate from a single person or a small informal network of people in a community; in these cases, the initial network structure defines the position of this person or persons within the community's social and economic sphere.

Network functionality encompasses project implementation aspects, including how the network identifies, procures, and organizes financial and human capital resources from within and beyond its members. There are several possible stages during a project to identify how the network functions, including garnering support for a project, making decisions during the project, finding resources, completing a project, and maintaining the project. The network may use one or a combination of the following strategies: look internally for resources, solicit resources from within the community, within the full county or surrounding counties, from private foundations, or state and federal governments or other programs from public institutions.

Place resources become important during project implementation as a network's perception of the availability of leadership, volunteering, financial support, and public use and support of projects influences the community's response to solicitation strategies, how many businesses and individuals are available and willing to donate, as well as network confidence in the project, and public communication strategies.

Project outcomes—what was accomplished and perceptions on project implementation—affect community outcomes, networks, and future projects. The primary network can strengthen or weaken its internal and external ties with each project. Individuals in the community may gain or lose the trust of others, and the project may influence the future willingness of people within and outside of the network to donate and volunteer (Putnam et al., 2004). These effects may benefit or harm individuals and organizations interested in future projects, even if they were not directly involved.

We adopt an inductive approach to examine how social networks and financial capital influence the initiation, planning, and implementation of rural development projects. Drawing on previous empirical work, particularly Safford (2009) and others, we consider the potential importance of both bonding ties—close relationships within similar groups—and bridging ties—which connect diverse groups and provide access to varied resources —in rural development. To guide our exploration of these research questions, we consider two key propositions.

1. The role of bridging ties in resource acquisition may differ between prosperous and less prosperous communities.
2. The availability of financial resources within a community might influence how social networks are utilized for development projects.

These propositions serve as starting points for our investigation, rather than formal hypotheses to be tested. We remain open to alternative explanations and patterns that may emerge from our data. We assume that prosperous places use more bridging ties and have greater financial capital. These factors may influence a community's ability to undertake development projects and shape how social networks are leveraged. We also recognize complex interactions between social capital and financial resources that may vary with community context.

By examining cases from communities with varying levels of prosperity and social capital, we aim to uncover nuanced patterns in how social networks and financial resources are leveraged for rural development. This approach allows us to explore potential differences in network utilization between more and less prosperous communities without presupposing specific outcomes.

Our goal is to develop a grounded understanding of how social capital operates in different rural contexts, considering factors such as the initiation and planning processes for development projects, strategies for accessing and mobilizing resources, the roles of various community stakeholders, and challenges and successes in project implementation. Through this exploratory approach, we hope to contribute to a more nuanced understanding of the complex relationships between social networks, financial resources, and rural development outcomes.

4. Methods

4.1. Case study design

Our research design involves a multi-county embedded case study of the organizations and individuals who engage in rural development projects in their communities. We use a deviant pathway case study approach that selects places most likely to reveal the relationships between our social capital variables (Gerring, 2007), and we use theoretical replication by selecting places that are least likely to share the same

relationships (Yin, 2003). We strengthen our design by using literal replication as shown in Fig. 1 and choose a total of four counties and a total of two communities within each county for study. Choosing only one project in each community allows us to develop rich detail. Furthermore, we use a combination of purposive and snowball sampling to reach our population of interest: engaged residents and elected and informal leaders in each community.

4.2. Case study selection

We focused on rural counties as social relationships are more transparent in small communities (Duncan, 1999). We used the available social capital database produced by Rupasingha and Goetz (2008) to categorize counties by their observed social capital across four separate social capital variables, including presidential election voter turnout rates, census response rates, number of civic associations per 10,000 people, and number of not-for-profit organizations per 10,000 people for each county. While this measure is inadequate for our concept of the number and type of ties used during an economic development project, it is nonetheless a commonly used, available quantitative proxy.

We restricted our case selection to a single state, Iowa, to control for state policies, resources, and programs and, to some extent, historical social settlement and economic development patterns. We focus on Iowa because it has the largest number of high-prosperity counties (Isserman et al., 2009), and its counties are generally equal in area. Iowa's high prosperity and high social capital counties are among the most favorably ranked nationwide (Rahe, 2013). In contrast, the low prosperity and low social capital counties in this study are closer to reflecting an average U.S. county as many counties are rated far worse on both measures. This approach allows us to maximize our choices among places that might offer the best and least likely chance for observing social networks and ties operating the way the social capital literature would imply, i.e., in ways that benefit the community.

To build the internal validity of this study, we selected two counties from each extreme: high prosperity and high social capital and low prosperity and low social capital. Next, we looked at narrowing our list of counties to maximize differences in financial resources (an in-depth description can be found in Rahe, 2013). We measured financial capital as net income from the sale of agricultural commodities, personal per capita income, and median household income. These variables were related and shared similar relationships over time. The literature on the effects of social networks, ties, and financial capital on development presents something of a consensus: the more a community has, the better off it will be. We chose counties that have experienced limited Hispanic immigration because the effect on social networks merits separate analyses. Also, to minimize the effect of urbanization on social and economic development, we selected four counties similarly distant from metropolitan statistical areas.

We studied the most populous community and a smaller community in each county, selecting eight communities to gather data on social networks in rural communities with varying sizes, histories, social norms, and local cultures. For our analysis, we choose recently completed projects involving a clearly define group of individuals. These two criteria led to the selection of projects with an organizational lead, a board of directors, or a fundraising component listed in Table 2. Choosing a single project in each community represented a trade-off between accurately describing a set of active social networks and ties and comprehensively examining social assets. Recent projects might be less likely to reflect the types of behavior and processes that produced cumulative socioeconomic outcomes but are easier for people to remember and describe.

4.3. Data collection and analysis

We conducted semi-structured interviews with study participants and used purposive sampling to select subjects. We would ask project specific questions, while a common set of questions for all participants revealed their involvement in the community and ties to others. We conducted interviews because of the richness of data and the ability to interact with participants to clarify responses. Interviews lasted between one and two hours.

Interviews were recorded. Due to the volume of material, we marked times during which the participant talked about specific involvement in local projects, mentioned opinions about projects, leaders, or other groups in the community, or talked about their ties to the community. We then transcribed these portions of the audio files and compared all interviews to one another and to written documents to develop thick project narratives that identify bridging or bonding ties.

We used a staged participant selection strategy that facilitated an introduction to the county and recent events, general context questions, and a community overview as we selected community projects. We then sought to speak to various individuals who contributed to different aspects of each project. As the interviews unfolded, we spoke to individuals and organizational leaders mentioned by more than three other participants. We relied on internet searches, published boards of directors, membership and donor lists and a snowball sampling approach. We spoke to the following individuals in every county: mayors, city administrators, economic developers, members of county boards of supervisors, members of county foundation boards, hospital administrators, business owners, and farmers.[1] Table 3 summarizes the completed 118 interviews during two visits to each county.

Studying prosperous Carroll and Humboldt Counties, we will be most likely to find empirical support for how social networks and ties positively affect community outcomes. The patterns we expect to find in these two high prosperity cases should be the hardest to find in our least likely cases of low prosperity, Appanoose and Decatur counties. Table 4 summarizes the key points of comparison during a project's implementation, highlighting differences in the use of bridging ties and the availability of financial capital across communities. This paper focuses on network structure of the initiating group behind each project and how this initial network functioned to solicit other resources, with a focus on financial resources.

5. Findings: use of social capital to implement local economic development projects

5.1. Quantitative measures of prosperity, social capital, and financial capital

Prosperity index values in rural Iowa counties ranged from the most prosperous county at 19.0 to the least prosperous county at 37.9. The counties with the lowest prosperity scores were counties with some of the lowest per capita income. Fig. 2 displays the potential 62 rural, non-core counties in Iowa in white, the state's metropolitan and micropolitan counties in grey, and all the Census-recognized places in darker grey. These case study criteria led to the choice of the following counties: Appanoose, Carroll, Decatur, and Humboldt, and the case study communities are circled.

Table 5 presents prosperity outcomes for each county of interest. Humboldt and Carroll have similar high prosperity outcomes; Appanoose and Decatur have similar low prosperity outcomes. Our chosen counties are all predominately non-Hispanic white populations where

[1] In an effort to "de-bias" our qualitative interviews, we used a combination of personal observations, historical archives, newspaper articles, editorials, reports, meeting notes, and websites to assemble county and town histories and project narratives. When possible, we attended public meetings during our visit and were invited to sit in on a private meeting in Appanoose. Residents in each county also provided town tours, as ride-alongs can provide additional insight into the community (Boettke et al., 2013). Additional details and results can be found in the public dissertation (Rahe, 2013).

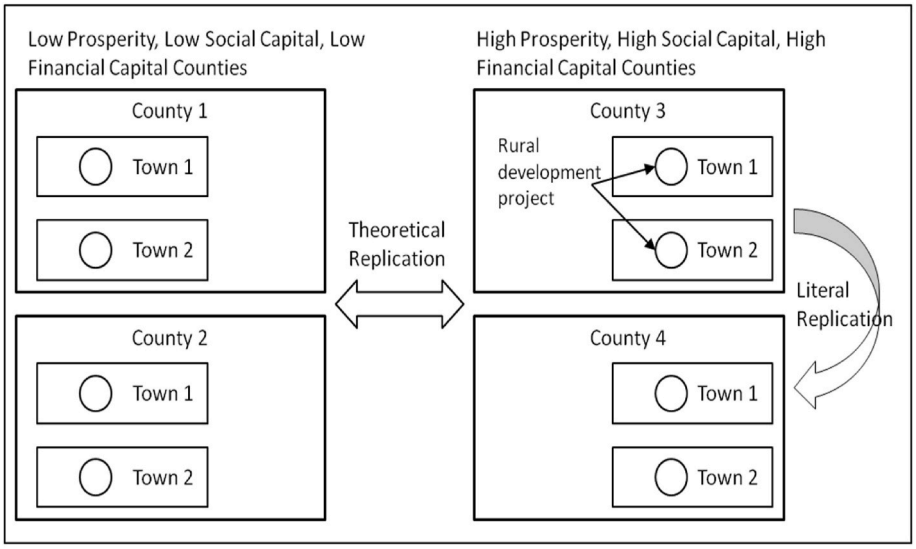

Fig. 1. The embedded case study research design.

Table 2
Case study communities.

County	Place	2010 Total Population	Indicators	Project
Humboldt	Humboldt	4,690	High	Expand housing
	Livermore	430		Fund summer concert event
Carroll	Carroll*	10,103	High	Attract hi-tech manufacturer
	Manning	1,500		Retain local retail option
Decatur	Lamoni	2,324	Low	Create biodiesel company
	Leon*	1,977		Rebuild county hospital
Appanoose	Centerville*	5,528	Low	Build a resort lodge
	Moulton	605		Attract a rural call center

* County seat. The county seat of Humboldt County is Dakota City a small city with a 2010 population of 843, adjacent to the city of Humboldt.
Source: US Census, author's calculations.

Table 3
2012 Field research summary by county.

Data Collection	Appanoose	Decatur	Humboldt	Carroll
First Visit	April 15–18	April 18–20	April 29 – May 2	May 2–4
Second Visit	May 20–25	May 28-June 1	Aug 26–31	Sept 23–28
Days in Field	7.5	6.5	6.5	7.5
Attended Meetings	3	No	1	2
Town Tours	2	1	2	1
Stayed with Host	Yes	Yes	No	Yes
Total Interviewees	34	26	25	33

approximately 15 percent of adults over the age of 25 attended college and live between 60 and 76 miles from the nearest city of 50,000. One county, Decatur, has an Interstate, while the others do not.

5.2. Characterizing social capital across the phases of a Project's completion cycle

The eight economic development projects are summarized across the project implementation process in Table 6. This high-level summary provides some context for the results, lengthier descriptions of each case study can be found in Rahe, 2013. The projects ranged in scale and succeeded in seven communities. As a next step, Table 7 classifies the social capital used during the network structure and the network function phase as bonding, bridging, or both when both types of ties were integral.

Table 4
Organizing data collection and narrative analysis around research questions.

Phases of a Project's Completion Cycle	Use of Bridging Ties	Availability of Financial Capital
Network Structure	Project initiators have strong ties to people outside the community.	Project initiators have personal and/or business wealth.
Membership in primary group.	Group has experience working with agencies, and the community's trust.	High level of wealth within the primary network.
Role of group within the community.		
Network Function	History of working together with "strong" leaders.	Scope and breadth of community projects are larger.
Primary group's connections within and outside the community.	Larger initiatives assemble a representative board from within the community.	Group knows who to contact in the community for resources depending on the project.
Solicitation of volunteers and money.		
Place Resources	The community has an informal protocol for raising funds and soliciting volunteers.	Not all projects require outside funds, substantial fundraising can occur within the primary network.
Community's response to solicitation strategies.		
Participation of businesses and wealthy individuals in the community.	Organizations are expected to work together on specific issues, businesses are expected to contribute.	Large employers in town are routine sources of public donations.
Project Outcomes	The community expects to collaborate and fundraise for "public goods" projects each year and the project has broad buy-in.	The project is fully funded and potentially expanded during the planning phases.
The result of choices during the implementation of the project.		
The history of projects within the community.	Particular groups have taken the lead on a variety of publicly supported initiatives and bring in the public when necessary.	The community has a history of taking on large projects and being an early participant in government grant programs.

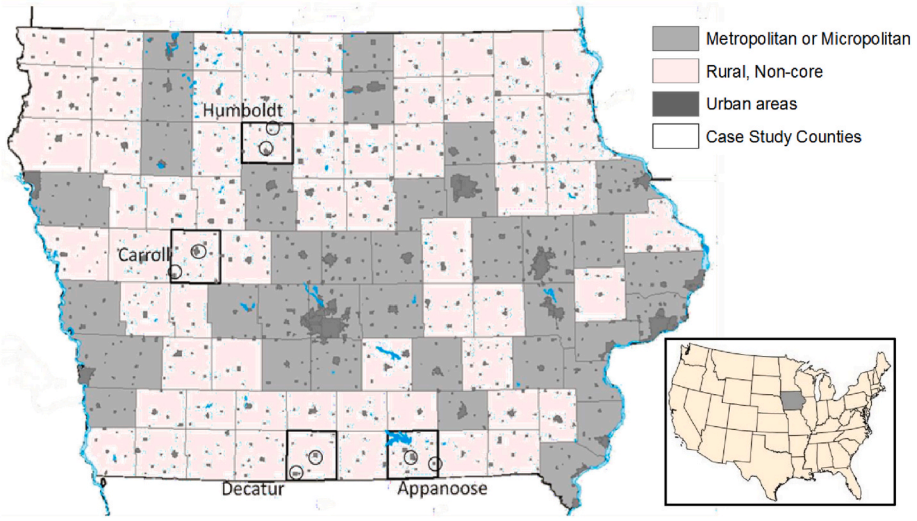

Fig. 2. Counties and cities chosen as sites for case studies.

Table 5
Case study county characteristics.

	Cumulative Prosperity Score (lower = better)	2005 Social Capital Index (higher = better)	County Population (2000)	Distance to 50,000 pop city (miles)	% White (2000)	% Hispanic (2000)	%attended ≥1 year of college (2000)
Humboldt	19	2.78	10,381	60	98	1	15
Carroll	20.1	2.71	21,421	62	99	1	15
Decatur	32.9	0.81	8,869	64	97	1	15
Appanoose	35	0.69	13,721	76	98	1	12

Sources: Cumulative prosperity calculated by authors based on U.S. Census Bureau county level data for 1980, 1990, 2000 using Isserman et al. (2009), social capital index from Rupasingha and Goetz (2008), remaining columns based on 2000 U.S. Census Bureau data.

5.3. Bonding social capital was critical among the group that initiated most projects

Across both types of communities, the network structure of the initial group that started a development project was usually built on bonding ties. Two projects, Livermore and Moulton, originated from friends who regularly spent time together and then formalized their efforts into official economic development groups after identifying a goal. In Humboldt, the project was initiated through community leaders who formed a non-profit. Formal economic development groups led projects in Centerville, Carroll, Lamoni, and Manning. These groups did not always have paid positions and all were supported by volunteers, often with deep community ties. Across all seven groups, people were more similar than not. They had an interest in development and often had similar backgrounds as business owners.

Finally, Leon's project was initiated through the hospital board, a publicly elected group of individuals across the county who loosely knew each other. After disputes about where the hospital should be rebuilt, the board's work came to a standstill. One Lamoni resident who served on the board tried to use his bridging ties, built by being a regular member of the Leon Rotary Club, to talk with people from Leon about why it made economic sense to relocate, but he was ultimately not re-elected. He spoke frankly about social capital,

> "When the hospital situation arose it was a very valuable connection for me to have a base in Leon as well […] to tell them that what we are trying to do in Decatur County, and what everyone has told us in all of our surveys, that what we need are more good jobs. And that's when you wear two hats you can see those things but you couldn't otherwise."

Leon's residents aggressively pursued nominations and voter-turnout for three open board seats to protect the town's desire to retain the hospital locally. The new board, still built on bridging ties, proceeded with a renewed sense of duty to rebuild the hospital at its original location.

5.4. Network function –examining types of social capital used to develop projects

Networks often relied on their bonding ties first as they sought to move forward. Both Moulton and Livermore started economic development groups through bonding social capital, group members in Moulton described how they made the transition,

> "We were a loose knit group. We didn't have our organization at that time so we had to scramble and get our by-laws. A local boy here who has Moulton ties, did all of our legal work for us, pro-bono." "The first money towards the project came as a gift [from a long-time resident whose family had supported the town], $75,000 to get the group going."

The network structure that initiated seven of the eight projects relied on bridging ties to seek support. Participants across all projects spoke about the importance of the initiative of specific individuals to find the resources that were needed. Sometimes this required building new relationships, a volunteer from Centerville described how he stayed up to date during a three month process to identify locations for a state investment,

> "I took it upon myself to go to every one of those meetings because I wanted to know what was going on […] A couple of times I got a state senator to go with me."

Others in Centerville recounted how this individual formed a

Table 6
Summary descriptions of economic development cases.

Communities by prosperity score from lowest to highest	Network structure: Initial Group	Network Function: Project development and organization	Network Function: Soliciting resources for a formalized project	Place Resources: Community response to implementing a project	Project Outcome: Completion & Maintenance
Appanoose-Centerville: Build a resort lodge	Business leaders with previous experience working together.	Seek regional collaboration across four counties, work with Army Corps of Engineers and Iowa DNR, solicit recently returned residents.	Convince state legislature, two Iowa Governors, two counties bonded for the issue, collaboration with chamber of commerce to share hotel tax, private donations, local business donations.	Army Corps of Engineers, Iowa DNR, hired private contractors, consultants, no volunteer labor, in-kind donations from regional water and telecom.	Debt service, on-going private fundraising, expanding site amenities.
Appanoose-Moulton: Attract a rural call center	4 friends who routinely drank coffee together.	Bring in family, a local entrepreneur, mayor, local utility company, school superintendent.	Gift from former resident, local electric cooperative, bank, county economic developer, USDA rural development, grant writing help from school superintendent, local utilities CEO filed 501c3 status, county foundation.	Hired contractors. Volunteer labor: high-school students, business client, heavy machinery operation, initial group did landscaping.	Debt service, building owners, company relationship.
Decatur-Leon: Rebuild county hospital	Elected board, no term limits.	Solicited outside businesses to co-locate, found land for new location.	Leon residents rejected relocation to another town, board turnover. Sought USDA loan, bank, hospital auxiliary, formed a hospital foundation.	Individuals donated to foundation, all construction work was hired out.	Debt Service, Public relations, Foundation $.
Decatur-Lamoni: Create a biodiesel company	Member of economic development group with an idea.	Invited meeting, former employee with ties to product technology, hired lawyers and consultants.	Local investors, board, Farm Bureau, banks, cooperation from other county, multi- state solicitation of shareholders, local utility companies.	Changed locations to attract more investors but project failed to generate enough capital to be implemented.	N/A project failed.
Humboldt-Humboldt: Expand housing stock	A request from city council to expand housing conditions.	Banker and two realtors put together an organization based on skills and needs for the project.	Federal housing funds, MIDAS funds periodic housing survey to employees and residents, county and city make annual contributions, volunteer labor from board bankers and realtors.	Group buys land, zoning changes, City puts in infrastructure, private buyers hire developers, lot sales finance later infrastructure.	City maintains project until all phases are complete.
Humboldt-Livermore: Summer event	3 husband and wife couples who were friends.	Family, close friends, city support.	Community fundraisers, county foundation; ticket sales, city donates services; business co-sponsor, volunteers.	Local and county organizations, local businesses, school, city pool.	Maintain enthusiasm, and volunteers.
Carroll- Carroll: Attract a high tech manufacturer	Member of the economic development group who found a potential lead.	County economic devloper, selective inclusion by others who can make offer to company.	Sought USDA funding, sought county funding, city incentives, local group of venture capitalists.	Within-group services and labor to assist starting operations.	Maintain relationsip with company.
Carroll- Manning: Retain a retailer in the community	Established board reacting to changing conditions.	Made decision as a board, contacted other chain retailers, contacted owners who live out of town.	11/13 board members donated, employers, business relationships, members of other boards, friends, family ties.	Bought supplies locally for building maintenance, volunteer and contracted labor.	Landlord relationship, future business profitability.

relationship with someone from a state department that was instrumental in keeping the project on schedule during implementation.

Groups were often aware of individual's strengths and knew how to capitalize on them as they were looking for support to develop and organize a project outside their network.

> "She is more educated than any of us and so she can talk more intelligently than I can. We would run her in ahead of us sometimes when we needed her to talk to somebody."

> "Her past experience as a lobbyist was invaluable while we worked to raise money."

5.5. Network function –examining types of social capital used to finance projects

Bridging ties were important to securing financial resources for seven of the eight projects. Only the effort to attract a high-tech manufacturer to Carroll was successfully implemented within the original network structure which had sufficient skills and resources to complete the project alone. Moulton, a town of 605 in a low prosperity county, exemplified how a small group used a network of bridging ties to lower the overall cost of the project. One of the leaders said,

> "We asked for volunteers and we had a contractor that had two bulldozers … We actually had guys that volunteered their dump trucks … we did about 80 hours of work. A guy who was a retired contractor got on [his] dozer and ran it all day for eight hours."

Someone described how another member used work and community ties,

> "As an insurance salesman, he knows a lot of truck drivers, and so he made phone calls until he found a guy who would be returning through Moulton unloaded. He went with the guy and loaded the furniture. When it was time to unload, he called the local high school and asked for student volunteers to unload and set up the furniture."

In Manning, the local economic development group sought to raise $55,000 to reopen a local retail store after a regional chain closed. The organization already owned the building but needed funds to update the facility and subsidize the purchase of initial inventory for new managers who pledged to reopen. Eleven of the 13 board members personally pledged $500 and agreed to raise money through $500 donations from others, the remaining two members supported the project in other ways. Members said the group chose to solicit $500 because they thought this was a reasonable ask given the perceived value in maintaining the store. They accepted donations of any size, but time was an important factor as the group wanted to get the new store reopened as soon as possible.

The Manning group raised $51,900 within 48 days of planning and solicitation. Members were asked to contact people that they knew, but several struggled to isolate a single relationship that they relied on when choosing whom to contact, the small town had dense networks. The

Table 7
A summary of the network that initiated, supported and financed each case.

Communities by prosperity score from lowest to highest	Network Structure: Initial Group	Network Function: Seeking support in project development and organization	Network Function: Soliciting resources for a formalized project
Centerville: Build a resort lodge	Bonded by joint experience/ motivation.	Both	Both
Moulton: Attract a rural call center	Bonding	Both	Both
Leon: Rebuild county hospital	Bridging common interest, elected to serve.	Navigated all major social networks in county.	Both
Lamoni: Create a biodiesel company	Bonding, local university alumni.	Bridging – former employee, lawyers, consultants.	Both
Humboldt: Expand housing	Bonded by joint experience/ motivation.	Bridging - institutional based ties.	Both
Livermore: Summer event	Bonding	Mostly bonding, some bridging.	Both
Carroll: Attract high tech mfg.	Bonded by joint experience/ motivation.	Bonding - within network resources.	Bonding
Manning: Retain general retailer	Bonded by joint experience/ motivation.	Bonding- within network resources.	Both

hospital administrator, who was relatively new in town, relied exclusively on contacts through her employer. Another member relied on a similar strategy, although he had changed jobs, so he relied on ties through his former position. One of the members was the town's mayor, whose family has lived in the community for three generations. He is retired but active in several organizations in town and noted that he knows "just about everyone."

5.6. Examining differences in place resources

A community's response to locally led economic development is also an important context for understanding the efficacy of social capital. As noted in Table 7, we focused on the resources each community was able to organize and pledge towards the economic development project. By interviewing people from formal and informal economic development groups as well as people with county-wide versus single community roles, we were able to observe different perceptions between communities in the same county as well as differences in economic development resources. Members of the smaller communities in a county would acknowledge they had access to fewer resources than their peers in the "bigger city".

> "One of the things we do, that is harder to do in this small of a community, is fund economic development. Where you have a manufacturing base that exists, …some of those factories over there will give $10,000 or $20,000 from a bank. The more you have to draw on the easier it is to give away."

> "They can even hire an economic developer as a full-time job."

Economic development efforts in the smaller cities were often more loosely organized as well, members of groups in the low prosperity counties shared,

> "So much of what we do is not a scheduled meeting. […] We are all people who work other jobs. This economic development thing is a volunteer thing, and it becomes more of a passion thing. It takes local passionate volunteers. Because there is no money to pay them, and you have got to have passion because you are going to have a lot of people telling you, 'It is not going to happen. It can't happen. We don't have the money to make it happen'."

> "I try to kind of know what they're doing, and one of things I get after them for is having more regular meetings. Rather than at the coffee shop, [I tell them] you need to come over and use my board room and have a more formal meeting rather than coffee shop talk. […] but that's the nice thing about small town, is that you have impromptu meetings.

Prosperous Carroll County acknowledged differences in resources between their town and larger towns as an asset. The group, including paid professionals and volunteers, worked hard to attract a manufacturer. The economic developer said,

> "That is what makes a town like Carroll unique. We are big enough to handle a project like this and larger, but we are small enough that small projects mean something to us."

A history of successful locally led housing projects in prosperous Humboldt started when bankers and the owners of several small manufacturing firms began talking about how to increase housing options to attract more workers for expanding companies. The group formalized into a registered non-profit with ex-officio positions, the city administrator for the town of Humboldt, two county board of supervisors, and a member of the city council. Other members included bankers, investors, realtors, and at least one owner or manager from a local manufacturing firm. Part of the organization's success was due to key members' experiences: financing a project, finding land, and compliance with city codes. Also, the most active members were encouraged to work on these housing projects by their employers or were self-employed.

5.7. Project outcomes

The initial groups involved in each project cared about the project's outcome and the broader effect on the community and its reputation. Moulton and Livermore used their initial success to keep going and expanded their scope. Manning retained ownership of the retail building to remain invested in the project's success. Leon's project regrouped, slowed the timeline, and scaled down the size of the project to respond to strong community pushback. Even when a project was successful, image mattered. Centerville was sensitive to complaints that their project was chosen over other sites in the state and wasn't immediately profitable. Moulton worked hard to make sure the average wages of the new jobs were not printed in a major statewide newspaper, because they didn't want 'high-income urban people' to look down on their achievements and trivialize what these jobs would do to support families in their town.

The effort to attract a biodiesel plant to Lamoni navigated multiple networks within the county and leveraged bridging ties outside the community to find investors. While time consuming and ultimately unsuccessful, the board and investors continued to seek opportunities. Members realized that they had done everything they could, and with different timing or if more money could have been raised faster, the project might have succeeded. Reflecting on his experience, a member shared,

> "I've worked on economic development for years and I worked hard in Lamoni. I have always said that if we work hard, one in ten at best will land. But if you don't do the ten you'll never find the one. […] It amazed me how well we worked together because of the diverse nature of our group. You had three dyed in the wool Democrats and three Republicans. You had a surgeon and a doctor working with a farmer and a banker, county supervisors in two different counties, and an atheist and religious guys and some in between. It was just about as diverse as you got and it amazed me that we survived basically still friends at the end."

Many in the county spoke about the effort to build a biodiesel plant

locally with a mix of resignation and pride, the community didn't succeed but it had tried hard.

6. Discussion

Regarding our first question—how do rural social networks leverage resources for local development?—we found projects were more likely to be initiated through bonded social capital in six of the eight cases studied. Our findings challenge the simplistic notion that less prosperous places had fewer active networks or fewer individuals with bridging ties. Instead, we observed that individuals use a variety of ties and created networks while completing an economic development project. Groups often sought ties that provided access to financial capital and technical expertise. The use of bridging or bonding social ties appears to depend on the quantity and distribution of financial resources in the group's primary networks.

In answer to our second question—how do social capital networks vary across communities?—we observed that prosperous places relied on bonding ties more than less prosperous places, as these internal ties often provided the necessary resources. The experience in Manning illustrates how the relative wealth of the community enabled the group to solicit funds through personal networks within the community. Economic development focused networks varied widely among the eight communities. Less prosperous and smaller communities had fewer residents who had surplus capital, and these communities often found it harder to find experienced individuals with the necessary skills to complete a project. In contrast, prosperous communities had a larger pool of potential ties that could be utilized during a development project. This research provides insights into the complex interplay between social networks, financial resources, and community prosperity in rural development contexts.

6.1. Insights into the relationship between bridging ties and prosperity

Assessing whether a community relies more on bridging rather than bonding ties proved challenging in these small communities. Social relationships are complex and cannot be easily divided into binary categories. There are many sources of ties between individuals, and the history of some ties reached back several generations. The iniating networks used existing ties or sought new ties especially for political support and financial resources. Furthermore, the relationships between members in economic development organizations could not be easily classified as bridging or bonding. The core members in these organizations are usually associated through bonding social ties, but organizations also institutionalize bridging ties through their membership structures with ex-officio positions. Furthermore, most projects required actors to use both bridging and bonding ties. There was not a clear relationship between the use of bonding and bridging ties and the level of prosperity. Analyzing the type of tie sought, the scope of the project, and a network's access to financial capital was more insightful.

6.2. The role of financial wealth in perpetuating prosperity

Our analysis focused on identifying the influence of aggregate community wealth and the distribution of community wealth on the use of social capital during rural economic development project implementation. We found that the gap between the resources a project required and the resources the primary network possessed affected that group's efforts to use bridging or bonding ties. Community members will seek financial capital from the most efficient sources first, using people they know and experience from previous projects. Less prosperous places had a limited ability to use ties within the community as there were relatively fewer available resources within the community. The prosperous case study counties had more locally owned industries with surplus capital and project expertise to donate.

Furthermore, the local municipalities in less prosperous places can offer fewer resources to invest in new projects. This meant that less prosperous places were more reliant on ties outside the community. As these ties are often bridging ties, and bridging ties are harder to form and maintain, this might contribute to a social capital explanation of why there is lower prosperity in lower resource areas.

All but one of the eight cases found the resources to complete the project. There were differences in the level of experience and paid time dedicated towards economic development. Less prosperous places often relied on volunteers and accessed more ties during a project which increased the need to learn on the job and increased the likelihood that ties could be strained and lost. This relationship was not universal. Centerville and Lamoni, less prosperous places, had long-standing social networks that were addressing development. At the same time, all four less prosperous places were actively engaged in trying to build new networks to address other community issues. Not all projects in the prosperous counties were financed internally, however, initial groups sought more resources internally than initial groups working in less prosperous places. To the extent that building bridging ties is harder than maintaining bonding ties, people embedded in social networks that address economic development in places with fewer financial resources need a different set of skills.

We observed that the total financial wealth and the ability to accumulate capital within the community affected civic engagement efforts. More research should be done to further understand how financial resources and their distribution affect the depth of social networks, the need to use or build bridging ties, and the scope of social capital's ability in a community.

7. Conclusion

This study explores how social capital and financial capital influence public economic development projects in rural counties with varying socioeconomic outcomes. Our focus on rural development examines how social capital influences innovation, collaboration, and network activation at a community scale, complementing similar studies conducted at the individual scale (McKitterick et al., 2016; Arnott et al., 2021). While few researchers have explicitly addressed how financial resources impact network structure or function, some insights have emerged. For instance, Cofre et al. (2019) found that farmers with larger land holdings built more extensive networks but engaged banks less. Conversely, Teilmann (2012) explored the inverse relationship, finding no evidence that larger budget projects led to higher social capital accumulation. Our study set out to explore this relationship directly. Contrary to previous studies suggesting that prosperous places should have more bridging ties than bonding ties (Safford, 2009; Duncan, 1999), we uncover a more nuanced distinction: the primary difference between the social networks in these communities was the number of actors who had personal wealth or managed other sources of community wealth.

We find that the amount of financial capital within a network affected the types of ties actors had and sought during a project. Less financially prosperous communities, with fewer locally owned businesses or individuals with surplus capital, more frequently formed new bridging ties to access financial capital. This aligns with previous findings on the importance of social networks and ties for accessing resources in rural communities (Besser, 2009; Gittell and Vidal, 1998). While Tiwari et al. (2019) found that rural residents can effectively use social media to build and maintain bridging social capital, our study—conducted the year Facebook went public— shows rural residents building ties through traditional means.

Trust emerged as a crucial component of rural stakeholder networks, particularly given the competitive nature of economic development (Black and Hoyt, 1989). The critical role of trust in economic development networks has been highlighted in prior research (Taylor et al., 2023). Interestingly, one low-prosperity community expressed reluctance to expand their network too far, fearing the loss of potential

employers, suggesting potential constraints from dark social capital (King et al., 2019). These findings have broader implications for understanding local action in economic development, highlighting the need to consider both the benefits and potential drawbacks of social capital in rural development contexts.

Future research should disentangle how economic shocks affect social networks and ties and how different social assets recover after an economic shock. The importance of available financial capital to understand the relative success or presence of social capital networks underscores the need to study how financial reserves in various community sectors become available for development. By understanding these complex interactions between social and financial capital, rural communities can leverage their unique strengths to foster resilience and drive sustainable economic growth in an ever-changing landscape.

CRediT authorship contribution statement

Mallory L. Rahe: Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization, Data curation, Visualization, Writing – review & editing. **Andrew J. Van Leuven:** Writing – review & editing. **Trey Malone:** Writing – review & editing, Conceptualization, Writing – original draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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