ABSTRACT

Trading Favors: Local Politics and Development in Brazil

Alicia Dailey Cooperman

Why do some communities have access to essential services, such as water or health care, and neighboring communities do not? How do citizens influence the distribution of public services? This dissertation presents a theory of “trading favors” in which I argue that communities can coordinate and trade their collective votes for preferential access to public services. This long-term relationship with politicians is a form of local distributive politics, and I highlight that neighborhood associations provide a platform for voters to organize and increase their bargaining power towards politicians. I argue that 1) high community activity and 2) strong, unified leadership can enable group members to coordinate their votes before an election and get the attention of politicians after the election to improve their access to public services. I focus on variation in water access: water scarcity is a growing global concern, and access to water is often manipulated as a political tool.

During 18 months of fieldwork, I collected extensive qualitative and quantitative evidence from the state of Ceará in Northeast Brazil. I include a historical discussion of the origins of community organizing and introduce a typology of community organizing. I illustrate the theoretical mechanisms through case studies of neighboring communities that draw on 104 qualitative interviews with rural residents, local leaders, state bureaucrats, and academic experts. I test my main hypotheses through statistical analysis of an original household survey with 1,990 respondents from 120 rural communities merged with precinct-level electoral data. I also analyze long-term voting patterns at over 15,000 electoral precincts across Ceará in five municipal elections.

I find that water access is most reliable and secure in communities with high community activity, strong social ties, and constant leadership. I find evidence for my main mechanism: organized
communities are more likely to concentrate their votes, and bloc voting improves water access. Communities are very consistent in their bloc voting behavior over time: the same places continue to concentrate their votes, and the same places continue to disperse their votes. I also find evidence that many communities switch allegiance across elections, which indicates that communities are credible in their threats to switch their electoral support if they do not get the services they need.

My findings shed light on the important but poorly understood influence of collective action on local politics and development. The distributive politics literature tends to focus on decision-making by parties and politicians. My results demonstrate the agency of voters in organizing collectively to select and influence candidates that make distributive appeals, especially through neighborhood associations. I develop our understanding of local leaders, who often serve as development/vote brokers and intermediate access to the state, and I provide evidence that poor citizens bargain with their votes and can use bloc voting as a grassroots strategy for improving public service access.
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List of Acronyms

CEB   Comunidade Ecclesiástica de Base - Christian Base Community
CDD   community-driven development
CNPJ  Cadastro Nacional de Pessoas Jurídicas - National Register of Legal Entities
FAO   Food and Agriculture Organization
INCRA Instituto Nacional de Colonização e Reforma Agrária - National Institute for Colonization and Agrarian Reform
MST   Movimento dos Trabalhadores Rurais Sem Terra - Landless Workers’ Movement
NGO   non-governmental organization
PSJ   Projeto São José - Saint Joseph Project
PT    Partido dos Trabalhadores - Workers’ Party
SISAR Sistema de Saneamento Rural - System for Rural Sanitation
TRE   Tribunal Regional Eleitoral - Regional Electoral Tribunal
TSE   Tribunal Superior Eleitoral - Superior Electoral Tribunal
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Dedication

For Pat.
Chapter 1

Introduction

Politics are the activities and debates about governance, and policies are the course of action.\textsuperscript{1} In Portuguese, the words for “politics” and “policy” are the same: \textit{política}.

I began exploring the politics of water access in Brazil during the summer of 2014. When I described my research interest, friends in upper class areas of Rio de Janeiro or São Paulo heard “water policy” while friends in middle or lower class areas of drought-prone Northeast Brazil heard “water politics.” Their follow-up questions and comments branched out in completely different ways, which was confusing at first but ultimately made a lot of sense.

In most developed countries and in parts of developing ones, water provision is based on abstract, distant decisions by technocrats. Citizens do not question whether there will be water in their taps. They do not consider or participate in the activities that led to that decision. Water access is a policy.

\textsuperscript{1}Oxford Dictionary defines “politics” as “the activities associated with the governance of a country or area, especially the debate between parties having power.” It defines “policy” as “a course or principle of action adopted or proposed by an organization or individual.”
The reality changes drastically once you enter lower class urban neighborhoods or travel to rural areas. Access to water and other public services may depend on whom you voted for, where local politicians are seeking support, and how organized the community is to fight to get a water pipe fixed or a well installed. In drought-prone areas, where more than half of the world’s poor live (Mearns and Norton, 2010), these social and political features contribute to exploitation by “water mafias” and vulnerability to vote-buying and climate shocks (Herrera, 2017; Bobonis et al., 2017; Björkman, 2015). Water access requires active participation by citizens in their local political environment. Water access is politics.2

How do water politics operate? Rural residents, academics, and policymakers in Northeast Brazil almost uniformly agreed in interviews that access to water and other public services is political. Still, it was hard to pin down exactly how this worked. Why were some residents worried every day about where to get water tomorrow, while those in a neighboring community did not have any issues? Some residents blamed corrupt politicians, others blamed lazy local leaders, and still others blamed themselves and their neighbors for not speaking up. The phrase “trading favors” came up frequently. What did it mean to trade favors? What favors were being traded? Who was involved? Did it work?

I spent many days on dirt roads on the back of a moto-taxi, deep in the heart of rural Northeast Brazil, talking to local residents about water access, health care, local politics, and community relationships. Residents welcomed me onto their porches and shared their stories. I began semi-structured interviews with specific questions about their water sources and other public services, and respondents always brought up local politics before I could.

I was struck by the variation in their stories, even between small, rural communities that were five kilometers apart. Some described a local “drought industry” and pay-offs between water truck

2In these environments, local political relationships factor into both how policies are decided (procedures for how water resources are allocated) and how policies are implemented.
drivers and politicians; a woman with a baby on her lap told me that her community often lacked water, and the emergency water truck once delivered water so full of chemicals that her hair fell out when she showered with it. In the next community down the road, others said that the water pump on the well sometimes breaks, but they are notified promptly, and their association president works with a city council member to get it fixed within a few days.

Colleagues who conduct research in rural Peru, India, or Mexico have described similar dynamics in the communities where they work. However, the existing literature cannot explain why public service access varies so dramatically between neighborhoods. Basic public services tend to be under-provided in rural areas of developing countries throughout the world, and their allocation is often politically motivated. I believe that by better understanding how residents get involved in local politics, we can better understand how public services are provided and take actions to improve the equity and efficiency of their distribution.

My dissertation asks: how do citizens influence the distribution of public services? I argue that groups of voters organize and trade their collective votes for preferential access to public services. This long-term relationship with politicians is a form of local distributive politics that I call “trading favors.”

The distributive politics literature tends to focus on decision-making by parties and politicians. It often overlooks the agency of voters in organizing collectively to select and influence candidates that make distributive appeals, especially through neighborhood associations, civil society organizations, and interest groups.

In brief, I argue that local community associations provide a platform for voters to increase their bargaining power towards politicians. I highlight the ways that high community activity and strong,  

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3I borrow the term from the commonly used phrase of “troca de favores” in Brazil that refers to similar dynamics. For example, Brazilian political scientist Motta (2007, p. 90) writes when referring to the personalistic nature of Brazilian politics, “The use of public resources is a basic mechanism for the preservation of power: public resources are used less to serve the real demands and needs of the community and more for [troca de favores] and the private interests of the group. Since the loyalty to group members is stronger than to the public institution, these groups are able to maintain their coalition at whatever cost, including higher government spending.” (Translation by author.)
unified leadership can enable group members to coordinate their votes before an election and get the attention of politicians after the election to improve their access to public services. During 18 months of fieldwork, I collected extensive qualitative and quantitative evidence from the state of Ceará in Northeast Brazil. I illustrate the theoretical mechanisms of my theory through case studies of neighboring communities and 104 interviews with rural residents, local leaders, state bureaucrats, and academic experts. I test my main hypotheses through statistical analysis of an original household survey with 1,990 respondents from 120 rural communities merged with precinct-level electoral data, and I analyze long-term voting patterns at over 15,000 electoral precincts across Ceará in five municipal elections.

1.1 Explaining Public Service Provision

I first consider the broader question that motivates this project: why do some communities have access to basic, essential services, such as water or health care, and neighboring communities do not?

There is a large literature on public goods provision, and most explanations focus on structural conditions, institutional variation, socio-economic factors, ethnic politics, distributive politics, and social organization. These theories do a good job of explaining variation across national units and even sub-national units of states or municipalities.

However, these theories cannot explain variation across villages or communities within municipalities. Communities within the same municipality share similar distances to the state capital, climate and geologic conditions, mayoral politics, and exposure to municipal income inequality.

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4Lieberman (2015) has a broad literature review and explains variation in service delivery based on type of political regime, ethnic diversity, institutions, and international factors. These arguments are most applicable at the national level.
They are likely to be more homogeneous, both across communities in the same municipality and within a community, in terms of ethnicity, income, religion, and resource endowments.

Variation between neighborhoods, not municipalities, often matters most for any given household. Residents of rural communities depend on politicians, association leaders, and other local elites for essential local public and club goods. Providing local water resources entails digging a well, fixing the pump for a small water system, or facilitating access to a water source on private land. Other critical, and often scarce, public services include electricity, health care, roads, and transportation.

Villages that are five kilometers apart may be similar across most dimensions but have drastically different access to water resources and health care due to a broken well pump or medication shortages. However, variation in public goods provision at the sub-municipal level is the least understood (Fox, 2007). A municipality has limited resources, and the distribution of these resources affects citizens’ day-to-day life in a way that national or even state-level political dynamics do not. While the overarching structural conditions and socio-economic factors tend to be fairly constant within municipalities, there is wide variation in access to and quality of public services.\footnote{Post (2018) provides a comprehensive review of recent research about urban politics, including variation in local public goods and service delivery between and within cities. She highlights two groups of scholarship: the first focused on ethnic diversity, and the second focused on electoral and institutional factors such as political competition, participation, and knowledge.}

\subsection{Civil Society and Politics}

What explains local variation in access to essential public services? Many scholars correctly point to the importance of civil society in political life (Tocqueville, 2010), and the collective action and social organization literatures suggest that communities with high participation in civil society organizations and strong feelings of unity and reciprocity are more likely to advocate for better
public services or are more likely to independently provide them (Putnam, Leonardi, and Nanetti, 1993). Strong leadership and informal accountability mechanisms are important for coordinating groups (Tsai, 2007; Olson, 1965), and community institutions can enable groups to make collective choices and monitor and sanction members, among other features (Ostrom, 1990). However, we see many active, well-organized villages with very different public service access.

Others emphasize distributive politics, and political scientists argue that politicians’ promises of narrowly targeted goods are more credible than promises to provide broad public services (Keefer, 2007). Scholars have focused on clientelistic targeting based on numerous individual factors, such as whether voters are core party members or swing voters (Diaz-Cayeros, Estévez, and Magaloni, 2016; Dixit and Londregan, 1996), whether they are rich or poor (Luna, 2014), whether they belong to a particular ethnic or religious group (Corstange, 2016; Cammett and MacLean, 2014; Chandra, 2004), and whether they declared support for a specific candidate (Nichter and Nunnari, 2017).

Brokers play an important role in intermediating the relationship between voters and politicians (Stokes et al., 2013). Recent work focuses on the role of local group leaders as brokers (Auerbach, 2016; Szwarcberg, 2015; Holland and Palmer-Rubin, 2015; Baldwin, 2015; Thachil, 2014; Zarazaga, 2014; Koter, 2013). However, we see many villages with similar broker relationships or that voted for the same winning or losing candidates but still have very different public service access.

In general, the distributive politics literature focuses on politicians and brokers, and voters are seen as passive recipients in a coercive relationship. Scholars are pushing back on this notion, and Auyero (2014) argues that there is a definitive lack of research on the “diffuse, long-term reciprocity based on the embedding of machine operators... in poor people’s everyday lives” (p.118).

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6See Mares and Young (2016) and Hicken (2011) for excellent overviews of the literature.
Recent studies focus on the agency of voters and find that citizens make strategic decisions about broker selection (Auerbach and Thachil, 2018; Zarazaga, 2013) and choose if or how to declare their support (Nichter and Nunnari, 2017). Citizens help patrons to stay in power in order to maintain access to benefits (Oliveros, 2016), and they shift their allegiances when politicians do not fulfill clientelistic requests (Nichter and Peress, 2017).

Most studies of local collective action and public goods ignore the political interests and relationships between community members and local elites (Agrawal and Gibson, 1999). Similarly, most studies of distributive politics and public goods tend to focus on the individual, ignoring her relationships with other voters and elites, and overlook the role that collective action and group dynamics play in electoral decision-making.

I argue that a combination of the theories of distributive politics and collective action can better explain variation in public service access. I highlight that poor citizens can often bargain with votes, and citizens can organize collectively to increase their bargaining power. Specifically, neighborhood or community associations provide a critical link between groups of voters and politicians. I further our understanding of public goods provision and development by focusing on the role of collective action in distributive politics and on the group dynamics that affect individual political behavior.

Recent studies in political science document the relationship between neighborhood associations and politicians, for example in the large cities of Buenos Aires, Argentina (Szwarcberg, 2015; Zarazaga, 2014; Auyero, Lapecna, and Poma, 2009; Garay, 2007); Belo Horizonte (Montambeault, 2015), Fortaleza (Lopes, 2005; Braga and Barreira, 1991), Porto Alegre (Abers, 1998), Recife (Montambeault, 2015), Rio de Janeiro (Perlman, 1979; Gay, 1990; Oliveire and Carvalho, 1994), and the state of Bahia, Brazil (Teixeira, 2008); Bogotá, Colombia (Holland and Palmer-Rubin, 2015); Quito, Ecuador (Burgwal et al., 1995); Jaipur and Bhopal, India (Auerbach, 2017);
1.1. Explaining Public Service Provision

Mexico City (Tosoni, 2007), Oaxaca (Holzner, 2004), and Guadalajara, Mexico (Shefner, 2001); and Montevideo, Uruguay (Canel, 2012).

While these and other works illustrate the relationship between associational life and electoral politics, they rarely study systematically how variation in associational life relates to variation in political behavior or public service outcomes.\(^7\)

Recent literature in political science focuses on dynamics in urban areas, and characterizations of rural areas are often simplified and undertheorized. Rural areas are seen as having small, tight-knit communities with dense social networks where family or ethnic groups know each other and work together for the common good. Though they face collective action problems, familial/ethnic ties or powerful traditional leaders are seen as reducing information challenges, which enables groups to aggregate their preferences and monitor and enforce collective behavior.

The focus on urban areas tends to overlook the large variation in socio-political relationships among rural communities. Social relationships and network structures vary widely, even among communities within ten or fifteen kilometers of each other, and these neighborhood characteristics impact individual behavior (Entwisle et al., 2007).

In addition, while many of the “trading favors” mechanisms occur in urban areas, they may be challenging to distinguish from other explanations.\(^8\) Urban group divisions are blurry, and their characteristics are challenging to measure. The relationship between group characteristics, voting, and service provision is more difficult to identify in urban settings. Therefore, rural communities

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\(^7\)Exceptions are Fox (2007), who describes in detail the historical, social, and political relationship between rural community organizations and politicians in Mexico; Collier and Handlin (2009), who examine variation in organizational resources, ideational cohesion, and the nature of demands by unions and associations in Latin America; Grindle (2007), who studies variation in the impacts of decentralization in Mexico by analyzing variation in political competition, state entrepreneurship, public sector modernization, and civil society activism; and Kruks-Wisner (2018), who studies claim-making by rural communities in India.

\(^8\)Auerbach et al. (2018) specifically focus on the complexity of urban areas and the challenges of analyzing overlapping informal institutions, complex social relationships, and complicated bureaucracies.
provide an optimal environment in which to precisely measure the nature of community relationships and their impact on voting behavior and public service provision.

1.1.2 Communities and Their Leaders

We know from the extensive literature on social organizations that groups struggle to aggregate preferences and coordinate behaviors (Olson, 1965). How do members overcome collective action problems? Which groups are most effective at coordinating their actions?

I focus on a group that I call a community, and I use a socio-geographic definition. In my theory, communities are groups of people who live in the same geographic area, such as a neighborhood or a village, and self-identify as residents of that area.9

Civil society organizations, especially neighborhood, residents, or community associations, provide a focal point for civic engagement and collective action within the community, and they are often the base of local social networks. These associations and other local voluntary organizations may participate in both social and political life, and many assist in mobilizing voters, sharing information about candidates, and endorsing candidates (Holland and Palmer-Rubin, 2015; Gay, 1990; Abers, 2000; Smith, 2016; Green, Gerber, and Nickerson, 2003).

Community associations are found throughout the world. In Latin America, a community or neighborhood association is often known as associação comunitária or associação de moradores in Brazil, junta de acción comunal in Colombia, sociedad vecinal or sociedad de fomento in Argentina, junta de vecinos in Chile, and asociación de vecinos in Peru and Venezuela (Collier and Handlin, 2009). Similar associations exist in China, Cuba, India, Indonesia, Japan, Mexico, South Korea, and Taiwan, the United Kingdom, and the United States, among others (Auerbach, 2017; Read, 2012; Taylor, 2011).

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9See Arneil (2006) and Somerville (2016) for broader discussions of the concept of community.
1.1. Explaining Public Service Provision

Rural communities often have community leaders who are local residents who have taken an active role and are elected through the local community associations. They act as local opinion leaders, and community members respect them and seek them out for advice on social and political matters. The leaders aggregate the preferences of community members into requests for collective benefits, and they may also be pursuing individual goals and benefiting privately from the position.\textsuperscript{10}

Community leaders often serve as “development brokers” and are usually the formal or informal gatekeeper for obtaining local public services and development projects from the government. Koter (2013) writes about the role of local leaders as intermediaries in Senegal and Benin, “The strength of local leaders rests on their degree of authority and provision of material assistance... These individuals often act as social mediators, control access to resources, and provide valuable goods and services. In sum, they provide essential safety nets to their dependents in an environment of poverty and unmet needs. Admittedly, the relationship between local leaders and their followers is complex, in that it can be based both on reciprocity and on some degree of exploitation. Voters can trust and rely on their leaders but also feel trapped in their subordinate position.”

Krishna (2011) describes similar local intermediaries in Rajasthan, India who assist villagers in accessing state services such as managing land registration, securing bank loans, replacing bad school teachers, and securing employment in public construction projects.

The same leaders often serve as “vote brokers” and negotiate with local politicians who seek community members’ votes. For example, Perlman (1979) explains that Residents’ Association

\textsuperscript{10}Murillo (2001) makes a similar argument that union leaders play an important role in aggregating union members’ preferences and representing their interests to the government, and she explains that union leaders may have different preferences and objectives than their members.
leaders in slums in Rio de Janeiro, Brazil, participated in electoral politics by serving as vote brokers in the community, signing petitions, protesting, and requesting services from government.¹¹

Community associations, their members, and their leaders play critical roles in local social and political relationships. Most scholarships on public goods provision and distribution of public services has focused on politicians. Of course, politicians make the final decision about who gets what. Still, politicians are responding to not just individual voter characteristics, as has been widely documented in the literature about clientelism, or large group characteristics, as documented in the literature about pork politics. I add that politicians are also responding to small groups of voters that aggregate their preferences by participating in community associations and electing association leaders to represent their interests. I elaborate below.

1.2 The Argument: Trading Favors

How do citizens influence the distribution of public services? In my theory of “trading favors,” communities organize and trade their votes for access to services. It is a long-term cycle spanning multiple elections and involves repeated interactions between community members, leaders, and politicians, as shown in Figure 1.1. I argue that groups with high community activity and strong, unified leadership are better able to coordinate their votes before elections and pressure politicians between elections, since politicians monitor their aggregate votes at polling stations.

The first step of the process occurs before elections, when community groups decide if and how to coordinate their votes in a specific candidate. The goal of coordinated voting is two-fold. First, the community can help the candidate win this election and demonstrate its willingness and ability

¹¹For descriptions of Brazilian community association leaders as vote brokers, see also Montambeault (2015); Medeiros (2012); Perlman (2010); Lopes (2005); and Gay (1994).
1.2. The Argument: Trading Favors

Figure 1.1: Trading Favors

to give votes to one specific person. Second, the community can signal its ability to coordinate more generally, protest, and pressure politicians between elections.

What does this look like? Often, association leaders will invite candidates to association meetings to present their ideas, and leaders identify and endorse a specific candidate that is most likely to help the community (and possibly provide private benefits to the leader). Members are more likely to follow the endorsement of strong leaders, as opposed to weak ones. If there are multiple, divided strong leaders endorsing different candidates, the community will be unable to coordinate as a whole; since votes are monitored at the aggregate community level, this would reduce the community’s bargaining power vis-à-vis politicians.

Members are more likely to discuss political choices and follow through on the collective vote if they are in active communities. For example, voters are more likely to vote for the group’s preferred candidate, as opposed to their own individual preference, if they experience higher trust and reciprocity with their fellow community members.

The second step of the process occurs after the elections, when groups must pressure politicians to follow through on campaign promises and government responsibilities. Communities who
created electoral ties through bloc voting will have more bargaining power, but all communities can use tools such as protest and personal appeals to get the attention of politicians and pressure them to act.

Members are more likely to protest if they are in organized communities; this usually involves traveling to the city hall or even state capital and complaining on the local radio. Group leaders or other individuals in the group may have personal connections to political or economic elites, both in the municipality and in other levels of government. They can use these connections to get the attention of politicians as well.

As the next election approaches, the community evaluates politicians’ behavior and promises, and community members decide if and how to coordinate their votes. The cycle continues.

**Variation in Community Organizing**

Coordination is challenging, and not all community groups are able or choose to participate in trading favors. What explains this variation?

Through qualitative interviews in rural communities in Northeast Brazil, I identified that communities varied most on two dimensions: 1) community activity and 2) leadership strength and unity. Community activity and leadership vary widely, even among communities within ten or fifteen kilometers of each other. Each characteristic affects a group’s ability to coordinate, share information, and take specific actions to increase public service provision, which I summarize in Figure 1.2 and explain in detail in Chapter 2.

Community activity occurs where there is high participation by group members in informal and associational activities. Active communities have stronger social trust and reciprocity among members, and they are more likely to share information about both political topics and broader
1.2. The Argument: Trading Favors

social/economic issues. Active communities are more likely to mobilize for a candidate, coordinate their votes, and protest after elections to hold politicians accountable.

Leadership strength occurs where an opinion leader competes for the leadership position and is repeatedly elected, and unity occurs where multiple leaders work together to pursue collective goals. Strong, unified leaders are more likely to mobilize group members and have deeper knowledge of municipal politics and bureaucratic practices. They are more likely to serve as political brokers and facilitate access to public services and development projects for the community.

Figure 1.2: Variation Across Communities

I consider variation in group member and leadership characteristics to be fixed within a short to medium time period. While these characteristics may change over time and interact with one another, these dynamics occur slowly over long periods of time. I describe the origins of these characteristics in Chapter 3, different types of community organizing in Chapter 4, and how change between types can occur in my specific case in Chapter 4.

Groups and Elections

I argue that groups of voters can and do use their collective power to influence candidates and politicians. Communities tend to be poor and isolated, with clusters of 20-100 houses that may be an hour or more down a dirt road surrounded by vast tracts of uncultivated land.
CHAPTER 1. INTRODUCTION

Groups of voters can show their allegiance to candidates in a number of ways. One way to demonstrate allegiance is through visible signals of endorsing candidates; this includes displaying flags or posters on houses or community centers or wearing campaign hats or t-shirts. However, these forms of endorsement require brokers and candidates to see or share information about who is endorsing whom and where.

A more public way for groups of voters to assert their collective power and create electoral ties is through bloc voting. Monitoring of aggregate votes is especially prevalent in rural communities or villages that are separated by large distances, and rural polling stations often have just 100-200 registered voters. Politicians and local leaders can and do monitor the aggregate votes of small, identifiable groups, and polling station election results are made public online, printed and displayed in public areas, and often disseminated over the radio. This makes it possible for almost anyone—citizens, leaders, and candidates—to access information about recent and historical voting behavior. Voters are aware that politicians and local leaders monitor their votes, and they often know the precinct vote totals from previous elections.

This study draws on and contributes to a growing literature on the role of small local groups, sometimes known as “vote banks,” that engage in local-level bloc voting (Auerbach, 2017; Björkman, 2014). Scholars acknowledge that monitoring aggregate voting behavior, particularly at the precinct level, is a way for politicians to monitor brokers’ performance (Stokes et al., 2013, p. 94, 184) and to reward or punish voters (Robinson and Verdier, 2013, p. 261).13

12Nichter and Nunnari (2017) find that citizens declare support for candidates through these mechanisms in order to gain access to benefits after the election.

13For example, Koter (2013) describes the public display of polling station results in Senegal, where there tends to be one polling station per village with approx. 400-800 voters. Rueda (2017) finds that smaller polling station size in Colombia is associated with more vote buying due to brokers’ ability to monitor aggregate behavior and reward voters with future payments, not due to their ability to monitor and sanction individuals.
1.2. The Argument: Trading Favors

Bloc voting can enhance the group’s access to public services, not just by creating an electoral tie, but through a coordination and signaling mechanism. In this mechanism, the community demonstrates that it is more likely to both coordinate its vote in the future and also to mobilize after elections and demand services. Even if Politician A received the community’s bloc vote and has a specific electoral tie to that community, Politician B is also likely to respond to demands in order to seek votes in that community in the future. Both Politician A and B are aware that the community is able to coordinate and mobilize its members for collective action, so both politicians are more likely to prioritize the community to avoid future public protests.

1.2.1 Pork Politics and Clientelism

Is my theory of trading favors simply a form of clientelism at the group-level, also known as “collective clientelism” or “semi-clientelism” (Shefner, 2001; Burgwal et al., 1995; Gay, 2006; Fox, 1994)?

There are almost as many definitions of clientelism as there are studies about it. Some consider clientelism and vote-buying to be one and the same, while others argue that they are fundamentally different. Some limit clientelism to a one-off quid-pro-quo exchange of a vote for a good, while others extend it to include any reciprocal, exchange-based relationships between a

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14 Gottlieb and Larreguy (2018) find that politicians use bloc voting at the precinct level as a signal of a community’s coordinating capacity for future bloc voting: stronger bloc voting is associated with higher coordination.

15 Hilgers (2011) does an excellent job of unpacking the numerous definitions of clientelism. She writes, “In addition to being an exchange in which individuals maximize their interests, clientelism involves longevity, diffuseness, face-to-face contact, and inequality. That is, it is a lasting personal relationship between individuals of unequal sociopolitical status. Establishing these characteristics facilitates differentiation from concepts such as vote-buying and corruption and determines clientelism’s analytical position at the microsociological level.”
more powerful person and a less powerful person. Some limit clientelism to the individual, while others extend the client to include groups.\textsuperscript{16}

Kitschelt and Wilkinson (2007) differentiate between clientelistic, particularistic, and programmatic exchanges. Clientelistic exchanges involve benefits that are contingent on vote choice by individuals or identifiable small groups. Particularistic exchanges involve benefits that may be targeted club goods but are \textit{not} contingent on vote choice, and programmatic exchanges involve benefits that are distributed through formal, public criteria. They argue, “When it comes to club goods, politicians can try to organize linkages to their constituencies based either on programmatic or clientelistic relations” (p. 11-12). They may interpret my theory as describing a clientelistic relationship between community groups and politicians, since communities are trading their group votes for club goods, but I see the situation as more complicated than that.

In a study of the relationship between community associations and politicians in Rio de Janeiro, Gay (2006) describes the complexity of characterizing these relationships as clientelistic or not. He writes,

\begin{quote}
In this instance, it was less a case of a politician saying ‘Vote for me and you’ll get this or that,’ than of him saying, ‘If I do this or that, will you vote for me – please?’ I am not suggesting that this is a process of negotiation between equals or that the many hierarchies and inequalities upon which clientelism is based have been eliminated. Nonetheless, the reconfiguration of the clientelistic relationship entails, to some extent, a leveling of the political playing field. Community leaders understand the advantages derived from that shift, as illustrated by the favorite saying of the president of Vila
\end{quote}

\textsuperscript{16}Brun and Diamond (2014) see clientelism as “a set of asymmetric dyadic relationships that consists of the exchange of private and occasionally access to club goods and/or political influence...” and stress that a dyadic relationship with club goods exists when a group is one pair of the dyad (p. 5). They cite examples of club goods being distributed through “a clientelistic filter” such as disaster relief, health care and medicines for a specific slum neighborhood, or school kits for poor children.
1.2. The Argument: Trading Favors

Brasil [a neighborhood in Rio]: ‘Politicians are all thieves, but I’m a better thief than any of them!’ (p. 200)

Similarly, Abers (2000, p. 158) writes that some neighborhoods in Porto Alegre had associations that were more “clientelistic” and were co-opted by politicians into vertical, unequal relationships with local politicians. Other neighborhoods in the same city had associations that were more “combative” and empowered through coalitions of associations to promote egalitarianism, solidarity, and programmatic unconditional public goods provision.\(^{17}\)

In a study of city council members in the Brazilian state of Minas Gerais, Lopez and Almeida (2017) differentiate between three types of local politicians (specifically city council members): “legislators” (legislador) that focus on broader governance issues and programmatic distribution, “fundraisers” or “suppliers” (captador) that provide collective resources to small groups within the municipality, and “assistentialist” or “welfare based” (assistencialista) that provide individual benefits.\(^ {18}\) They argue that “legislators” use more programmatic strategies towards citizens while “assistentialists” use more clientelistic strategies, and “fundraisers” fall somewhere in between. They find that clientelistic relationships between city council members and citizens are more prevalent in municipalities with smaller populations, lower electoral volatility,\(^ {19}\) and higher political competition.\(^ {20}\) Others use terms such as “policy-institutional,” “community-based,” and “personal” for the same three types, respectively (Joffre Neto, 2003). In my interviews, I also

\(^ {17}\)Fox (1996) also talks about the ability of local civil society organizations to work together to create regional organizations in his study of Mexican food councils, a process that he calls “scaling up.”

\(^ {18}\)Translation by author. I note that these terms are difficult to translate and have particular connotations in the original Portuguese that are lost in translation.

\(^ {19}\)Electoral volatility is defined as candidates receive very different vote shares across subsequent elections, which indicates more switching by voters. A value of 0 means the same candidates ran in both elections and received the same number of votes in each election; a value of 1 means that none of the candidates from the first election runs in the second election.

\(^ {20}\)Higher political competition in this case means that the number of seats for city council was reduced by the Tribunal Superior Eleitoral - Superior Electoral Tribunal (TSE) between elections.
found that the trading favors relationship fell somewhere on a spectrum between programmatic policy, local pork politics, and coercive clientelism.

Are community leaders no different from vote brokers? Stokes et al. (2013) argue that brokers intermediate between voters and parties or candidates; they recruit and monitor clients and are embedded in local networks. Many community leaders do act as vote brokers in this way (Gay, 1994). However, most leaders serve many more important functions in the community than being a broker during election times. They are opinion-leaders on numerous community issues, facilitate discussions of community needs, and organize community members to act on behalf of the group (Björkman, 2014).

As such, I choose not to frame my theory in terms of clientelism and vote brokers. Holland and Palmer-Rubin (2015) provide an excellent description of different types of brokers that emerge from different types of associations/organizations, and the community association leaders in my theory are closest to their description of organizational brokers. However, not all locally-based organizations have leaders who act as brokers, and the relationships between organizational brokers, members, and local politicians take many different forms. I seek to understand what those forms are and what impact they have on public service access.

I believe that the dynamic of trading favors tends towards clientelism in some circumstances, while in others it reflects a long-term reciprocal relationship that is a different means of holding

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21For example, leaders ask people in the community to pitch in time or money to build a community center or dig a shallow well for collective use. They may ask members to donate money to support a community member in need, and they may travel long distances to seek out resources for the community.

22Organizational brokers are those in weak party systems with embeddedness in dense base-level organizations: “Organizational brokers have the ability to negotiate with politicians who represent different political parties, ‘shopping’ for the best offer from election to election. Unlike independent or party brokers, however, organizational brokers also represent social interests in the form of their organizations’ collective interests, which can lead them to support politicians who deliver the types of benefits that the group’s members prefer” (Holland and Palmer-Rubin, 2015, p. 1201).
1.2. The Argument: Trading Favors

politicians accountable.\textsuperscript{23} In my experience, many communities did follow the more coercive, contingent relationship that typically characterizes clientelism or vote-buying, and leaders in these areas do little more than act as vote brokers. This is consistent with examples in the literature pointing to “collective clientelism,” where association leaders act as brokers to exchange votes for club goods.\textsuperscript{24}

However, I found that other communities followed a logic of democratic accountability, albeit a sometimes particularistic one. These communities use bloc voting to signal their ability to coordinate and mobilize. Politicians are not providing benefits contingent on the community having voted for that politician.\textsuperscript{25} Instead, politicians target club goods or local public goods to coordinated communities in order to preemptively avoid public protest. Politicians similarly are more likely to respond to demands from those communities.\textsuperscript{26}

For these reasons, I refer to this reciprocal relationship as “trading favors” instead of collective clientelism. My theory encapsulates the numerous ways that bloc voting, as well as collective action between elections, can influence the distribution of public services. It would be fascinating

\textsuperscript{23}I point readers to studies by Abers (2000), Montambeault (2015), Grindle (2007), and Fox (1994) that study variation in the type of relationship that civil society groups such as neighborhood associations have with politicians. Montambeault (2015) studies cases that vary in the autonomy of civil society (high/low) and the type of mobilization (individual/collective), which create four types of state-society relationships: democratic cooperation (high autonomy, collective mobilization), fragmented inclusion (high autonomy, individual mobilization), disempowering cooptation (low autonomy, collective mobilization), and clientelism (low autonomy, low mobilization).

\textsuperscript{24}Examples include the organizational brokers in Holland and Palmer-Rubin (2015), association leaders in Medeiros (2012); Gay (1994), puntero neighborhood brokers in Szwarcberg (2015), or slum association leaders in (Auerbach, 2017).

\textsuperscript{25}This is similar to the non-partisan, non-contingent constituency service that Bussell (2018) observes in India, though it occurs between high-level legislators and individual citizens in her case. These legislators are often asked to get involved precisely because local officials are engaging in unequal and biased distribution of public services.

\textsuperscript{26}Like Abers (2000), I also observed that some municipalities exhibited “scaling up” dynamics and had coalitions of associations. These groups, known as federations, brought together the presidents of most community associations in the municipality on a regular basis to discuss issues and work together. The federations seemed effective in some places, not others; some association presidents participated while others did not. It was beyond the scope of my project to explore this variation in detail and is a very interesting topic for future study.
to study when communities pursue relationships that are more clientelistic vs. more programmatic, and I will leave that topic to future extensions of this project and other scholars.27

1.2.2 Observable Implications

My theory of trading favors yields a number of specific patterns that we would expect to observe on the ground. The predictions focus on the short-term and long-term relationship between community organizing, voting behavior, and public service provision.

The first observable implication reflects an overall relationship between community organizing and public services:

Observable Implication 1 Organized communities are more likely to have better public service access than weakly organized communities.

Organized communities are neighborhoods or villages with high community activity and/or strong, unified leadership. This prediction is not novel on its own, and a general relationship between social capital, strong leadership, and public goods provision is widely accepted in the broader literature. It encompasses numerous mechanisms, including but not limited to protest by group members, lobbying by group members or leaders, personal political relationships between leaders and politicians, electoral ties between group members and politicians, and effective common pool resource governance.

The next two observable implications piece apart this overall relationship by focusing on a specific electoral mechanism of bloc voting, which I believe has been overlooked in the political science literature:

27See work by Lopez and Almeida (2017) and Joffre Neto (2003) for related work on Brazilian local politics.
1.2. The Argument: Trading Favors

**Observable Implication 2**  *Organized communities are more likely to coordinate their voting behavior than weakly organized communities.*

Organized communities with high community activity and/or strong, unified leadership have more effective community associations. The associations hold regular meetings and provide a platform for sharing information about candidates, endorsing a specific candidate, and encouraging group members to support that candidate.

In weakly organized communities, members participate begrudgingly or not at all, and leaders do not take initiative or are not respected by community members. Their associations may only exist on paper, and members do not share information, listen to leaders, or change their voting behavior to benefit the broader community.

Community characteristics are sticky and tend to change very slowly over time, and an extension of this implication is that the same communities will tend to coordinate their votes over time. However, certain specific factors can impact a community’s ability to mobilize around a specific candidate. For example, if the long-time favored candidate stops running for office, it will take extra time and effort to identify a new candidate.\(^\text{28}\)

The final implication looks at the relationship between bloc voting and public goods provision:

**Observable Implication 3**  *Communities that coordinate their voting behavior in a specific candidate are more likely to have better public service access than communities that disperse their votes.*

\(^{28}\)Other factors can impact a community’s willingness to mobilize. For example, a community’s electoral section may vote with another community, and bloc voting would not make sense if the community’s vote cannot be separately monitored. Community members may also vote at multiple different polling stations, in which case it would not make sense to put in the time and effort to coordinate the vote. Changes to electoral sections between elections also may occur due to logistical factors overseen by the regional electoral board, though communities can also request changes.
With scarce resources in most parts of the developing world, politicians must make choices about who gets what. We can debate how to design the most effective programmatic policy, but the reality is that politicians want to get elected and respond to electoral incentives. Elected officials are more likely to prioritize communities that gave them votes, especially if the community proved its allegiance by concentrating its vote. In many instances, communities do coordinate their votes but their candidate loses; nevertheless, the candidate is likely to have strong personal or partisan relationships with other elected officials and can still help the community.

Elected officials are also more likely to prioritize communities that signaled their ability to coordinate, even if they supported a different official or losing candidate. This is because those communities have signaled that they are more likely to protest and make a fuss if they do not receive public services.

1.3 The Case and Scope Conditions

How can we study these issues and test the observable implications? Scholars have studied distributive politics and public goods provision throughout the world. I focus on Brazil, which is a country of contrasts and a fascinating place to study distributive politics, civil society, and public goods provision. I first explain why I focus my study in the drought-prone Northeast region of Brazil, and then I describe the applicability of my theory to other contexts and outline some scope conditions.

1.3.1 Northeast Brazil

This dissertation draws on a rich tradition analyzing pork politics, patronage and clientelism, and public service provision in Brazil. Scholars have written classic studies of Brazil’s transition to
democracy, its weak party system, and the role of pork politics and personal relationships in national and state politics.\textsuperscript{29} Others dive deeper into state and municipal politics to study local governance, policy reforms, civil society, and public goods provision.\textsuperscript{30} These works build on more historical studies of Brazilian social movements and its culture of political activism, such as the landless workers’ movement, environmental movements, labor movements, and the church.\textsuperscript{31}

I also draw on excellent recent work that focuses specifically on distributive politics and public service access in Brazil. These studies look closely at state and local political accountability and government expenditures,\textsuperscript{32} clientelism,\textsuperscript{33} party politics,\textsuperscript{34} and social networks and political behavior.\textsuperscript{35} Very little work looks systematically at the relationship between local politicians, local citizens, and locally-based civil society organizations, and I study these dynamics by drawing on my own in-depth fieldwork and rich ethnographic, grounded studies of local politics, clientelism, civil society, and public service provision in single municipalities.\textsuperscript{36}

Why Brazil? Brazil is an upper middle income country with the capacity to implement a federal social program that serves 12 million families across the country (Fried, 2012). It ranks among the top Latin American countries in a clean elections index and average among Latin American countries in a civil society participation index (Coppedge et al., 2017).\textsuperscript{37} Given these political and

\begin{footnotesize}
\begin{enumerate}
\item See Arretche and Rodden (2004); Samuels (2003); Ames (2001); Mainwaring (1999); Hagopian (1996).
\item See Abers and Keck (2013); Avritzer (2009a); Abers (2000); Tendler (1997).
\item See Wolford (2010b); Hochstetler and Keck (2007); Keck (1992); Mainwaring (1986).
\item See Boas, Hidalgo, and Richardson (2014); Brollo and Nannicini (2012); Ferraz and Finan (2008).
\item See Nichter (2018); Hidalgo and Nichter (2016).
\item See Klašnja and Titumir (2017); Samuels and Zucco (2015, 2014); Avelino, Biderman, and Barone (2012); Desposato (2006).
\item See Medeiros (2012); Perlman (2010); Lopes (2005); Gay (1994); Perlman (1979).
\item The V-Dem project defines the clean elections index: an absence of registration fraud, systematic irregularities, government intimidation of the opposition, vote buying, and election violence. It defines the civil society participation index: major civil society organizations routinely consulted by policymaker, the involvement of people in civil soci-
\end{enumerate}
\end{footnotesize}
economic conditions, I would expect Brazil to have broad public service access and strong civil society involvement in local politics, as part of a trend of reduced clientelism (Tendler, 1997).

However, Brazil’s federal system and large land mass provide subnational variation in institutions, climate, and social contexts, making it representative of different levels of development. Brazil’s economic inequality is among the highest in the world, and regional disparities are striking.\(^{38}\) Northeast Brazil is the poorest, most rural region of the country and is likely to be more representative of rural regions in democracies with weaker state capacity, weaker civil society, and higher rates of clientelism and patronage.

Scholars have documented clientelism and political activity of community associations in the urban center of Recife and throughout the rural areas of the Northeast (Montambeault, 2015; Nichter, 2018). The Northeast is comparable to medium human development countries such as Bolivia, India, or Honduras, while the wealthier Southeast is comparable to high human development countries such as Turkey or Mexico.\(^{39}\) Still, clientelism and political activity of community associations have been documented in the wealthier Southeastern urban centers of Rio de Janeiro, Porto Alegre, and Belo Horizonte, among others, and rural areas of the state of Minas Gerais.\(^{40}\)

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\(^{38}\) The World Bank’s GINI index value for Brazil in 2014 was 51.5. For reference, the GINI index value in 2014 for Argentina was 41.4, Colombia was 52.8, Mexico was 45.8, Peru was 43.4, Russia was 39.9, South Africa was 63.0, and Uruguay was 40.1. The GINI index value in 2016 for the United States was 41.5. Higher GINI values signify higher inequality.

\(^{39}\) The Human Development Index in 2010 for states in Southeast Brazil ranged from 0.731 to 0.783, for Northeast Brazil from 0.631 to 0.684. The HDI for my specific research state of Ceará was 0.682. Brazilian statistics are available from the Brazilian Institute of Geography and Statistics (IBGE). In 2017, the HDI value for Turkey was 0.791, Mexico was 0.774, Bolivia was 0.693, India was 0.640, and Honduras was 0.617. Global statistics are available from the UNDP Human Development Report.

\(^{40}\) See Toledo and Presno Amodeo (2014); Araújo, Tolentino, and Theophilo (2009); Montambeault (2015); Abers (2000); Gay (1994).
1.3. The Case and Scope Conditions

While my theory applies to most public services, I focus on variation in water access: water scarcity is a growing global concern, and access to water is both a political and social issue. Where poverty and water scarcity are common, secure, reliable access to clean drinking water is often the most important socioeconomic problem. The experience of water scarcity, especially during drought, is heavily influenced by local public policy and water management, and community associations play an important role in local water resource management in Northeast Brazil (Enéas da Silva et al., 2013) and more broadly (Ostrom, 1990).

Within Brazil, water, drought, and politics are highly salient topics. It has among the highest number of people affected and economic damage by droughts, with some estimates of damage in 2014 and 2012 at $5 billion and $1.5 billion USD, respectively (EM-DAT, 2015). Northeast Brazil suffered five years of devastating drought from 2012-2016 and is projected with high confidence to suffer a decrease in water resources due to climate change (Bernstein et al., 2008, 3.3.1). Researchers from the World Bank compiled budgetary measures to estimate that the federal government spent R$16.6 billion Brazilian reals (approx. $4.5 billion USD) during 2012-2014 on drought relief in the Northeast (De Nys, Engle, and Magalhães, 2016). For comparison, the GDP (current R$) of the semi-arid region in 2011 was approx. R$163.5 billion (SIGSAB, 2011).

Northeast Brazil’s semi-arid region composes 10% of the area of Brazil and is the poorest region of the country (Grupo de Trabalho Interministerial, 2005). In Northeast Brazil, drought is part of daily life, and access to relief and water resources is highly politicized (Bobonis et al., 2017). My interviews suggest that drought relief is sometimes used as a political tool, particularly programs that can be targeted by neighborhood and household.

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41 Primary costs were debt renegotiation for rural farmers, PAC equipment for well drilling and dam construction, Bolsa Estiagem and Garantia Safra cash transfers to rural farmers, and water truck deliveries.
1.3.2 Applicability and Scope Conditions

While I test my theory in Northeast Brazil, it applies to many parts of the world. Essential public services such as water, health care, education, and infrastructure tend to be under-provided in developing countries, and their allocation is often politically motivated.

My theory applies to local public and club goods. Communities in my theory seek basic public services and local development programs that will be shared and used by most or all members of the community. The main scope condition is that goods can be targeted to certain communities, for example roads, water or sanitation networks, trash collection, schools, or clinics.

My theory is most applicable to areas where voters organize in geographically-based civil society organizations, since the constituents of the organization can be targeted with club goods. It also applies more broadly to civil society organizations where the aggregate vote can be monitored in some way, for example along ethnic or sectarian lines (Chandra, 2004; Cammett and MacLean, 2014; Corstange, 2016).

I focus primarily on water access. Water scarcity is a growing concern for a majority of the world’s population, and more than half of the world’s poor live in drought-prone areas. Compounding the challenges that rural populations already face, approximately 40% of Earth’s land surface and more than 2 billion people live in dry lands vulnerable to droughts (Mearns and Norton, 2010). My findings about politicization of water access are most applicable in other major middle income countries and in other semi-arid or arid contexts where drought and water scarcity occur.

Additional scope conditions focus on institutional features. My theory is applicable in places with regular, free and fair elections and where groups can organize freely. My theory is most likely to operate in democracies, though scholars have documented the role of bloc voting and community
organizing in elections for local government and other party positions in semi-authoritarian or
dictatorship countries.\textsuperscript{42} I elaborate on these scope conditions in Chapter 7.

\section*{1.4 Dissertation Overview}

The dissertation begins with an in-depth description of my theory. It continues with an overview
of politics and society, both present-day and historical, in my case of Northeast Brazil.

In Chapter 2, I provide my main theoretical argument. This chapter describes in detail what
I mean by high community activity and strong, unified leadership, and it explains how each of
these characteristics affects a community’s pre-election and post-election bargaining power. It
talks through the ways that communities can coordinate their votes and then pressure politicians
between elections in order to get better access to public services. I elaborate on the motivations
and actions of politicians, the role of other communities, and the impact of electoral institutions on
my broader theory, and I outline a typology of community organizing.

In Chapter 3, I describe my case and provide an overview of politics and society in rural North-
east Brazil. I begin with key details about local development and water resources, community
associations, and electoral politics in the region. I then provide explanations for the origins of
community organizing in my case, including the role of historical contentious collective action
and patron-client relationships.

In the rest of the dissertation, I test my theory with a variety of methods and data sources that
I collected during 18 months of fieldwork in 2016 and 2017. I use qualitative interviews, compar-
ative case studies, household survey data, and long-term fine-grained election data to evaluate the
observable implications described earlier in this chapter.

\textsuperscript{42}See Read (2012) for detailed work on associations and politics in Cuba and China.
In Chapter 4, I explain how my theory of trading favors plays out in rural communities in the Northeast Brazilian state of Ceará. I illustrate my theory with case studies based on qualitative interviews with rural residents, local leaders and politicians, state bureaucrats, and academic experts.

In Chapter 5, I test my main hypotheses through statistical analysis of an original household survey with 1,990 respondents (from 120 rural communities in 10 municipalities) merged with precinct-level electoral data. I develop a water reliability and security index and study the relationship between community organizing variables (community activity, leadership turnover, and leadership competition), bloc voting at the community polling station, and water access. My results show that water access is most reliable and secure in communities with high community activity and constant leadership. I find evidence for my main mechanism: organized communities are more likely to concentrate their votes, and bloc voting improves water access.

In Chapter 6, I analyze long-term voting patterns at electoral sections across the state of Ceará in five elections: 2000, 2004, 2008, 2012, and 2016. Since community characteristics are “sticky” and change very slowly, I expect that a group’s bloc voting pattern will be consistent across elections. Analyzing over 15,000 sections (polling station or smaller) over time, my results show that vote concentration in one election strongly predicts vote concentration in the next election: the same places continue to concentrate their votes, and the same places continue to disperse their votes. In addition, I find that bloc voting is higher where the previous most voted city council candidate ran again, since the group has a clear person to rally around. Nevertheless, I find evidence that many sections switch and vote for a different top candidate even if their previous most voted candidate ran again.

In Chapter 7, I highlight the applicability and scope conditions of my theory. I describe key theoretical contributions and policy implications, especially in the fields of distributive politics,
1.4. Dissertation Overview

political economy of development, and water politics and policy. I conclude with suggestions for avenues of future research.
Chapter 2

A Theory of Trading Favors

How do citizens influence the distribution of public services? I argue that groups of voters increase their bargaining power vis-à-vis politicians by coordinating their votes before the election and pressuring politicians after the election. In the context of regular elections, the cycle of trading favors is a long-term relationship between citizens, leaders, and politicians (see Figure 2.1).\(^1\)

Before the election, a group of voters may decide to coordinate its votes in a particular candidate. Its ability to coordinate successfully is a function of multiple community characteristics, specifically community activity and leadership. Then, the election happens. Results are shared by word of mouth or by news media, and members, leaders, and politicians see which communities followed through on their promises and which candidates won. The electoral map is set.

Next, a group of voters may decide to get the attention of candidates whom they supported by protesting or making personal appeals. Their ability to get attention is again a function of

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\(^1\)My theory draws on the two-sided credibility problem in redistributive politics highlighted by Robinson and Verdier (2013), whereby voters must credibly commit to providing support to politicians, and politicians must credibly commit to honoring campaign promises if they are elected. I apply their logic to groups and focus on public service provision in response to aggregate voting behavior.
multiple community characteristics. Then, the politician does or does not provide public services; the politician is responding both to the prior election’s results as well as anticipating the future election. As the electoral term nears an end, a group of voters will evaluate the promises and actions of politicians and set a new plan for the next election.

I argue that the most influential characteristics are community activity and leadership strength and unity. Community activity is defined as participation by group members in informal and formal interactions. Leadership strength and unity occur where opinion leaders and/or elites serve as unified group leaders.

Figure 2.1: Trading Favors

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\(^2\) The phenomenon of trading favors can lead to both particularistic and programmatic distribution of services. In this project, I study whether citizens have access to essential public services or not; extensions of this project will seek to explain why we see more distortionary or non-programmatic distribution in some places and not others.

\(^3\) The politician may also be responding to the difference between a community’s promised vote and its actual vote. In some scenarios, a politician may prefer a community that promised 70 votes and delivered 60 votes to a community that promised 200 votes but only delivered 100 votes.

\(^4\) To clarify my argument, I describe the theory in extremes of high vs. low community activity and strong vs. weak leadership strength and unity. I do the same when identifying a typology of community organizing in Section 2.3. However, I believe that these dimensions are continuous, as I describe in the case studies in Chapter 5.
CHAPTER 2. A THEORY OF TRADING FAVORS

These characteristics affect a group’s ability to negotiate with politicians, and they provide opportunities for “exit” and “voice” and give more power back to local citizens. Organized communities are better able to “exit” an otherwise asymmetric relationship with politicians. They are better able to coordinate their votes before an election, which affords them stronger bargaining power vis-à-vis politicians. Their votes are important for the politician to be elected, and they can credibly switch to another candidate. Organized communities have a stronger “voice” to express grievances and demand changes in their relationship with politicians. They are better able to get the attention of politician after an election (or put another way, between elections), which also affords them stronger bargaining power. They can protest publicly and demand public services privately in exchange for their future electoral support.

I define my two main concepts of community activity and leadership in Section 2.1, and I explain how each characteristic influences pre-election and post-election behaviors in different ways in Sections 2.2.1 and 2.2.2. Other communities, local politicians, and electoral institutions also play a role in my broader story, and I describe them in Section 2.2.3 and 2.2.4. Alternative explanations for variation in sub-municipal public service provision include the size of the community and its distance from the city center, as well as the existing level of service access and average income. These explanations fit into my theory independently and through their influence on community and leader characteristics. However, I primarily focus this study on the micro-foundations of voter organization and collective behavior within a community.

5I borrow these terms from Hirschman’s (1970) influential book. As in his theory, loyalty can change these relationships. Where a group has personal loyalty to a specific candidate, often because the candidate lives in or near the neighborhood, they are less likely to exit the relationship. However, the candidate may be more likely to listen to their “voice” because the candidate is also loyal to the group, or the candidate may be less likely because he knows that the group will not leave.

6While this is a long-term relationship, I take a snapshot of one election cycle in order to explain the mechanisms. The labels of pre-election and post-election are helpful for conceptualizing the theory, but there is not a fixed moment between elections when the period switches.
2.1. Variation in Community Organizing

Community characteristics are not independent in the long-run, and they are interrelated and endogenous to each other and numerous other contextual and social factors. I use the two key dimensions of my theory – community activity and leadership – to create a 2 x 2 typology of community organizing. I first describe the typical community in each of the four boxes and the ways by which community activity and leadership function in each box. Nevertheless, in the short-run and given a community’s current characteristics, I argue that community activity and leadership each play different roles before elections and between elections.

Community characteristics are also not randomly assigned, and this chapter does not describe the origins of these characteristics. Instead, it focuses on the relationship of “trading favors” between group members, leaders, and politicians, given a particular set of community attributes. The characteristics of community activity and leadership are sticky; while communities can and do change, the shift is slow and spans multiple election cycles.\(^7\) Still, this begs the question: how did communities become the way that they are? I will discuss these points in detail in the following chapter.

2.1 Variation in Community Organizing

2.1.1 Community Activity

Communities are groups of people living in the same geographic area, and community members view themselves as belonging to the same neighborhood or village. Residents of rural communities have most likely lived in that area for much of their life, and they perceive themselves as belonging to a specific social and geographic group. Community social characteristics vary widely, even

\(^7\)In their study of neighborhoods in Chicago, Sampson and Graif (2009) find that trust within a neighborhood is remarkably stable over time, even though residents leave and new residents move in. They find very similar results across surveys conducted in 1995 and 2002.
among neighboring communities, and I first provide context about social relationships and community institutions before defining my main concept of community activity.

**Social Relationships:** Social relationships are incredibly important for both emotional reasons and as a safety net in the event of a crisis. Within rural communities, multiple family groups have complex, long-standing relationships with each other and with local economic and political elites. The primary goals of most community members are to improve their income and public service access and strengthen their social relationships. Most residents rely on subsistence farming or the income of one or two family members with informal or formal employment; with insecure income and vulnerability to climate and economic shocks, social networks are very important.

The structure and characteristics of social relationships can vary significantly between neighboring villages, and these neighborhood-level features have a strong impact on individual behavior (Entwisle et al., 2007). I focus on how communities vary in their degree and type of interaction, trust among group members, and reciprocity in economic, labor, and emotional exchanges.

**Community Institutions:** Most rural communities have some form of community institution that is a collective actor responsible for advocating for the community as well as managing collective resources. The institution may be a formalized, registered civil society organization, as with many neighborhood/community associations, non-governmental, or non-profit organizations. It may also be an informal gathering of community members at town hall-style events.

These institutions hold meetings for members to discuss collective issues and identify group needs, though participation levels and formats vary by community. Specific membership criteria may vary by institution, but they almost always correspond to living within a certain spatial area that the group has determined reflects the boundaries of the community or neighborhood.

Communities face a classic collective action problem in coordinating their members to define common goals, identify potential resources, and take action. There is significant heterogeneity
2.1. Variation in Community Organizing

across community associations, even those within the same municipality. Variation in community social relationships and institutions lead me to my primary concept of community activity, and I differentiate between groups with high community activity and low community activity.

Definition: Community Activity

Groups with high community activity have high levels of interaction among local residents in informal (daily interactions) and formal (civil society organization) environments, and they have high trust and reciprocity within the group. A higher share of residents are members in the association, and they have regular and frequent association meetings. Members participate willingly, share their opinions, and contribute to the meetings. Members have strong feelings of unity and share a sense that the group can achieve collective goals by working together.

High community activity involves frequent participation by group members in public events, informal socializing, and community and other associations, such as school, church, sports, or women’s groups (Gordon and Babchuk, 1959). Participation in voluntary groups and community events has been shown to promote social trust and norms of reciprocity as well as to facilitate civic engagement (Almond and Verba, 1963; Putnam, Leonardi, and Nanetti, 1993; Kwak, Shah, and Holbert, 2004).

When group members participate in collective environments, they are more likely to share information and identify shared preferences. Community associations, whose goal is to access and manage collective goods and services, provide a formal, regularized focal point for coordination.8 High activity enables group members to more easily discuss and coordinate their choice of candi-

8Other scholars studying social relationships within small communities highlight the concepts of social capital and social networks, participation in social organizations, and human resources, among others (Almond and Verba, 1963; Putnam, Leonardi, and Nanetti, 1993; Krishna, 2002; Flora, 2018). These concepts are all related to my theory, though I focus on community activity because the actions in my theory – coordination of voting and group pressure – require the willing and active participation of most group members.
date and explain the benefit of voting collectively. It also enables members to discuss the benefits and costs of different forms of protest and choose collective actions after the election.

Members of groups with low community activity do not participate in meetings or organize together. They have weaker feelings of unity, trust, and reciprocity. They often express dissatisfaction with the association and do not see a role for collective action in making positive changes in the community.

Community activity in the long run may be endogenous to the success of the association, leading to positive or negative feedback loops. Low activity is more likely in communities where the association has not succeeded in attracting development projects or assisting residents with access to government benefits. Similarly, high activity is more likely in communities where the association has been successful and members have identified resources for the association to target.\(^9\)

### 2.1.2 Leadership Strength and Unity

Group leaders are local residents who have taken an active role and are elected through the local community associations. They aggregate the preferences of community members into requests for collective benefits, and they may also pursue individual goals and benefit privately from the position.\(^{10}\) Leaders often serve as development and/or vote brokers, and their incentives and actions vary depending on their local status and accountability to group members. I first provide con-

\(^9\)However, the feedback loop may stop when community members perceive that they have everything that they need. Where members do not see a future role for the association, especially if the association is not needed on an ongoing basis to maintain local services or register members for government programs, then activity will likely decline. Later on, if residents perceive the association may once again be useful, they may remember the prior successes and revive the organization.

\(^{10}\)Murillo (2001) makes a similar argument that union leaders play an important role in aggregating union members’ preferences and representing their interests to the government, and she explains that union leaders may have different preferences and objectives than their members.
2.1. Variation in Community Organizing

text about development brokers, vote brokers, incentives, and selection and accountability, before defining my main concept of leadership strength and unity.

**Development Brokers:** Association leaders often facilitate access to local public services and development projects. These leaders represent the community to the municipal government and develop long-term relationships with politicians and government officials. In many instances, the signature of an association or other local leader is required for access to government or non-governmental organization (NGO) development programs. The leader’s status in the community often depends on her ability to obtain local public goods and services for the community. When leaders are successful in obtaining resources for the community, they are more likely to be able to mobilize members, continue as leaders, and maintain the trading favors relationship.

**Vote Brokers:** Group leaders also encourage political candidates to compete for group members’ votes in order to extract campaign gifts and promises, and they may serve as vote brokers. This strategy is most successful when the group leader demonstrates that she can and will mobilize the group to vote for political allies. Leaders are aware that they are competing against other communities within the municipality for access to politicians and public services, and they may use their position as vote brokers to elevate the status of their own community in relation to other communities.

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11 Fox (2007) studies local leaders in rural Mexico and asks, “Do they represent the village to municipality, or do they represent the municipality to the village?” (p.182). He finds large variation in the legal frameworks for submunicipal governance and autonomy as well as variation in the success of local leaders advocating for their community members.

12 Baldwin (2015) and Tsai (2007) both describe that traditional leaders (in parts of Sub-Saharan Africa and China, respectively) who are “embedded” in local communities are more likely to invest in community institutions and attract public goods in order to improve their local status.

13 Auerbach and Thachil (2018) find that slum dwellers in India prefer slum association leaders (who act as brokers) who are more capable of demanding government services, where capability is signalled through education level. I highlight the similarity with the discussion of organizational brokers (in high activity communities) and independent patrimonial brokers (in low activity communities) in Holland and Palmer-Rubin (2015).
Incentives: Group leaders may also have political ambitions and use their social ties within and outside the community to run for local office. Like group members, leaders seek to maximize their income, public service access, and social relationships. In addition, they experience economic and emotional benefits and costs from organizing the group. Their income may include contributions from politicians as brokerage fees or kickbacks. They pay a cost that is a function of the effort that they put into organizing group members; this cost is lower if community involvement is high.\textsuperscript{14}

Selection and Accountability: Leadership selection and accountability play important roles and vary widely. Group leaders may be elected through a private vote or public discussion, elected by only association members or by all community members, or appointed by a political, religious, or ethnic figure.\textsuperscript{15} Leaders may therefore be accountable to different groups and experience different levels of competition. This variation shapes their incentives to invest personal time to achieve collective benefits and impacts the types of resources that they seek out for the community. Leadership strength, unity, and effectiveness therefore depend on how leaders are selected (selection process), how many people they compete against (degree of competition), and how long they expect to stay in power (mandate and term limits).

There is wide variation in the type of leadership in rural community groups. I differentiate between groups with strong, unified leadership, and groups with weak or divided leadership.\textsuperscript{16}

\textsuperscript{14}If the community members and association want different things for the community, then the opposite is true. Association leaders will have to work harder to achieve their goals if the community is active. This is one example of the endogeneity of these concepts over time. Nevertheless, given certain present characteristics, community activity and leadership play different roles in the short term.

\textsuperscript{15}Deserranno, Stryjan, and Sulaiman (2017) study savings and loan groups in Uganda and find that leaders selected through private vote, as opposed to public discussion, are more representative of group members and provide more services to poor group members over time. Baldwin (2015) discusses variation in accountability of chiefs to their group members, driven by embeddedness and social sanctions, in Africa. Shami (2012) finds that competition among rural patrons in Pakistan leads peasants to have stronger bargaining power and therefore obtain better services through the patron, and Auerbach (2016) finds that competition among local slum party workers in India is associated with an increase in public services delivered to that slum.

\textsuperscript{16}Scholars differentiate leadership in voluntary organizations in different ways, and there is little consensus on how to analyze leadership and power structures. Gittell (1980) differentiates American community organizations by
2.1. Variation in Community Organizing

Definition: Strong, Unified Leadership

In groups with **strong, unified leadership**, the same one or more strong leaders participate as central community figures in the community association leadership (president or other board position). They act as opinion leaders, compete against other candidates, and are repeatedly elected to association leadership. In communities with multiple strong leaders or families, the leaders are unified when they work together to improve the resources of the community and respect the authority of the current president. Strong leaders are able to coordinate group members to participate in collective actions.

Strong leaders are prominent figures in the eyes of both group members and outsiders. They are the main people in the community whom members seek out for advice on collective and political topics; they have significant influence and tend to be well-respected by community members. Local leaders are often government employees in low- to mid-level municipal positions, doctors or nurses, priests, teachers, matriarchs, or elders. In other contexts, they could be union leaders, traditional chiefs, landowners, work bosses, and even gang leaders. Strong leaders benefit from the position as residents of the community and/or through side benefits.\(^{17}\)

Some strong leaders are similar to opinion leaders while others are similar to hierarchical elites (Siegel, 2009). Opinion leaders are seen as experts and tend to have high levels of formal and informal communication with group members (Weimann et al., 2007). Opinion leaders have similar degree of leadership turnover (Rotating vs. Constant/Charismatic) and selection (Externally Imposed vs. Staff). In her study of rural American communities, Flora (2018) reviews the literature on power dynamics and identifies common duologies of Pluralism vs. Elitism based on decision-making within communities or Working Class vs. Interest Groups based on class-based relationships and economic control. Sorensen and Epps (1996) study leadership and local development in rural Australia and differentiate between Legitimizers who are prominent citizens with prestige vs. Effectors who are professionals or technicians. See additional characterizations of leaders in Chilcote (1990, p. 28-31).

\(^{17}\)Group members may perceive that the leader is using her power to attract collective benefits, and they may tolerate or even support the leader receiving private benefits as reward for attracting collective ones.
motivations as other community members in desiring collective resources, and they are seen as acting primarily in the interest of the community. Elites are individuals or families with disproportionate access to social, political or economic power who are tied to the community through current or recent residence (Dasgupta and Beard, 2007).\textsuperscript{18} Elite status is relative within a community.\textsuperscript{19}

The strongest leaders are those who have been in power for long periods of time, especially if they continue to be re-elected in the face of competition for the leadership position. A single leader or family provides a clear person for politicians to seek out as political brokers, and a single leader or family is more likely to maintain institutional knowledge that will help the group to access government programs.

Competition within the association involves two or more candidates competing for the position of president during regular association elections. Candidates for president compete for followers and try to get a majority (or plurality, depending on association rules) of votes among group members. They campaign by outlining their plans for the future and highlighting services or activities that they have done for the community in the past.\textsuperscript{20}

Where there is high competition, a constant, long-term leader is challenged by other community members and continues to be re-elected with the support of the community. Multiple leaders compete for supporters to elect them to the association presidency, and elected leaders have stronger ties to their supporters. On the other hand, where there is low competition, it is hard to know if the

\textsuperscript{18}The individual may have been raised in the community but currently resides in the municipal center.

\textsuperscript{19}Elites or strong, central figures are involved in community-driven development in different ways, and scholars distinguish between these two scenarios with the terms of “elite control” and “elite capture,” respectively (Fritzen, 2007; Dasgupta and Beard, 2007). Their description of elite control is similar to the opinion leaders described here. Koter (2013) also highlights variation in what she calls “hierarchical ties” between local leaders and their dependents; she argues that dependents are most likely to follow leaders’ electoral recommendations if leaders control the financial well-being of dependents and are well respected or trusted to make decisions for the community.

\textsuperscript{20}This may include coordinating women’s groups, soccer tournaments, church festivals, local water supply, or other communal benefits.
2.1. Variation in Community Organizing

long-time leader has the support of the community or not, since the candidate may have been the only option.

Unified leaders are those who work together to represent the community. Divisions within the community and contentious competition among leaders can lead to rivalries between current and former presidents or between multiple community associations. I distinguish between democratic competition for the association presidency (described above) and contentious personal divisions, which occur where presidents or associations compete for supporters or members based on personal or familial rivalries.21

Where there are contentious divisions, candidates for president are more likely to campaign based on their personal relationships to community members or other elites instead of highlighting their past accomplishments or their plans for the future to help the community as a whole. In this scenario, it will be much harder to coordinate or enforce group members’ actions, and both groups lose bargaining power towards politicians. Democratic competition does not necessarily lead to divisions among the leadership, especially if losing candidates for president respect the outcome of the election.22

In groups with weak or divided leadership, there is not a particular person or people whom outsiders view as the principal voice for the community. With weak leadership, the association president is not seen as an opinion leader and does not have influence in the community.23 In divided communities with contentious rivalries, factions may be able to coordinate internally but

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21 Murillo (2001) discusses partisan competition within leaders of the same union as well as rivalry among unions within the same sector. The former increases the likelihood of militant protest by union members. The latter causes each union to have lower bargaining power since the government faces higher bargaining costs if it must negotiate with multiple unions; unions are less likely to extract concessions from the government.

22 They may even fill other positions in the association leadership such as secretary, treasurer, etc.

23 This could involve either high turnover among residents not seen as opinion leaders, or it could involve constant leadership by a person not seen as an opinion leader and not challenged by other residents in association elections.
cannot unite the broader community. Each faction ends up with weaker bargaining power in its interaction with politicians and the bureaucracy.

Community activity and the strength and unity of leadership do not emerge independently, and the combination can create different dynamics within groups. In associations with high community activity, leaders cooperate with active citizens and are removed from leadership if they abuse their position. In associations with low community activity, leaders may benefit privately from attracting public goods and even dominate and intimidate citizens. Nevertheless, community activity and leadership characteristics emerge slowly over time and can be seen as distinct characteristics that play different roles in the short run. I summarize the variation in community activity and leadership in Figure 2.2.

![Figure 2.2: Variation Across Communities](image)

### 2.2 Trading Favors and Bargaining Power

In the previous section, I outlined the key community characteristics — community activity and leadership strength and unity — that will explain variation in access to public goods. In this section, I elaborate on the process by which communities access public goods and show how this process occurs differently for different types of communities. Community groups provide a platform from

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24 See the typology in Chapter 4 for more details about different combinations of community activity and leadership.
which local residents and leaders can mobilize and demand access to better public services. Groups with an active community and strong, unified leadership can draw on multiple mechanisms before and after the election.

Figure 2.3: Theory Map

2.2.1 Pre-Election Bargaining Power: Coordinating the Vote

How do groups negotiate with candidates before elections? Politics often involve an exchange or trade, and votes are the main good that a community can offer politicians. Polling stations commonly have fewer than 200 registered voters, and rural communities are spatially distinct from each other such that local public or club goods like a well or health clinic can be targeted to a group of people whose votes can be legally monitored at the precinct-level.

A group’s pre-election bargaining power comes from the prior concentration of its votes and the credibility of future concentration of its votes in a particular candidate. The characteristics of community activity and leadership factor into a group’s ability to negotiate with politicians and thereby influence the distribution of public services. The community can use the promise of concentrating its members’ votes to receive pre-election benefits from candidates. The primary means through which members coordinate their votes is through organized groups, especially community associations, and daily interactions in the community at the local school, church, and playing field.
In a common scenario, the association leader invites one or more candidates to speak to community association members during a meeting before the election and share his/her campaign promises or platform. The leader considers the campaign promises and gifts and encourages community members to vote for a particular candidate, and politicians compete for the promise of the community’s votes. Group leaders are likely to be aware of detailed precinct-level vote counts and share this information with others in the community.

Groups face a coordination problem in their attempt to get members to vote for the same candidate. In races with many candidates, especially for legislative positions, this is especially challenging. Leaders persuade group members to act together by discussing the benefit to having a “representative” in municipal government and appealing to voters’ awareness of political relationships and emotional ties to the community. Group leaders can also allude to or tell voters that they will be punished if they do not vote for the selected candidate as individuals or in the aggregate. In small communities, it is common for voters to discuss their vote choice, and many do not perceive that their vote is secret.

Group leaders can shop around for the best offers, and this is particularly true in weak party systems. They have been called organizational brokers (Holland and Palmer-Rubin, 2015), disloyal brokers (Novaes, 2017), or free agents (Muñoz, 2014), and scholars have highlighted the diverse roles that community leader brokers play in their communities (Szwarcberg, 2015; Auyero, 2014; Zarazaga, 2014; Auyero, Lapegna, and Poma, 2009; Gay, 1990).

The types of motivation and future benefits are important. Agrawal, Chhatre, and Gerber (2015) study a sustainable development forestry initiative and analyze how economic vs. environmental factors motivate individuals to protect forests. They highlight the potential for motivational crowding, where extrinsic/economic motivations from individual material benefits can crowd out intrinsic/environmental motivations from communal assets. Groups receiving collective benefits were less likely to experience motivational crowding. In their study, individuals with high political participation were also less likely to have economic motivations crowd out the communal and environmental motivations. They recommend that development programs target these individuals to serve as opinion leaders in their communities.

Smith (2016) documents that conversations about specific, factual information had a higher impact on political knowledge within low-education neighborhoods in Brazil, even though those conversations were more prevalent in high-education neighborhoods. She notes the role of opinion leaders in instigating these conversations and providing political information.
2.2. Trading Favors and Bargaining Power

In **active communities**, members are more likely to talk among themselves and with other community members. They share their opinions about whether or not they believe in supporting the candidate individually or as a collective. These chats are part of daily encounters at group meetings and in other parts of everyday life. Active members are more likely to voice their opinions about which candidate to endorse and successfully aggregate their preferences to reach an optimal candidate choice.

Candidates often make presentations at group meetings, and groups with high community involvement will have higher attendance at these meetings and more information about each candidate. In addition, high levels of trust and reciprocity mean that group members may be more likely to vote for the group’s preferred candidate as opposed to their personal preferred candidate, and this matters most when these preferences diverge. Social pressure and social incentives serve as selective incentives to help the group coordinate.

With **strong, unified leadership**, the leader uses her social, economic, or political power to persuade group members to vote for a particular candidate. Politicians are more likely to engage with strong, central figures with whom they have long-standing personal relationships and who can credibly commit to delivering votes of their dependents.\(^{28}\)

Strong leaders are more likely to succeed in bloc voting if they are elected democratically, especially if there is high competition in the community.\(^{29}\) Where multiple leaders compete for supporters to elect them to the association presidency, there are stronger ties between an elected president and her supporters. These same supporters are more likely to follow the association president’s voting recommendation during government elections.

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\(^{28}\)Schaffer and Baker (2015) and Cruz, Labonne, and Querubin (2017) also argue that politicians and/or brokers are more likely to target informal opinion leaders who are centrally located and embedded in social networks. Schaffer and Baker (2015) call this “persuasion-buying.”

\(^{29}\)Competition does not necessarily lead to leadership turnover. Where there is high competition and constant leadership, association members continue to select the same person or family to office even though there are challengers.
Strong leaders are more likely to be, or communicate with, brokers if they have long tenure. Those in power for long periods of time are likely to have stronger connections to other political and economic elites. Politicians know whom to reach out to in the community and have communicated or negotiated with the same person or family in past.

Strong leaders can use positive inducements such as holding campaign rallies at association meetings with food or gasoline subsidies. They can also use negative inducements and threaten to punish members who vocally defy the collective decision. Where leaders have more control over local public services, these inducements are more compelling. It is common in many developing country settings for collective development programs and registration for individual social programs to have decentralized implementation through local associations or leaders. These include rural extension services for farmers, community health workers, and water system management or water truck deliveries. Leaders may be able to set the group boundaries and decide what benefits each member receives.\(^{30}\)

Groups with active communities and strong leaders benefit from both characteristics. A strong, central leader of an active community can make more credible promises of bloc voting. Candidates are more likely to target these groups when making campaign gifts and promises, since they can focus their attention on a well-known, strong leader. The engaged citizens are aware of the benefits of having a strong leader with long-standing political relationships. If the leader is seen as abusing his/her position of power and using excessive sanctions against group members, then groups with active communities can remove the leader at the group’s next association election.

\(^{30}\)This logic draws on Olson (1965) who describes, “Only a separate and ‘selective’ incentive will stimulate a rational individual in a latent group to act in a group-oriented way... These ‘selective incentives’ can be either negative or positive, in that they can either coerce by punishing those who fail to bear an allocated share of the costs of the group action, or they can be positive inducements offered to those who act in the group interest.” Mares and Young (2016) discuss the role of positive and negative inducements. Where brokers are part of civil society and religious organizations, they describe positive inducements of social benefits, goods, and services, and negative inducements of social exclusion and exclusion from benefits.
2.2. Trading Favors and Bargaining Power

It is certainly possible, and common, for individuals in areas with active communities to see the value in coordinating votes but still not vote in the bloc due to personal preferences. These personal preferences may be based on individual ties to a candidate (such as individual vote-buying), party platforms, or the candidate’s platform or performance.\footnote{In many contexts with weak parties and/or personalistic politics, party and ideology are not main drivers of vote choice. In these scenarios, most voters select candidates based on the individual person than the party. This is especially true for city council members. In contexts with strong programmatic parties, party and ideology may make bloc voting more challenging. Other scholars have looked at party politics in the relationship between communities or interest groups and politicians. See Dasgupta (2017); Auerbach (2016); Palmer-Rubin (2016); Holland and Palmer-Rubin (2015).} Individuals may also identify with multiple identity groups (geographic neighborhood, religion, race/ethnicity, or other group) and be torn between endorsements by leaders of different groups. In small and rural communities, these identity groups and leadership networks are more likely to overlap; in urban areas, these tensions are more likely.\footnote{(Lopes, 2005, p. 156) finds this to be the case in major metropolitan area of the state capital Fortaleza in Ceará, Brazil. He finds an overall decline in the number and strength of local politicians with ties to specific neighborhoods because individuals belong to more than one social group. In the past, gaining support from just one type of group (i.e. geographic neighborhood or locally-based community group) was good enough for getting elected, but the strategy was no longer successful. Instead, politicians needed to appeal to broader sections of society.} Leaders with more power, persuasive skills, or coercive abilities are more likely to overcome this coordination problem. In addition, communities who perceive coordinated/bloc voting to be a successful strategy, especially if it worked for them in the past or for neighboring communities, are more likely to overcome this coordination problem.

Community characteristics are sticky and tend to change very slowly over time. Certain communities will tend to coordinate their votes over time, while others will consistently disperse their vote among many candidates. However, certain factors can make it more difficult for communities to continue concentrating their vote. If the long-time favored candidate stops running for office, it will take extra time and effort to identify a new candidate. More organized communities are in a better position to identify a new candidate, or switch candidates even if the previous most voted candidate did run again. Still, the concentration of voting may decrease.
While community members and politicians make many promises to each other before the election, each actor may defect. It is likely that the community does not or cannot coordinate the votes for that candidate. In this case, the community would keep any goods received during the campaign, but it would lose its credibility and therefore its ability to get resources in future elections. It is also likely that the politician will not or cannot follow through on promises after the election. This leads into my theory about the bargaining relationship after the election.

2.2.2 Post-Election Bargaining Power: Getting Attention

How do groups get politicians to follow through after elections? A group’s post-election bargaining power affects its ability to get the attention of and put pressure on politicians. Communities who chose to and successfully did coordinate their votes will have more bargaining power with the candidate after the election. However, candidates are still unlikely to comply, even if the community voted for them, unless they are pressured to do so.

Pressure from citizens can take multiple forms, and I highlight two mechanisms of protest and personal appeals. Protest involves physically going to elected officials’ offices or city council meetings, complaining on local radio, and even protesting in the state capital at other governmental agencies. Group leaders may do these activities on their own or organize group members to do so. They may also make personal appeals by reaching out to their (or group members’) friends who are politically connected.

33Boas and Hidalgo (2011) document the importance of radio access and control in local politics in Brazil. They find that incumbents are more likely to have radio applications approved, and candidates with community radio licenses are more likely to win. Medeiros (2012) also writes that Brazilian city council members perceive a high impact of the radio on their legislative behavior.

34Auerbach (2016) describes urban slum dwellers in India, who use three primary strategies to improve collective services: group claim-making, protest, and self-provision. Group claim-making occurs when a group of citizens led by a community leader go to city council members for help with services, and collective protest occurs when group members stage contentious demonstrations such as blocking roads. He finds that group claim-making is the most common strategy, and it is most effective in slums with dense party networks. Collier and Handlin (2009) and Grindle
2.2. Trading Favors and Bargaining Power

Coordinated voting before the election increases the community’s bargaining power after the election and makes politicians more likely to respond to protests or personal requests. Electoral results, including fine-grained precinct-level vote shares, are often disseminated by party officials if ballots are counted by hand; in other areas, local radio stations accompany the election and report on precinct-level totals as they are made public. It is common for most rural residents, even those in remote areas, to have at least a radio if not also a television, making detailed, factual electoral results widely known.

In active communities, members have more opportunities to discuss and select group actions. They are more likely to demand that group leaders take action and seek resources outside the community. Travel to protest or seek resources is expensive, and group members may pool donations because they perceive that the benefits outweigh the cost of the trip. Groups with high degrees of trust and reciprocity are more likely to donate so that members or the leader can protest.

With strong and unified leadership, leaders are more likely to have direct, personal relationships with politicians that can facilitate access to resources, even in the absence of participation by community members. If they serve in an informal or formal capacity as a vote broker, they will have relationships to draw on within a partisan or personalistic network. Politicians are more likely to listen to a leader with whom they have negotiated in the past and expect to work with in the future. They are especially more likely to negotiate with an elected association leader who is seen as an opinion leader by the broader community.

Strong, long-term leaders have better knowledge about municipal politics and bureaucratic procedures, and they are more adept at identifying potential resources for the community and

(2007) examine how associations engaged in distributive claim-making, which involves petitioning the government or joining government programs for access to public goods and services.

Dasgupta (2017) studies the relationship between civic engagement and public services through the mechanism of protest in India. He finds that the interaction between high civic engagement and political ties by electing a legislator from the national ruling party explains access to public employment programs.
seeking them out. With longer tenure and more experience with government programs, they are more likely to have access to other levels of government that they can use, if needed, to get attention after the election.\footnote{Bussell (2018) finds that many individuals bypass local politicians or bureaucrats and seek out high-level legislators for direct constituency services in India.}

Whom do organized communities pressure? When seeking out resources, communities appeal first to candidates to whom they gave a high share of votes, which was a commitment on behalf of the community and may have led the community to be pivotal voters for the politician. However, if the community failed to or chose not to coordinate its votes, it can still protest or make personal requests, though they are more costly and will require more intense or frequent efforts.

What do organized communities ask for? Once the leader or members have the attention of an influential politician, they will ask for development goods and services and/or for group members to be registered for individual programs. For example, they may ask for investment in or maintenance of communal electricity or water systems, higher frequency of visits by health workers, or higher status on a list for distribution of government development programs. They may also ask for individual benefits, such as employment programs, conditional cash transfers, or crop insurance programs. While the politicians themselves often do not have control over these programs, communities rely on politicians to influence local bureaucrats.

In most cases, the requests are for legal access to programs for eligible individuals or communities. Since development resources are often limited, eligible individuals or communities can request to be moved up the list in order to receive them sooner, and leaders working with politicians can facilitate complicated registration procedures.\footnote{Fox (2012) describes the diverse ways that social programs and public services can be politicized and targeted depending on their allocation criteria (discretionary or rules-based) and type of good (private, club, local public, public).}
2.2. Trading Favors and Bargaining Power

2.2.3 Politicians and Other Communities

My theory focuses on relationships and behavior within the community, but communities do not exist in a vacuum. Group leaders and members make strategic choices based on factors outside their community, especially the behavior of political candidates and other communities. I briefly describe the broader context as it relates to communities’ strategies.

Whom does the community rally behind? Voters and leaders face information asymmetries, especially before an election. Voters rely on leaders to obtain information about other communities and make informed guesses about candidates’ actions and promises. Leaders rely on their municipal networks to attract candidates to the community.\footnote{The literature on brokers emphasizes the role of information asymmetries between parties, brokers, and voters and also distinguishes between different types of brokers. See Stokes et al. (2013, Ch. 3) for the role of brokers in intermediating the exchange between politicians and voters.}

A community is better off if it is among the principal sources of votes for the candidate.\footnote{Electoral bases take two primary forms. In the first, the \textit{community} coordinates its votes such that a plurality of the community votes for one candidate, tying the community to a specific candidate. In the second, the \textit{candidate} receives a plurality of his/her votes from a specific community, tying the candidate to that community. If the scenarios overlap, the community and candidate are mutually tied. I focus most on the first scenario.} It is best off if its votes were pivotal for the candidate, but this is also a riskier strategy for the community.

Candidates strategically decide whether to seek dispersed support across their district or concentrated support in one specific area. They know that they can switch to a different area in a future campaign if they do not expect voters to re-elect them, and they compare the cost of attracting votes in one area against the expected vote returns they will receive.\footnote{A politician’s ability to switch electoral bases within the larger constituency depends on the electoral system. In systems with multi-member districts and at-large voting, as is the case with legislative elections in Brazil and many other countries, it is easier for politicians to seek votes in an entirely different region than in previous elections. The size of the district and political knowledge of local citizens will also influence a politician’s ability to switch territorial, identity, or issue-based electoral bases.}
A key distinction for candidates is whether to seek urban or rural bases of support. Urban voters are easier to reach, but there is high competition for their vote.\textsuperscript{41} While rural voters require the candidate to invest time in traveling to and learning about the community, there is less competition. Rural communities tend to be small, but rural voters are easier to monitor, since they vote at easily identified polling stations. Even a small number of votes may make the difference between winning and losing, especially in elections for legislative positions, so candidates are likely to seek out rural communities that can make a credible promise to vote for the candidate. The cost to candidates from seeking rural votes is lower if they can communicate directly with a strong, unified leader.

Candidates make personal, performance, and/or economic appeals to attract voters. A candidate who is a local resident provides a clear focal point for residents to rally behind and can make personal appeals to the community leader and voters.\textsuperscript{42} Where the candidate is a local resident, the candidate will have lower costs than other candidates from campaigning in the community and mobilizing support, and the candidate’s promises will be more credible (Lopes, 2005, p. 146).\textsuperscript{43} If a former politician or wealthy elite lives in the community and is active in the association, that person is likely to have more political connections, information about electoral politics, and significant influence within community networks.

\textsuperscript{41}In a large rural community or a urban center, the large population is likely to be the main source of votes for multiple candidates, and voters are likely to disperse their numerous votes across those candidates. In this case, the large community will have low to moderate bargaining power with multiple politicians. Group size is an important predictor of social capital and the ability of groups to overcome collective action problems and coordinate their votes; it also affects the number of voters at the community’s polling station.

\textsuperscript{42}This mechanism is similar to bloc voting by ethnicity, which serves as another heuristic for individuals to coordinate around a candidate and have a higher likelihood of their concerns be addressed. For example, Kenyan voters in groups with a co-ethnic candidate were more likely to concentrate their votes in that candidate; however, voters in groups without a candidate, even when their ethnic leaders encouraged them to vote for a particular candidate as part of an ethnic alliance, were less likely to coordinate and vote cohesively (Long and Gibson, 2015).

\textsuperscript{43}Cruz, Labonne, and Querubin (2017) make a similar argument that voters who are closer in social distance to a candidate will require fewer intermediaries to reach the candidate. They provide evidence from the Philippines that candidates are more successful in a village in which they are central figures in local social networks: where their family lives in the village or where their political brokers are central.
2.2. Trading Favors and Bargaining Power

In the absence of a clear local favorite, a candidate can make performance appeals. A candidate who has already been in office, either as an incumbent or former politician, can highlight his record in order to appeal to community leaders and seek support. If he helped the community out in the past, this will work in his favor. He can also demonstrate that he followed through on promises in other communities that voted for him in the past.

A candidate may make economic appeals by distributing individual or club goods before the election. Short-term appeals occur before the election and tend to fall under the umbrella of individual vote-buying, such as cash, household construction materials, water jugs, or other goods. Medium-term appeals may involve repeated actions, such as maintaining local public services that include water systems, health clinics, or transportation.

Long-term appeals like local “white elephant” projects provide a way to guarantee that the community follows through on its end of the bargain.\footnote{I follow the logic in Robinson and Torvik (2005) that politicians use inefficient “white elephant” projects to make credible promises to voters, since voters must elect those politicians in order to complete the project.} In a common example, candidates drill a well before an election but withhold the necessary pump and electricity until after the election. This strategy is more likely in communities with lower credibility of voting for the candidate, in order to create a commitment device, and in poorer communities that are unlikely to independently complete the project.\footnote{These patterns contribute to an underprovision of public services. Robinson and Verdier (2013, p. 262) focus on employment patronage and write, “Our analysis suggests that one sort of inefficient government policy arises as a way of making voters more dependent on politicians, and hence making it easier to buy their political support with job offers.” Early work by Bates (1981) finds similar dynamics with agricultural policy and targeting of public works projects.}

It is easier for groups to get resources if they appeal to candidates who were elected, but this is not necessary. An organized group is stronger than an individual, and a community that concentrates its votes in a losing candidate still has other options.\footnote{See Nichter and Nunnari (2017) for a discussion of how voters are punished and rewarded if they declared support for the losing or winning candidate. Many scholars have noted that voters in the opposition receive fewer benefits and} The losing candidate may have
connections to leaders in other levels of government or business elites, to whom groups can direct protest or personal appeals. Regardless of the outcome, concentrating a vote in a candidate creates a tie that can be harnessed in the future. Communities that disperse their votes may not be perceived negatively by municipal officials, but they also have less bargaining power. I add that this is especially true if other communities did concentrate their votes.

There is always the risk that the community creates ties with a politician who reneges and does not provide services before or after the election. Why go through the costly coordination of voting and protests or personal appeals if they do not work? Most services such as water supply and health clinics must be provided by the government or are prohibitively expensive for communities to do themselves. Even if bloc voting and protest are ineffective, vulnerable residents have no other options; the resources that they can get are so essential (such as water or health services), that they might as well try.\footnote{Depending on the context, a community may have external options such as NGOs or other non-state actors. These options still require coordination to identify and request resources.}

### 2.2.4 Electoral Institutions and Additional Considerations

My theory focuses on the way that citizens can take advantage of their electoral environment – especially the fact that their vote can be monitored at their polling station – to trade their votes for access to public services. Specific institutional factors may impact a group’s ability or desire to coordinate its votes.

Where polling stations are larger and include more people, bloc voting is less likely. This is because a larger polling station probably includes citizens from multiple small communities or one large community. In the first case, the votes of different communities are reported together, and are punished for their voting behavior (Brollo and Nannicini, 2012). See Bueno (2018), Grindle (2007, p. 133-143) and Bussell (2018) for a discussion of how individuals and opposition groups can bypass local elected officials in order to still receive benefits.
2.2. Trading Favors and Bargaining Power

Politicians are unable to monitor the votes of a specific community. It is not worth it to citizens to take the effort to coordinate their votes if they cannot bargain with politicians based on the election results. In the second case, it is simply much harder to coordinate a large group of people.

Where community members vote at many different polling stations, bloc voting is less likely. Politicians (and vote brokers) will find it difficult to monitor the community’s aggregate vote distribution if members are spread across multiple polling stations. In this case, it would not be strategic for the community to coordinate its votes, and politicians would be less likely to seek votes in this community.

Where the community is closer to the center, bloc voting is less likely; put in reverse, where the community is farther, bloc voting is more likely. Given their distance to the center, coordinated voting is probably the best way for isolated communities to be heard and have their needs met by the municipal government. In addition, fewer candidates are likely to travel out to the community, so there will be less competition. In communities with a very clear leader to serve as a vote broker, the distance may be less of an issue for candidates. Still, many association leaders like to bring their preferred candidate to the association meeting to speak in front of community members, and fewer politicians are likely to do so if the community is very far and hard to reach.

The bargaining power of a community is also affected by the actions of other communities, and some municipalities have more concentration of voting by community than others. I expect that this is a feature of 1) the spatial size of the municipality and spatial distribution of communities, where larger land area is likely to have more spatially distinct communities that are more likely to concentrate their votes; 2) the size and distribution of polling stations, where smaller precincts, especially in spatially distinct areas, are more likely to concentrate their votes; 3) electoral competition, such as whether two families compete for municipal power or there are many candidates; and 4) population, which affects the number of city council positions.
2.3 Typology of Community Organizing

I build on the previous discussions to summarize my trading favors theory in a typology of community organizing. I combine the concepts of community activity and leadership strength and unity in four community types in Table 2.1. I see these concepts as additive, not interactive. Community activity is beneficial on its own, and strong, unified leadership is also beneficial on its own. Communities receive the most benefit if they have both features.

Next, I summarize how the characteristics of each type influence a group’s ability to coordinate its votes before an election and pressure politicians in between elections. While the dimensions are continuous (for example, a community can have moderate activity or leadership), I dichotomize them for the sake of explaining my theory.

<table>
<thead>
<tr>
<th>Community</th>
<th>Active</th>
<th>Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong and Unified</td>
<td>Opinion Leader Cooperation</td>
<td>Elite Coercion</td>
</tr>
<tr>
<td>Weak or Divided</td>
<td>Collective Self-Governance</td>
<td>Inaction</td>
</tr>
</tbody>
</table>

Table 2.1: Communities by Type of Activity and Leadership

Opinion Leader Cooperation

“Opinion Leader Cooperation” communities in the top-left box have active community members and strong, unified leadership. These communities benefit from the additive presence of both features. Citizens are active in the association and have positive feelings toward each other and the community. They re-elect the same one (or more) opinion leader(s) because she gets things done.
2.3. Typology of Community Organizing

Before the election, the strong opinion leader discusses the benefits to voting together to create strong electoral ties, and she uses social pressure to persuade members to follow through. Voters are better able to credibly commit to voting for a selected candidate due to strong trust and reciprocity, and this increases the likelihood of politicians providing goods or gifts during the campaign. Political actors from outside the community can focus their attention on the opinion leader, which reduces their cost of engaging the community.

The opinion leader is more likely to have cultivated personal ties over time, and after the election she can leverage those ties and/or organize active members to protest and demand actions by politicians. Since voters are able to pressure politicians after the election, politicians are more likely to follow through on their promises and distribute development projects and other benefits.

Collective Self-Governance

“Collective Self-Governance” communities in the bottom-left box have active community members but lack a strong, central leader to motivate and coordinate them. These communities receive the benefits of having strong community activity but cannot benefit from strong, unified leadership. Residents are actively engaged with civil society organizations and share strong feelings of trust and reciprocity within their group. Active citizens share the responsibilities of leading the community within the organizational structure of one or more associations.

Leadership in these communities can be weak or divided. In communities with weak leadership, community members rotate through association leadership positions, but no one is seen as an opinion leader or takes strong initiative to pursue benefits on behalf of the group. Members view the leadership positions as a lot of work for no pay. In communities with divided leadership, there are contentious divisions among leaders and/or multiple competing associations. A politician will
have to navigate these local divisions to identify which leader to ally with, which increases the politician’s time and effort and makes him more likely to seek support elsewhere.

Active members recognize the value of having electoral ties with politicians, and the trust and reciprocity in the group can help them to coordinate their votes. Still, it is more challenging to enforce and coordinate the votes without unified, strong leadership. The engaged group is likely to protest post-election through activities organized through the association and other civil society groups, but the activities may be only moderately successful in getting development projects or other collective benefits.

**Elite Coercion**

“Elite Coercion” communities in the top-right box have strong leadership and but inactive community members. These communities receive the benefits of having strong, unified leadership but cannot benefit from community activity. This tends toward the common “elite capture” scenario.

There is a strong leader who coerces local citizens to take certain actions, and citizens feel apathetic or fearful and do not see a role for organizing as a group to achieve collective goals. There is some likelihood of coordinating their votes due to fear that the vote is monitored and that they will be punished if they do not cooperate. After the election, the leader can use personal ties to politicians to get resources. Since she does not face pressure from the community group members to do so, she is less likely to reach out unless she benefits personally. This results in moderate service provision.

**Inaction**

“Inaction” communities in the bottom-right box have weak or divided leadership and low community activity. Citizens have given up on the association; they are dissatisfied and do not participate
in collective activities. The association, if it exists, barely functions. There is not an influential leader to coordinate citizens to vote together, and citizens do not see a point to doing so. After the election, there is no one to take the lead in reaching out to politicians and no organized group to go out and protest.

**Other Factors**

I argue that community activity and leadership strength both have positive effects on public service access, but which is stronger? Communities interact and negotiate within their broader socio-political environment, and I believe that additional context will shape the relative success of each feature.

Community involvement may have a stronger influence in municipal environments that are characterized by more programmatic politics, while leadership strength may have a stronger influence in those with more clientelistic relationships. Scholars have argued that clientelistic strategies are more likely in places with high poverty rates, high levels of political competition, patronage/appointed bureaucratic positions, electoral volatility (where candidates receive very different vote shares across subsequent elections), and smaller populations (Oliveros, 2016; Weitz-Shapiro, 2012; Lopez and Almeida, 2017). I expect the relative outcomes between the Elite Coercion and Collective Self-Governance groups to be influenced by their political context.

### 2.4 Conclusion

How to citizens influence the distribution of public services? In this chapter, I presented a theory of “trading favors” where communities can coordinate and trade their collective votes for preferential access to public services. This long-term relationship with politicians is a form of local distributive politics, and neighborhood associations provide a platform for voters to increase their
bargaining power. However, community organizing is challenging, and there is wide variation in a community’s ability to coordinate and bargain with politicians.

To explain variation in community organizing and ultimately voting behavior and public goods provision, I argue that 1) high community activity and 2) strong, unified leadership each play an important role in enabling coordination among group members. Each feature impacts group members’ ability to coordinate their votes before an election and get the attention of politicians between elections.

I seek to test my theory and its observable implications, and my dissertation focuses on the case of rural Northeast Brazil. What does development, civil society, and local politics look like in my case? What explains variation in community organizing, and how do active communities and strong, unified leaders emerge? I take up these questions in the next chapter.
Chapter 3

Politics and Society in Rural Northeast Brazil

What does public service access, especially water, look like in my case? How do communities organize and what are the principal civil society organizations? Where does variation in present-day community organizing come from?

This chapter gives an overview of current and historical conditions in my case of rural Northeast Brazil, which provides a critical base for the analyses in subsequent chapters. I begin with key details about water resources and local development, community associations and civil society, and electoral politics. I then outline two primary explanations for the origins of community organizing in my case: historical contentious collective action and historical patron-client relationships.
3.1 Present-Day Development, Civil Society, and Politics

I focus my study in the Northeast Brazilian state of Ceará. Although relatively poor, Ceará has long been considered a regional success with highly regarded bureaucratic reforms in the 1990s (Tendler, 1997). Nevertheless, there is wide variation in access to public services across and within its municipalities. Steady water supply, access to schools and health clinics, and paved roads are unevenly distributed.

Communities are groups of people who live in the same geographic area, such as a neighborhood or a village, and self-identify as residents of that area. Rural communities in Northeast Brazil are similar to villages in other contexts and often have 20 to 200 households that are clustered around a small plaza in front of a church, with additional households spread out around the area. It may take an hour or more by car on a dirt road to access the community. Municipalities are the lowest administrative unit in Brazil.\(^1\) In the municipalities that I visited in Ceará, there tended to be between 50 and 300 rural communities outside the city center depending on area and population, though it is difficult to define specific community characteristics because communities are not official administrative units in Brazil.

During extended interviews in Ceará with residents in 54 different rural communities, I was struck by the extraordinary differences in water access and political relationships. Among otherwise similar communities, there is wide variation in access to basic services, civil society and community organizing, and political participation. I provide context for each of these principle areas, which are important for understanding the case studies and analyses in future chapters.

\(^1\)Brazilian municipalities are similar to counties in the U.S. context, and they have a mayor and city council that govern the municipality.
3.1. Present-Day Development, Civil Society, and Politics

3.1.1 Water Resources and Local Development

There is wide variation across households, municipalities, and states in sources of rural water supply. In census microdata for Ceará in 2010, among rural households the primary water sources were public water pipes (33%), wells on their property (21%), wells off their property (19%), cisterns or local reservoirs (20%), and water trucks (6%). In extreme cases, a municipality had 96% of rural households using wells or up to 43% of rural households relying on water trucks.

In a rural, poor, drought-prone region, water security is a constant challenge, and water is routinely mentioned as the biggest challenge facing the community. The census question about the primary water source obscures the wide variety of water resources that a single family may use, and it cannot capture the reliability or security of the water source.

Most rural residents rely on multiple water resources to satisfy their daily needs. In a common scenario, a family of six uses a rainwater cistern for drinking/cooking and purchases drinking water in jugs if the cistern runs dry. The family uses brackish well water for bathing/cleaning and uses river or reservoir water for subsistence agriculture and livestock.

Access to any one of these sources can easily break down: the cistern gets contaminated, the pump on the well breaks, water treatment equipment breaks, the well runs dry from overuse, or a pipe breaks. Environmental stresses add additional challenges; lack of rain can cause the cistern, the well, the river, and the reservoir to run dry. Where community members are truly out of options, emergency water trucks from the government provide 20 liters per person per day.

The variety of water sources is visible in Figure 3.1, which is a participatory map created by a rural community in Ceará during a workshop on participatory water resource monitoring and management.² The black squares in the center are households, with small dots depicting

²The workshop was conducted as part of a large field experiment. I am Co-PI of the project in the EGAP Natural Resource Governance Metaketa. See Section 5.2.1 for more details.
Multiple wells surround the community and are marked with an X if they have water: shallow wells mostly have water (POÇO CACIMBÃO or P.C), and deep wells lack water because they dried up from overuse or the government did not install the pump (POÇO PROFUNDO or P.PROF). A water tower on top left (CX 10,000L) supplies the community’s piped water network with untreated water from a shallow well, and residents use water storage tanks (BARRAGEM SUBTERRANEIA or BARRAGEM SUPERFICIAL) and river water for subsistence farming and livestock. The map also depicts the school (ESCOLA) and a paved road.

Different government programs and entities installed and maintain each of these resources. As such, rural residents must navigate complex bureaucracies and politics in order to maintain their existing resources and get access to new services. To do so, many respondents in my interviews said that they need a contact in the city hall or state government who can respond to their needs.
3.1. Present-Day Development, Civil Society, and Politics

3.1.2 Community Associations

Turning again to Figure 3.1, I highlight the red building depicted prominently in the center: this is the community association (ASSOCIAÇÃO). Most rural communities have community associations, which exist to mobilize citizens for collective goals, especially related to water, health, education, and roads. Community associations constitute one quarter of all non-profit organizations with an average of 22 community associations per municipality in the state of Ceará (IBGE, 2012). In my fieldwork experience, I found that most municipalities had 30 or more community associations, depending on population and population density.3

The existence of a registered association is required for a community to enroll in many government development programs.4 Associations are responsible for community-driven development initiatives, such as petitioning local government officials for health clinics, mobilizing the community to clean a local school or build rainwater cisterns, helping rural workers apply for retirement pensions, and enrolling the community or its members in programs administered by the city government.5

3In her in-depth study of Itapipoca, a medium-sized municipality in Ceará with 70,000 voters, Medeiros (2012) finds that there were over 180 active associations in 2012 according to the president of the municipal federation of community associations. In a survey of civil society organizations in the state of Bahia in 2004, researchers found that almost half of all organizations (1821 in total) were community based; 667 were rural community associations and 177 were urban community associations. The rest were local cooperatives (321), professional unions (277), or philanthropic (208) (Teixeira, 2008, p. 61).

4Projeto São José - Saint Joseph Project (PSJ), a program developed through a partnership between the state of Ceará and the World Bank, has been one of the most important state development programs since the 1990s. It was responsible for distributing rural water supply systems, tractors and other collective farming equipment, electrification, and numerous other collective rural development resources. See Almeida (2003) for a description of PSJ and variation in its implementation depending on community association characteristics, and Khan and Silva (2005) for the impact of PSJ on local social capital.

5Community associations and their members may also participate in water basin meetings that discuss water management at a scale that spans municipalities, though they often have very little influence (Taddei, 2005).
Organized community associations provide a critical link between marginalized communities and the state. Many rural communities are very isolated; one community in my survey sample is 50 kilometers from the municipal city center. It is challenging for citizens to reach out to the government as well as for the government to get information about citizens. Associations can give a voice to isolated rural residents and enable the state to get information and target services to marginalized communities.\footnote{Similarly, Hummel (2017) describes how organized groups of informal workers in La Paz, Bolivia interact strategically with the government. She argues that governments actively encourage and provide selective incentives for workers to organize because this reduces transaction costs for the government. Organized groups provide a clear bargaining unit, which in her case is used for bargaining over regulation, legalization, and enforcement.}

Community associations and other non-governmental organizations are not seen as substitutes for the state, instead they supplement the work of federal and state bureaucracies and provide local expertise, flexibility, and proximity to local populations (Lopez and Abreu, 2014).\footnote{Some scholars even refer to these associations as “development associations” due to their critical role in accessing development programs (Ansell, 2014), though I only ever heard the associations referred to as “community associations” or a similar term highlighting the relationship to the specific community. See additional analyses of community associations in urban areas of Brazil (Lopes, 2005; Perlman, 1979; Gay, 1990), overviews of the role of social organizations and other NGOs in Brazil (Avritzer, 2007; Reis, 2013), and data on the number, types, and governmental transfers to NGOs in Brazil (Lopez and Barone, 2013; IBGE, 2012).}

Community or neighborhood associations are an important feature of local social life and development in Brazil. Community associations exist in most rural communities, and the requirement that many local development programs pass through registered community associations has undoubtedly helped communities to overcome collective action problems that would otherwise have inhibited organization.

A survey of civil society organizations in the Northeast Brazilian state of Bahia found that organizations seek to obtain benefits for their members and engage in collective action to pressure politicians (Teixeira, 2008, p. 147), and members can discuss community needs and encourage the association president to pursue these resources. Most organizations seek to maintain relationships
with the mayor’s office and city council in order to obtain benefits (Teixeira, 2008, p. 111-113). Many community groups use strategies of protest and personal appeals at the same time to target different politicians, bureaucrats, or organizations and increase their likelihood of success (Taddei et al., 2010). However, similar to other instances of decentralization, variation in the lowest level (here, the rural community associations) has a large impact on the distribution and implementation of development policies (Almeida, 2003). Some associations are very active while others only exist on paper.

Nevertheless, there is significant heterogeneity across community associations, even those within the same municipality. Associations display different levels of activism, transparency, and effectiveness. Some associations have high civic engagement with frequent meetings and regular elections, while community members in other associations have given up having a voice. In some associations, there is high leadership turnover or divisions within the prominent leaders, and in others there is one person who has led for many years.

During interviews, respondents spoke at length about the unity, or lack of unity, among community members and the degree of participation and satisfaction with the association. Based on qualitative interviews about the local association, I argue in Chapter 2 that variation in two main dimensions – community activity and leadership strength and unity – can explain why some associations are successful in influencing the government to improve rural services while others are not.
3.1.3 Municipal Politics

Who do residents turn to when they need access to basic services? City council members (vereadores) are the closest and most accessible politicians to most Brazilian citizens, especially in rural areas. Since the mayor’s attention is focused on running the municipality as a whole, a city council member is the primary contact for citizens’ concerns and requests for access to or maintenance of public services.

City council members are elected via at-large open-list proportional representation, and municipal elections take place every four years. Since the entire municipality is the multi-member district for all city council members, candidates can target specific communities or seek votes throughout the municipality. This electoral system has been known to increase pork politics, weaken party ideology and cohesion, and reduce the power of voters to control their legislators, who can simply seek votes in a different part of the municipality in the next election (Mainwaring, 1991; Ames, 1995a). It also creates high numbers of candidates. The median municipality in the state of Ceará had 53 candidates for 13 city council seats in 2016, and the difference between winning and losing a city council seat can be fewer than 5 votes. For more information on the electoral system and voting procedures, see Chapter 6, Section 6.2.

The weeks leading up to municipal elections in Brazil are very lively as candidates for mayor and city council compete for support. Candidates and brokers play jingles from loudspeakers on campaign trucks, advertise on local TV and radio stations, hold rallies, and distribute pamphlets with the picture, number, and party of the candidate for voters to reference in the voting booth. Candidates select a nickname for campaigning, such as “João of the water truck” or “Adriano of the ambulance,” to emphasize service to the community.

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8The pamphlets are known as santinhos políticos (Viana, 2009). The name translates as “political prayer cards,” which may refer to their similarity with cards of Catholic saints that were distributed in the past by churches.
3.1. Present-Day Development, Civil Society, and Politics

With four times as many candidates as seats in the median municipality, and one vote per citizen, residents are faced with a confusing, important decision as the election approaches. How can voters, particularly those in small rural communities, get information about candidates and other political activities? The primary sources of information and influence in vote choice are personal and familial networks.9

Scholars studying the dynamics of information sharing in Brazilian neighborhoods have documented the role of local opinion leaders and informal social networks in disseminating factual, specific information (Smith, 2016). Both facts and rumors about who is planning to vote for whom and which leaders are supporting which candidates circulate constantly in the local grapevine, known colloquially as the “râdio-peão.”

In particular, community associations and other local groups help to disseminate information. Leaders of these groups are centrally placed to communicate vertically with candidates and horizontally with leaders of other communities in the municipality. They share this information during regular monthly group meetings and hold special meetings during campaigns to highlight specific candidates. Since community associations exist to support collective benefits for the entire community, most families in the community have at least one family member who regularly attends association meetings.

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9Brazilian voters also use heuristics such as party, gender, race, occupation, and religion (Boas, 2014).
Most associations participate in politics and electoral campaigns. The geographic areas of a community association and the electoral precinct often overlap due to the spatial isolation of rural communities, and association leaders may encourage members to endorse a particular candidate (Holland and Palmer-Rubin, 2015). In the same survey of civil society organizations in Bahia mentioned above, 84% of organizations were active in politics. They were involved primarily by endorsing candidates and guiding their members’ vote choice (26% of all organizations), monitoring elections to avoid fraud (14%), and facilitating debates between candidates in front of their organization’s members (13%) (Teixeira, 2008, p. 141).

Leaders may remind group members of the benefits of coordinating their vote as a precinct to have a “representative” in municipal government who can help them gain access to resources within the municipality and in other levels of government (Reis, 1988).10 Similarly, candidates value their relationship with association leaders who serve as “an entrance to the community” (Lopez, 2004).11

Community members and association leaders are also active between elections in protesting on the radio and visiting the city hall to make public and personal appeals to city council members. Most requests to city council members were for public services and other resources that should have been provided by the municipality and were their right but that nevertheless were absent. In a common example, the pump on the community well breaks; the well was installed and is supposed to be maintained by the municipal government. Active association leaders and members sought out city council members via radio protests or personal visit to demand that the pump get fixed. Many of the challenges faced by rural communities reflect poor performance by municipal bureaucrats.

10City council members reported that even though they have limited influence on the distribution of resources, voters believe that city council members are most able to solve their problems (Medeiros, 2012, p. 153-154). City council members therefore spend their own personal resources or spend significant time seeking out resources on behalf of their constituents (Medeiros, 2012, p. 172).

11Translation by author.
3.2 Origins of Community Organizing

The lack of service provision was not the fault of city council members, whose primary job is to discuss municipal laws and budget. But, in the absence of any other way of being heard, community leaders and members sought out city council members to act as intermediaries to solve basic day-to-day problems.

Medeiros (2012) conducted an in-depth study of city council members in Itapipoca, a medium-sized city in the interior of Ceará, and of the 10 council members surveyed, 100% reported a strong influence of community associations and voters on their legislative behavior. Almost all (90%) said that community meetings and visits were a key part of their political campaigns and that constituency service towards communities and individuals requires much of their time, and almost all (90%) reported a strong influence of local radio (Medeiros, 2012).

Associations therefore play an often influential role both before and between elections in sharing political information, mobilizing and coordinating support, and shaping voting behavior and political participation.

3.2 Origins of Community Organizing

The previous section depicted numerous ways that community organizing, especially through community associations, impacts the distribution of public services, the implementation of development programs, political behavior, and electoral outcomes.

The discussion begs the question: how did communities become the way that they are? Why did associations form? Why do some communities have strong leadership or high activity and others do not?

12 They attributed less influence to the Municipal Audit Office – Tribunal de Contas do Município (70% saying strong influence, 10% saying some influence), the mayor (50% saying strong influence, 30% saying some influence), unions (50% saying strong influence, 20% saying some influence) (Medeiros, 2012, p. 172).
I point to the combination of two separate but interrelated processes: state-driven processes that incentivize the creation and/or formalization of collective actors, and society-driven processes involving local leaders, trust, and social sanctions to achieve collective action. I agree with Fox (1996), who writes about rural Mexico, “Associational life does not unfold in a vacuum: state or external societal actors can provide either positive incentives or negative sanctions for collective action” (p. 1090). I argue that most community associations in Brazil were created as part of a push in the 1990s toward state-society partnerships for local development, and many of these associations grew out of existing informal community organizations.

To understand why some areas had already developed norms and practices of community organizing, while others had not, I have identified two main explanations in the literature on social movements that focus on 1) grassroots contentious collective action and 2) historical patron-client relationships.  

These explanations map onto two (overlapping) schools of thought that focus on the role of “external agents” and “windows of opportunity” in facilitating collective action (Abers, 2000, p. 136-139). The first explanation is an extension of arguments that external agents are necessary to bring financial and technical resources that reduce the cost of collective action; I focus on the role of the Catholic Church and land reform movement in mobilizing communities in the 1960s-1990s. The second explanation is an extension of arguments that windows of opportunity are necessary to reduce the costs of collective action; I focus on the role of competition among

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13 Additional explanations include responding to state aggression, the withdrawal of the state from public goods provision, reacting to environmental threats, and rallying around a common pool resource or scarce public good (Ostrom, 1990; Hirschman, 1984; Davies and Falleti, 2017; Braga and Barreira, 1991). In my case, the argument about response to aggression by the state and/or powerful landowners is included in my explanation about grassroots contentious collective action. The role of environmental threats and common pool resource governance are fairly limited in my case, though they may certainly have played some role. For example, the environmental threat of drought is fairly large and constant throughout the state, and most rural citizens were tenants on large land estates who relied on their patrons for most resources.
3.2. Origins of Community Organizing

landed elites in weakening entrenched patron-client relationships that characterized local politics in Brazil for centuries.\textsuperscript{14}

I study historical factors for two reasons. First, prominent scholars have advanced similar arguments after conducting studies focused specifically on understanding the origins of community organizing. They explain features of present-day social organization by studying pre-existing power relationships.\textsuperscript{15} A full study of this important topic is out of the scope of this project, so I rely on rigorous, well-regarded secondary sources.

Second, my qualitative interviews suggest that historical factors drive present-day behavior. During fieldwork in rural communities, I asked residents whether they perceived their community to be very organized and active, or not; a follow-up question asked why they thought this was the case. Essentially, the only answer that I received in both organized and weakly organized communities was that they “had always been this way.” Respondents in communities with strong, active leaders said that their community had always had a tradition of strong leaders, who then provided role models for later generations. Respondents in communities with active community members reported that people had simply always been involved in the association, and there was just a habit of participation and expectation that one’s neighbors would also participate.

I start with the role of state-society partnerships in formalizing community dynamics and then discuss the origins of those dynamics.

\textsuperscript{14}These theories have been used to explain variation in regional outcomes, for example between Northeast Brazil and Southeast Brazil (Wolford, 2003), but they can also be applied at the micro-level. While an entire municipality may have initially been under the control of the same patron or dominant family, different communities or farms emerged over the years and can help to predict the present day organization of community members. Many countries have gone through land redistribution schemes, and while the locations of religious and land-rights activism are not random, they tend to have occurred at least a decade before.

\textsuperscript{15}I draw on work by Putnam, Leonardi, and Nanetti (1993) and Scott (1972), as well as prominent Brazilian studies by Leal (2009 [1949]) and others.
3.2.1 State-Society Partnerships

Why do community associations and similar civil society organizations exist as institutions? I focus on the role of state-society partnerships, which incentivized the creation of community associations in Brazil during the 1990s and afterward.

I do not seek to explain variation in the creation of associations with this explanation, since the potential for state-society partnerships was constant throughout the state. I believe that variation in the existence and activity of associations is better explained through historical explanations of the origins of community organizing. State-society partnerships formalized existing community organization or mobilized latent organizing interests; the origins of community organizing are explored in the next subsections.

Across many contexts, state-society partnerships have played a role in creating local civil society organizations and facilitating collective action. Many governments have decentralized their development policies and partnered with local NGOs to implement projects, with varying success. Some argue that state-society partnerships fostered collective action, while others argue that the institutionalization of collective groups stifled grassroots mobilization or had no impact (Brinkerhoff and Brinkerhoff, 2011; Nogueira, 2004; Foweraker, 2001; Abu-El-Haj, 2000; Braga and Barreira, 1991).

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17For example, the Bolivian government in 1994 decentralized public goods provision to the municipal and imposed a requirement of participatory governance involving neighborhood councils, school councils, and local oversight committees (Ley de Participación Popular), and it registered over 15,000 grassroots territorial organizations such as neighborhood associations, indigenous organizations, and peasant unions (Davies and Falleti, 2017). They find that the law had no impact on local community participation.
3.2. Origins of Community Organizing

There is evidence from around the world that the introduction of development projects to create participatory bodies and neighborhood associations tends to reinforce whatever social organization already existed. In communities with pre-existing concentrated elite structures, participatory associations are likely to reinforce, legitimize, and even increase power and resource inequalities in the community.¹⁸

In Brazil, active associational life essentially did not exist until the early 1980s.¹⁹ There were very few active associations, and the associations that did exist were primarily focused on recreational activities (Avritzer, 2009b). In a 1973 study, a researcher found that 93% of poor Brazilians did not participate in civic or political activities.²⁰ There are two primary state-society partnerships that spurred the formalization of existing community groups or mobilization of previously weakly organized communities: local development programs and participatory budgeting. The first program is most relevant for my case in Ceará, though the second plays an important role in other parts of Brazil.

During the 1990s, governments at multiple levels (municipal, state, federal) began to require the existence of formally registered associations for communities to be eligible and enroll in local

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¹⁸A large literature looks at elite capture and development programs (Sheely, 2015; Rusca et al., 2015; Lund and Saito-Jensen, 2013; Mansuri and Rao, 2012; Agrawal and Gupta, 2005; Platteau, 2004; Platteau and Gaspart, 2003; Cleaver, 2002; Bardhan and Mookherjee, 2000; Agrawal and Gibson, 1999; Schönewälder, 1997). Many of these works argue that elites can capture both the decision-making spaces such as community associations as well as distributional outcomes such as diverting development projects or stealing funds. These coercive elites can force members to elect them to association leadership positions and use this platform to request additional resources. These resources are likely to benefit the leader him/herself, though they may include benefits for community members as well. Others push back on this and argue that strong, central figures are involved in community-driven development in different ways. They differentiate the scenario involving coercive elites, called “elite capture,” from one involving opinion leaders, called “elite control” (Fritzen, 2007; Dasgupta and Beard, 2007). See the description of Leadership Strength and Unity in Chapter 2.

¹⁹In a survey of organizations in the state of Bahia in 2004, Teixeira (2008, p. 80) finds that community associations essentially did not exist until the 1980s (only 11 of 844 community associations were founded before 1980); the vast majority were founded in the 1980s (25%) and the 1990s (57%).

CHAPTER 3. POLITICS AND SOCIETY IN RURAL NORTHEAST BRAZIL

development programs.\textsuperscript{21} Formalization of the association involves registering with the government as a non-profit organization (\textit{organização sem fins lucrativos}, which is the equivalent of a 501(c)(3) in the United States) to obtain an organizational tax ID number (known as \textit{Cadastro Nacional de Pessoas Jurídicas} - National Register of Legal Entities (CNPJ)).\textsuperscript{22} Associations must pay a small annual registration/tax fee.\textsuperscript{23}

These programs were primarily spurred by members of the Partido dos Trabalhadores - Workers’ Party (PT) as part of food and hunger movements in the mid-1990s (Ansell, 2014).\textsuperscript{24} PT politicians at multiple levels of government started a variety of local development programs that were administered and implemented by civil society organizations, such as milk distribution and small-scale irrigation (Teixeira, 2008; Graziano da Silva, Belik, and Takagi, 2002).

My qualitative interviews and household survey results point to the role of government programs in spurring the creation of the association. When association leaders were asked why the association was created in the first place, most said that an association was necessary (44\%) or beneficial (11\%) to access government or NGO programs or services, while the rest said the com-

\textsuperscript{21}Braga and Barreira (1991) provide a detailed overview of community development and participatory management programs in Fortaleza, Ceará. See Lopes (2005, 220-230) for a rich description of how the proliferation of new associations changed the relationships between associations and city council members.

\textsuperscript{22}Each association must have a statute that specifies association policies. An association must have, by law, a general assembly to make decisions for the association (generally a meeting where group members can vote on issues), an executive body (generally the association leadership such as a president, vice-president, secretary, and treasurer, among others), and a fiscal council (an individual or group in charge of financial and administrative issues). Depending on interpretation of the law, associations must have a minimum of 2-6 members. See Lei 6.015/73, art. 54 in the Civil Code, and Lei 8.906/94.

\textsuperscript{23}The fee varies by municipality, and during my interviews, association leaders did not report that the fee was prohibitively expensive.

\textsuperscript{24}While the PT’s leader, Lula da Silva, would not become president until 2002, his prominence as leader of the labor movement and role in resistance to the dictatorship already put him on the national stage. After Lula lost his first presidential bid in 1989, he and other PT leaders created a progressive policy think tank called the Citizenship Institute, which worked with the UN’s Food and Agriculture Organization (FAO) to draft a national policy for food security that involved partnering with local civil society groups. This theory of social change would underpin many future policies (including Zero Hunger and later on Bolsa Família).
3.2. Origins of Community Organizing

Community simply felt that it was good to organize (32%). Among those citing access to services, most described in a multiple choice response that the services involved water access or water quality (68%), electricity (61%), drought relief (44%), and a specific World Bank – Ceará state local development program called Projeto São José (41%).

The survey results also provide evidence that most associations were created in the 1990s or earlier, well before my household survey (in 2017) and even before the electoral period that I study in Chapter 6 (2000-2016). Association leaders stated that their associations were formed in the 1990s (63%) or 2000s (21%), with a few saying the 1970s (2%), 1980s (8%), and 2010s (6%).

Still, implementation of state-society partnerships varies by local context, and numerous present-day political factors certainly drive variation in the existence and activity of community associations. Avritzer (2009b) studied the development of associational life in four different Brazilian cities and found that the voluntary associations were more likely to exist and be active in cities with participatory budgeting institutions. This specific explanation is more applicable in large cities that adopt specific policies to include civil society organizations in budget and other policy discussions; these policies did not exist in Ceará outside the state capital nor are they as relevant to associational life in rural communities.

25 The remainder did not know (10%) or cited another reason (4%). The sample includes responses from 293 community leaders; see Chapter 5 for more information about the survey.

26 Additional services included pensions for rural farmers (31%), housing (30%), a specific NGO for participatory community water management called Sistema de Saneamento Rural - System for Rural Sanitation (SISAR) (21%), land reform programs through the government agency Instituto Nacional de Colonização e Reforma Agrária - National Institute for Colonization and Agrarian Reform (INCRA) (21%), basic food supplies known as cesta básica (13%), and a milk distribution program (11%).

27 For this question, 208 leaders gave an answer while the remaining 85 stated that they did not know.

28 On the other hand, Baiocchi et al. (2011), building on the dichotomy created by Fox (1994), argue that the implementation of participatory budgeting programs did not lead to the creation of new associations. They argue that it did shift civil society away from demands linked with political loyalty (“clientelism”) to transparent, rule-based claim-making (“associationalism”). Montambeault (2015) takes this argument a step farther by incorporating the configuration of civil society (high or low autonomy) and political competition to predict the outcomes of participatory budgeting policies.
3.2.2 Contentious Collective Action

If state-society partnerships formalize pre-existing norms and practices of community organizing, where do those norms and practices come from? I focus first on contentious collective action.

Across many contexts, scholars have argued that grassroots contentious collective action facilitates community organizing. The establishment of contentious political organizations creates opportunities for future collective action: dense social networks and organizational structures lower the cost of mobilization for other actors. Communities that mobilized in the past for one collective aim can use these social networks and organization for a different future goal (Hirschman, 1984; Tilly, 1984; Tarrow, 2011).

Throughout Latin America, many scholars have studied the role of grassroots organizations of Christian base communities and landless workers’ movements in community organizing and the creation or strengthening of community associations (Teixeira, 2008, p.63-64). In Brazil, these movements arose in part in reaction to local inequality and Brazil’s military dictatorship.

After the military coup in 1964 and following the meeting of Latin American bishops in Medellín in 1968, the Brazilian Catholic Church experienced a great transformation and became a prominent advocate for human rights (Mainwaring, 1984). In the 1960s, Comunidades Eclesiásticas de Base - Christian Base Communities (CEBs) were neighborhood groups that were initially created so that communities, especially in rural areas, could hold services without a priest. The priests involved in CEBs followed theories of liberation theology, and during the oppressive military dictatorship, CEBs provided a haven for opposition and peasant leaders fleeing prosecution.

Christian base communities catalyzed community organizing and popular leadership in local neighborhoods. Mainwaring (1984) writes:
The base communities have created new forms of popular participation and grass roots democracy. The people participate in meetings to discuss local problems, with all individuals getting a chance to speak... Although the pre-1964 popular movements marked an important presence in the society, they did not have the kind of democratic participatory practices that the base communities have developed... The Church has helped create a sense of community among the popular classes. This sense of community need not lead to political organization, but it is still important as a way of sharing lives and establishing friends... The political self-confidence of many popular leaders started to develop through experiences in base communities and other Catholic organizations.

CEBs became involved, among other actions, in protecting landless peasants across Brazil and partnered with other organizations such as unions and neighborhood associations (Mainwaring, 1986). CEB religious leaders espoused ideals of mutual aid, solidarity, and collective action; they urged local residents to work together instead of relying on powerful landlords or politicians (Ansell, 2014). CEBs involved collective meetings among community members, usually in local chapels, that discussed religious, social, and political issues.

Partially building on the opposition and human rights movements supported by the CEBs, the Movimento dos Trabalhadores Rurais Sem Terra - Landless Workers’ Movement (MST) was founded in 1985. It grew out of numerous land reform movements such as rural trade associations of the 1950s and 1960s, the Peasant Leagues founded in 1955, and the Catholic Church’s Pastoral Land Commission in 1972 (Wolford, 2003).

The MST worked by organizing land occupations on unproductive lands. MST activists came from across the country to occupy different properties, and they traveled all around to discuss

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29 Braga and Barreira (1991, p. 141-259) provide a detailed description of the creation of neighborhood-based associations in three different favelas in Fortaleza, the state capital of Ceará. All were involved with CEBs or other religious organizations during their creation.
land rights with poor communities and recruit new members. Once they occupied a piece of land, MST activists waited until government workers and/or the landlord came to the property, and the interactions were often violent. Many occupations succeeded, through the government land reform agency (INCRA), in turning the land rights over to local residents and MST activists.\(^{30}\) As the movement grew, the MST was responsible for identifying properties, negotiating the land occupations, and mediating the relationship between settlers and the federal government.\(^ {31}\)

The strength of local MST movements (and ultimately modern-day community organizing) was also correlated with local state capacity; Wolford (2010\(^{a}\)) finds that the lack of federal bureaucratic capacity in certain regions and during certain periods has led to the MST filling that gap. Instead of the federal government using criteria to select properties and identify beneficiaries, the MST has this power.\(^ {32}\)

In both the past and the present, the MST is actively involved in what Tarlau (2013) calls “co-production,” which is the “active participation of civil society actors in the provision of public goods.” The federal agency INCRA is responsible on paper for selecting land for settlements, identifying prospective settlers, and distributing resources such as local development projects, public services, and access to credit. However, in practice it only fulfills these responsibilities when the MST forces it to do so (Wolford, 2010\(^{a}\)). Focusing specifically on activities related to education, Tarlau (2013) writes that MST activists mobilize others (community members, local leaders, bureaucrats, teachers) to facilitate the involvement of civil society in policymaking. This dynamic is very similar to the “post-election” part of my theory where organized communities must get

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\(^{30}\)INCRA was founded in 1970 to oversee a land redistribution program carried out by the military dictatorship.

\(^{31}\)See excellent work by Wolford (2010\(^{b,a}\), 2003) and Albertus, Brambor, and Ceneviva (2018) for more information on the MST movement.

\(^{32}\)This is similar to a myriad of cases throughout the world where insufficient state capacity leads third party actors to step in and gain strength and legitimacy. However, these third party actors, including civil society organizations, have their own agendas and criteria for distributing resources, which often deepens existing inequalities.
3.2. Origins of Community Organizing

the attention of local politicians and pressure them to provide public services (that the politicians should have been providing anyway).

Taking a step back, I follow prominent scholars in arguing that both the CEB and MST movements encouraged collective discussion of local problems, developed the leadership skills of local opinion leaders, and urged political participation (Wolford, 2003). Their activities led to variation in community organizing across the Brazilian countryside, and in many places government actors and politicians only followed through on their responsibility to provide public services when pressured to do so.

I believe that this explanation applies most to the community as a whole: I predict that present-day communities that had CEBs or were involved with MST are more likely to have strong community organizing. I expect that this is especially true of communities that are recognized by INCRA, since they benefit from additional development programs provided by INCRA that may further incentivize group members to maintain the community associations needed to access those benefits.

Still, individuals trained as leaders at CEBs or MST settlements are likely to have moved around over time. Wherever they end up, their present-day communities can benefit from their experience and expertise in community organizing, especially if these individuals are involved in associational leadership (Hirschman, 1984).

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This of course raises the same question: why was the MST involved in some places but not others? Why do some communities/areas have more activism and land invasions than others? And so on. I point readers to work by Hidalgo et al. (2010) and Albertus, Brambor, and Ceneviva (2018), among others.

One could argue that communities recognized by INCRA no longer face a threat, which could lead organizing efforts to demobilize. In the absence of the state-society partnerships described above, this would likely be true. However, since associations are required for access to both general government development programs and INCRA-specific programs, the mobilization is more likely to continue.

Hirschman (1984) makes a similar argument in his discussion of “The Principle of Conservation and Mutation of Social Energy” (p. 42-43): “...when we looked into the life histories of the people principally involved [in grassroots movements without present aggressors], we found that most of them had previously participated in other, generally more ‘radical’ experiences of collective action, that had generally not achieved their objective, often because of official
3.2.3 Historical Patron-Client Relationships

A second explanation is that historical patron-client relationships and land inequality shape long-standing civic traditions (Putnam, Leonardi, and Nanetti, 1993). The rural countryside of much of Latin America was historically divided into large estates, and the poor farmers who lived on the property and worked the land were dependent on the landowner for their livelihood and basic services.

Brazilian society has had extreme inequality dating back to the colonial period, and political institutions reinforced a strong hierarchy of wealthy landowners and poor farmers/laborers. Graham (1994) writes about Brazil, “All sections of the country were profoundly shaped by a steady focus on family and household, a latent tension between poor and rich, a keen sense of social hierarchy, and the constant practice of exchanging benefits for obedience” (p. 11). Northeast Brazil especially was characterized by large cattle ranches in the semi-arid regions and small and large cotton estates in the area closer to the coast, and the region exhibited strong political and economic inequality (Chilcote, 1990; Graham, 1994).

Landowners often controlled the votes of their dependents (Baland and Robinson, 2012; Leal, 2009 [1949]; Carvalho, 1997). In Brazil, this was known as the “voto de cabresto,” which translates essentially to the “herd vote” or “vote corrals” (Pereira, 1997; Leal, 2009 [1949]). A landowner or rural boss was often referred to as a “coronel,” which was not a literal military position but a figurative position reflecting the power of the boss.

The coronel was a member of a larger political network involving state and federal politicians, and these rural bosses (coronéis) acted as vote brokers for the politicians above them in exchange

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repression. It is as though the protagonists’ earlier aspiration for social change, their bent for collective action, had not really left them even though the movements in which they had participated may have aborted or petered out.”

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36The word cabresto means animal halter, with the implication that landowners led their dependents to the polls and controlled their movement and vote. It is a pejorative way to describe bloc voting.
3.2. Origins of Community Organizing

for patronage and other favorable policies (Hagopian, 1996; Pereira, 1997; Leal, 2009 [1949]). Rural workers worked on their boss’s estates (known as fazendas or latifúndios) and received housing and sometimes a small plot for subsistence farming in exchange for loyalty during elections and violent disputes with other landowners (Graham, 1994, p. 20–23). The boss, known as a patron (patrão) sought to create a large following of workers and their families (clientela); the patrons with larger clienteles had more power vis-à-vis judges, the police, and politicians and were able to exercise even more control over their dependents (Graham, 1994, p. 22).

The transition to democracy in the 1980s and 1990s largely preserved the previous political hierarchy, though the political dynasties of the most powerful elites (coronéis) had weakened in some states and not others, depending on competition within the state (Limongi, 2015; Ames, 2001; Samuels and Abrucio, 2000). In general, the state of Ceará was split among multiple competing elites, which weakened their power, but strong family dynasties continue within municipalities in most parts of the state (Ames, 2001, p. 286-7).

I argue that elite competition within municipalities likely explains variation in present-day community organizing. In municipalities with higher concentration of land and power, elites were better able to quash grassroots organizing and police their residents (often with private militias). On the other hand, in municipalities with competition among multiple elite families, the elites would

37 The seminal work by Leal (2009 [1949]) entitled “Coronelismo, Enxada, e Voto” or “Coronelismo: The Municipality and Representative Government in Brazil” provides an extensive description of political institutions and the transition to representative government in the early 1900s. See also Carvalho (1997), who makes important distinctions between the historical network of rural bosses and modern networks of patronage and clientelism when he defines the concepts of coronelismo, mandonismo, and clientelismo.

38 The landowners were effectively mini-autocrats in their home regions and controlled security, the local economy, and public goods provision such as water, roads, railroads, access to health care or schooling, etc.

39 Certain systematic factors may have reduced the ability of landlords to control their dependents’ votes, though they cannot explain variation within the state or within municipalities. For example, some argue that the introduction of the Australian ballot in 1958-1962 reduced the ability of landowners to manage their tenants’ votes (Baland and Robinson, 2012), though others argue that the introduction of the ballot amounted to suffrage restriction due to its literacy requirement (Gingerich, N.d.).
have struggled to coordinate and fight back against land invasions and other forms of community organizing, which may have allowed for more openings (Chilcote, 1990).40

A clear example of this can be found in Chilcote’s (1990) comparative study of two municipalities on opposite sides of the São Francisco River in the rural Northeast. He found that political participation was quite low in the municipality (Petrolina – PB) that had one dominant family that controlled political and economic life and was characterized by closed and manipulative politics. Petrolina residents cited “personal contact with an influential councilperson or state or federal legislator” as the most common action in response to unjust policies. On the other side of the river, political participation was much higher in the municipality (Juazeiro – BA) that had a strong rivalry between multiple prominent families and was characterized by open and competitive politics. Juazeiro residents cited protest as their most common action in response to unjust policies.41

The organization and social structure within Brazilian landed estates also contribute to present-day variation in community organizing. For example, Wolford (2003) describes an estate named Vento, where the tenant farmers were spatially dispersed, but they would get together periodically for community events and to help different families to bring in their harvest or build a home. Modern community organizing efforts could build on this tradition of collective action and reciprocity. On the other hand, she describes a large estate named Flora that had a strong social hierarchy that was stratified by occupation, and workers rarely interacted. Community organizing would be much harder to accomplish in an environment without a history of collective action and with weaker social ties.42

40 As Albertus, Brambor, and Ceneviva (2018) point out, the ability for landowners to mobilize may depend on the isolated or systemic nature of local land invasions and collective action among landowners.

41 In the future, I hope to empirically measure elite competition by analyzing historical tax records and voter registration. Chilcote (1990, p. 69) uses this method with tax records and voter roles from 1903 to characterize historical power structures in the two municipalities.

42 Wolford (2003) uses these examples to explain variation in the way that local citizens experienced and interacted with the MST movement. She writes that the Northeast, where Flora was located, was dominated by salaried rural
3.3 Conclusion

This chapter provides an overview of water access, community associations, and municipal politics in my case of Ceará, Brazil. I highlight the high number of public services on which rural communities rely, and almost all of these services require the involvement of local politicians for investment and maintenance. I detail the often essential role of associations in accessing government development programs. I also give an overview of municipal politics and expand on the role of associations in interacting with political campaigns, providing political information, and mobilizing voters.

Why do associations exist as institutions? Why do we see such variation in community organizing? I detail the creation of many community associations through state-society partnerships, and I present two main explanations for the origins of community organizing. I describe historical grassroots contentious collective action and patron-client relationships in my case with the aim of understanding why we observe so much variation in community organizing in present-day Ceará.

The explanations for community organizing are not independent or mutually exclusive, and the origins of community organizing are endogenous to many interrelated political, social, and geographical factors. Nevertheless, they provide a starting point for future work to understand the origins and present-day variation in community organizing in Brazil and throughout the developing world.

workers, while the South, where Vento was located, had primarily small family farmers. These differences are generally due to differences in geography and the types of crops produced in the different regions. This explanation is a micro-level application of prominent macro-level theories that use colonial power structures (extractive vs. inclusive) to predict modern political institutions and economic development outcomes (Robinson, 2013; Acemoglu, Johnson, and Robinson, 2001). First, her study points to fact that the MST and patron-client explanations are interrelated, as most historical explanations are. Second, she studies regional variation, but I believe that variation in fazenda institutions likely also existed within the Northeast. For example, Carvalho (1997) writes that there were many different types of patrons, such as landowners, industrialists, business people, doctors, and even priests, that coexisted and shaped the voting behavior of their followers in different ways.
Chapter 4

Trading Favors in Practice:

Fieldwork and Comparative Case Studies

Implementation of public policies as essential as water can vary drastically between neighboring communities, and this is especially true in Northeast Brazil. Why do some communities have access to essential services, such as water, and neighboring communities do not? How do citizens influence the distribution of public services? To answer these questions, I spent 18 months in Brazil where I conducted extensive qualitative and quantitative research in hard-to-reach rural communities. I put significant time and effort into developing connections with local scholars and learning from rural residents, and this enabled me to derive and test my original theory through an iterative process of careful interviews and large-scale household surveys.

What does “trading favors” look like in practice? In this chapter, I describe my fieldwork and theory development process, and I illustrate how my theory plays out in the case of Northeast Brazil outlined in Chapter 3. I draw on qualitative interviews that I conducted with rural residents, local leaders and politicians, state bureaucrats, and academic experts (n=104 interviews) that took

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place in April 2016, April 2017, and August 2017. During my interviews, I sought to understand how rural residents and community leaders perceive their lives and their communities and discern what strategies they perceive as successful.\(^1\)

The majority of interviews, especially those conducted in April 2016 and April 2017, helped me to generate and develop my theory, identify a realistic typology of community organizing, and generate testable hypotheses to evaluate with other methods (Mosley, 2013). They also informed the creation of survey instruments used in my main household survey in June-September 2017 that I use for hypothesis testing in Chapter 5. The case studies rely on the interviews that I conducted with rural households and local leaders in August 2017 (n=30 interviews in 3 municipalities).\(^2\)

The sub-municipal case studies illustrate the diverse ways by which my theory unfolds on the ground. I use these interviews to describe communities within a typology of community organizing and explore the theoretical mechanisms through case studies of neighboring communities. I do not use the case studies for hypothesis testing. Since I primarily used the interviews for theory development, I also am not able to systematically code the responses. Instead, my goal is to show that the dynamic of trading favors occurs in some communities and not in others and provide qualitative descriptions of the underlying mechanisms.

I begin by outlining the fieldwork and iterative process that enabled my theory development and extensive original data collection. I discuss the multiple rounds of interviews and household

\(^1\)I used a relational interviewing style and followed an interpretivist approach to understanding the qualitative data. See the description of relational interviewing in Fujii (2017, p. 74).

\(^2\)With financial and time constraints, I had to visit multiple communities within the same day. This severely limited the number of interviews that I could conduct in each community. Since the interviews were conducted with a relatively small number of respondents in a short period of time, they provide greater external validity and illustrate the wide variation within even one municipality; however, they lack the depth, complexity, and reliability that more immersive or ethnographic work would provide. An extension of this project will find a middle ground: I will conduct systematic qualitative interviews that will enable me to do more rigorous process tracing of causal mechanisms. This will involve identifying a specific sample of communities, probably based on the survey data from 120 communities described in Chapter 5, and interviewing many more people in each community.
surveys as well as reflect on my personal participation in data collection and some ethical considerations. I continue with the case studies drawn from my qualitative interviews and outline the sampling process before describing each community.

### 4.1 Fieldwork and Theory Development

I spent most of 2016-2017 (18 months total) living in Brazil and conducting fieldwork. I am fluent in Portuguese, and I conducted qualitative interviews, wrote and oversaw original household surveys in rural communities, and designed, launched, and managed a large-scale field experiment.

My theory emerged from extensive observation and consultation with rural residents, leaders, and politicians. I was able to develop the nuances in my theory through rigorous micro-level fieldwork that was sensitive to local conditions, and I sought to learn from local residents instead of imposing outside ideas upon them. With the support of my advisors, I started with two contacts at the Fundação Getúlio Vargas in Rio de Janeiro in January 2016. Through countless meetings in Rio and in Ceará’s capital of Fortaleza, I created a strong research network of faculty and students at multiple universities, bureaucrats at state agencies, and civil society leaders.

In my fieldwork, I aimed to apply the theories I learned through close reading of the literature to the complexities and realities of rural Northeast Brazil. I wanted to ask big questions about politics and society, and I went to the field to probe my assumptions, change my mind, and learn new ways of seeing complex relationships between community groups and local politicians. During interviews, respondents often asked why I traveled all the way to their isolated community to speak with them. I explained that I could sit in New York reading books about politics and society in Brazil, but I could never learn as much as I could by visiting their homes and asking them about their personal experiences. They agreed that this was probably true!
I developed and tested my theory through an iterative process, where in-depth interviews informed what concepts I wanted to test and what data to look for. I derived my theory from interviews with a smaller sample of communities, and then I tested the hypotheses on a much larger, wider sample. Instead of maximizing the number of individuals in interviews and surveys, which would have been logistically easier, I visited a large number of communities to better understand community-level variation. I provide more detail about this process below.

2016: Exploratory Interviews and Small Pre-Election Household Survey

I began my fieldwork with interviews in the state capital and rural communities, which enabled me to revise the theory that I had outlined in my dissertation proposal. Drawing heavily on the collective action and distributive politics literatures, I identified in the proposal a typology of “horizontal” vs. “vertical” communities. The dimensions refer to the social and power relationships within rural communities and their community associations. My proposal defined the types as follows: horizontal groups tend to have higher inter-household trust and regular leadership turnover in their community associations; vertical groups tend to have weaker inter-household trust and monopolistic, constant leadership in their community associations.

In my proposal, I predicted that horizontal groups were more likely to pursue non-clientelistic strategies, such as pooling their communal resources to fix wells and buy water independently and/or appeal to politicians for non-contingent provision of public services through collective protest. On the other hand, I predicted that vertical groups were more likely to pursue clientelistic strategies of bloc voting in exchange for contingent service provision. I expected that clientelistic strategies would be more effective in municipalities with high competition; as such, vertical groups would have higher service provision than horizontal groups in municipalities with high political competition for mayor. The opposite would be true in municipalities with low competition.
To explore my proposed theory, I visited 27 different rural communities in four different municipalities in April 2016. I selected the municipalities based on variation in mayoral electoral competition in 2012 elections and regional water access. I selected pairs of neighboring municipalities (one with high and one with low margin of victory for mayor in 2012) in the central and southern regions of the state. The central region has low rainfall and intense water scarcity, while the southern region has higher rainfall and a more robust groundwater aquifer.

Within each municipality, I selected communities that would provide variation in concentration of votes at the community polling station for city council members in 2012. I was interested in seeing whether horizontal or vertical communities (which I could not identify prior to visiting them) were more likely to pursue bloc voting, and whether bloc voting was associated with public service access. Within communities, I selected households based on a random walk from the center of the rural community (usually a church or soccer field), and many residents directed me to the community association leader via a snowball sampling process.

My research assistant Aline and I conducted the interviews together in Portuguese. We deliberately kept the questions very open-ended and tried to make the interviews feel more like a conversation. We did not necessarily ask each question in each interview, or we asked questions in differing orders, depending on the flow of the conversation. As these were my first visits to rural communities in Ceará, my main goal was to learn from local residents about their lives.

I designed a semi-structured interview guide with four key modules: 1) general household information to ease into the conversation (occupation, length of time in community, relationship to neighbors, basic demographics), 2) water sources to learn about water access and begin with an objective, non-sensitive topic (main sources, maintenance, responsibility, drought relief), 3) social

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3Aline had recently completed her bachelor’s degree in social work at a university in Fortaleza, Ceará, and she used qualitative interviews for her undergraduate thesis. We met through a mutual friend who was a Ph.D. candidate at the Federal University of Ceará studying political science and was Aline’s undergraduate advisor.
relationships and community associations (activities, meetings, leadership, elections for leadership, endorsement of municipal political candidates or candidacy of association leadership), which eased into 4) political topics (campaigns, candidate actions and platforms). Most respondents talked about municipal politics and elections before the association module and certainly by the political module, and we perceived that these topics were interrelated in a complex way.

I quickly learned that communities did not fit easily into the typology from my proposal. Back in our hotel room in the evening, Aline and I would try to classify the communities that we had visited that day. Many communities had constant leadership over time, with the same person or family leading the association. My proposal typology would have classified them as “vertical” communities prone to elite capture, and it would have predicted that vertical communities had lower public service access. However, I found that in most cases, having constant leadership seemed to be good for public service access, since the person had strong connections and a knowledge of bureaucratic processes. In most cases, this person was re-elected by very active community members for doing a good job. I felt that I could no longer compress community activity and leadership characteristics into a single dimension.

I also found that the dichotomy of “clientelistic” or “non-clientelistic” strategies did not clearly map onto bloc voting behavior. I was surprised to find that many respondents reported choosing to coordinate their voting behavior and intentionally using their bloc vote to have more power in their relationships with politicians. In many cases, they perceived it to give them more agency in local politics, rather than take it away. Not only that, but the use of bloc voting as an intentional strategy was especially prevalent in communities with high trust and participation in the association! While the factors that I had previously identified - trust and associational activity, leadership turnover, political ties through bloc voting - did seem to be key factors, the stories that rural residents told
me about their communities suggested that they worked in very different ways than my proposal had predicted. I felt that I could no longer define bloc voting within a clientelistic framework.\textsuperscript{4}

I spent the next few months digesting the information from my interviews and revising my theory. I drew on my interview experiences to write a survey instrument that could capture the concepts of community organizing, leadership, political relationships, voting behavior, and public service access in a more precise way and test their relationships at a larger scale. With Aline and three research assistants, I piloted the household survey in August 2016. I then revised the sampling strategy and survey instrument based on our field observations during the pilot, and the three assistants from the pilot survey acted as team leaders for three teams of three enumerators.

Before the municipal elections (that would take place on October 2, 2016), Aline and I traveled with the research teams to manage implementation of my original household survey in 104 different communities in early September 2016 ($n = 415$ respondents). I stayed back at the hotel in the municipal center during the day so that my presence as a foreign researcher would not bias the survey findings, and I made observations about the campaign posters and activities in the municipal center during the day and night. I collected pamphlets and photographed campaign flags and candidate numbers painted on walls. My research assistants and I observed many different campaign rallies and speeches and chatted with city residents at restaurants in the evenings.

\section*{2017: Interviews to Refine Theory and Large Household Survey}

My observations during the electoral period and analysis of the survey data introduced additional questions and puzzles, and I conducted more interviews in 7 communities in one municipality in

\footnote{I explain my thinking about the relationship between trading favors, pork politics, and clientelism in more detail in Chapter 1.}
April 2017 to help revise my theory. These interviews were primarily for the EGAP field experi-
ment, and I again conducted the interviews in Portuguese with Aline’s assistance.

Due to the focus of the experiment, the interviews and sampling strategy were based on ground-
water resource management. Still, community associations were a key part of the experiment, since I had learned in 2016 that they were primarily responsible for water management and access-
ing development programs. I didn’t need to ask about politics; most rural residents or association
leaders brought up the involvement (or lack of involvement) of candidates or elected officials –
primarily city council members – in maintenance of their water resources and access to programs.

With a more clearly defined theory and set of concepts, I redesigned and oversaw the imple-
mentation of a larger original household survey in 120 communities during June – August 2017
(\(n = 1990\) respondents). This survey was the baseline survey for the field experiment, and I
describe the sampling strategy and data collection in detail in Chapter 5.

While the survey teams were in the field, I returned to 18 rural communities for additional
interviews in August 2017 to inform the case studies in this chapter. Unfortunately, the logistics
proved to be more complicated than before. During previous interview trips, I traveled with Aline;
we became good friends, and I kept costs low by sharing a room, car, and often even meals with her.
However, she was very busy acting as research coordinator and enumerator for one of the survey
teams as they implemented the household survey in rural communities in other parts of the state.
I did not have the resources to hire someone to accompany me during the travel and interviews,
since their transportation, lodging, food, and stipend would have been prohibitively expensive.

I was fortunate that my interviews could overlap for a week with another colleague’s research
trip to a few different municipalities in the rural interior of Ceará. His research focused on mu-

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5 We selected the municipality because it was the location of the regional headquarters of the state water agency and
a large municipality with water scarcity. We selected communities that used a well and had a community association,
which we identified with the help of staff from the regional state water agency; within communities we selected
households based on a random walk from the center of the rural community.
municipal politics, so his interviews were in urban areas, and I conducted interviews alone in the rural areas. To increase the chances of having a safe, successful trip on a moto-taxi by myself, I asked the hotel owners for personal recommendations of moto-taxi drivers, and I made sure that the drivers were aware that I was traveling with a companion. Still, given the costs and safety concerns, I limited the number of days of interviews and the number of interviews per community.

My interview research design was very creative in identifying a sample in a data-poor environment while also respecting the logistical and financial challenges of rural research. My colleague and I selected municipalities that were appropriate for both of our research projects, and my main criteria was that they were located in the dry, central part of the state. I again selected the communities to have variation in public precinct-level voting behavior in the recent October 2016 municipal election. I created a sample of possible communities that was stratified by number of voters, concentration of voting, and whether the top voted candidate won or lost.

Transportation to rural areas is very expensive, since it takes an hour or longer on single-track roads in mountainous areas to reach many communities. With a limited budget, I maximized my resources by creating the sample of communities then discussing the list with moto-taxi drivers to identify routes that were accessible and that would allow me to visit many different types of communities within the same day. Once in the community, I selected households via random walk and selected leaders via snowball sampling.

These interviews helped me to observe how rural residents and association leaders viewed the relationship between community organizing and access to public services. I asked about relationships within the community (trust between neighbors), the association (participation, activities, leadership selection), and voting behavior (association leader endorsing candidates, campaign activities in community). I again tried to keep the interviews more conversational in order to un-
4.1. Fieldwork and Theory Development

derstand how residents thought about their own communities and see what factors they raised independently as being important for getting access to public services.

In the interviews, I became aware of the specific way that many rural residents perceived bloc voting. Residents in many different communities used a particular phrase about “having a representative” or “having a city council member.”⁶ Residents either said that they did have a representative and described which candidate received the most votes in their community, or they said that they did not have a representative and that residents gave their votes to many different candidates. Even in the communities that did not coordinate their votes, most respondents told me unprompted that bloc voting was a strategy that other communities used to get access to resources.

In field diaries at the end of each day, I attempted to triangulate the responses from residents within each community and consider the variation that I saw between neighboring communities. I researched electoral results to compare to the statistics that rural residents cited about their community’s polling station. I sought to draw tighter theoretical connections about the relationship between community organizing, bloc voting, and public service access.

I went back to the state capital, safe and sound, and spent the last couple months of my time in Brazil talking with bureaucrats at state agencies for water management, agriculture and rural extension, social development, health, and mapping and statistics. I learned more about their programs and tried to identify geocoded data of sub-municipal public service provision.⁷ I returned to the US in late 2017, and it took some time to transition back. I had spent almost two years deep in the details of one specific context, and I now needed to zoom out and distill everything that I had learned. I studied the field diaries and transcripts of the interviews, returned to the academic literature, and had numerous conversations with my brilliant, generous classmates and advisors.

⁶In Portuguese, the specific quotes are “ter um representante” or “ter um vereador.”

⁷I was not able to obtain specific datasets but did learn about some promising avenues of future work, some of which I talk about in the Chapter 7.
I spent January - May 2018 writing, presenting, and refining my theory to focus on the specific concepts of community activity, leadership strength and unity, and bloc voting as defined as vote share in the most voted city council candidate. The revised theory is what appears in this dissertation, and it led to the observable implications that I outline in Chapter 1. In June and July 2018, I identified questions on the large 2017 household survey that could help me to test my hypotheses. After processing and cleaning the survey data in August 2018, I conducted the analysis presented in Chapter 5. To illustrate my theory and the complex ways by which it unfolds on the ground, I selected six communities as case studies that I present later in this chapter.

**Personal Participation and Ethical Considerations**

It is challenging, and often impossible, to observe community-level variation in social and political relationships with administrative data. Studying these topics requires deep knowledge of local conditions and time and effort dedicated to learning from local residents. I had to be creative with the interview research design in a data-poor environment, and the surveys took many months (over three months for the survey in Chapter 5) due to the logistical challenges involved with reaching very rural communities to identify the sample and implement the survey.

My research involved significant personal participation in research design and implementation. I was deeply aware of my status as an outsider during interviews and surveys, and I sought to balance the bias that my presence would introduce with my desire and need to learn from local residents. I took the time to adapt my academic/urban Portuguese language skills to the rural environment and learn local vocabulary and slang. I felt strongly about being actively involved and carefully designing the semi-structured interview guides and household surveys to meet a number of important goals: the question wording accurately captured the concepts I hoped to measure;
respondents understood the questions the same way that I did; and respondents felt respected during the interview or survey and were not left feeling inadequate or bad about themselves.

I therefore was very active in the field. I conducted interviews myself, participated in the pilot survey, and managed teams in the field. I traveled with the teams to rural communities to pilot the survey with the enumerators, and each night we met in my hotel room and discussed each question as a group to get as close as possible to meeting the above goals. I often traveled with the teams while they implemented the surveys, though I stayed back at the rural hotel during the day because my presence would have biased the survey results.

During interviews and survey data collection, I was concerned with respondent confidentiality. I took multiple precautions with data collection and storage (password-protected tablets and data storage, among others) and conducted standard IRB procedures with the enumerators and respondents. In addition, I emphasized repeatedly the importance of respecting respondents and their experiences. While it was natural to discuss the day’s work over dinner at a restaurant in town, it was also essential that my research assistants and I respect interview confidentiality. We limited dinner conversation to general observations about the day’s work and logistics, and we only discussed specific issues or challenging situations when we returned to the privacy of the hotel room. Even though the data and topics were not sensitive, I wanted to respect the respondents and honor the trust that they showed in allowing us into their homes and sharing their personal experiences.

Residents of many rural communities have generously shared their time and knowledge with me, and it is important to me to be honest with them about the impact of their contribution. Many respondents asked if we would be able to directly or indirectly help their community, and the honest answer was no. I hope that my research will ultimately inform public policies that can improve service provision, but any positive impact will be very indirect. I repeatedly advised enumerators
to be honest about this and state very clearly that we did not work with local politicians or the
government in any way and that the data collection was only for research purposes.\(^8\)

Many respondents also asked if they could learn about the results of the research, and we said
that we hoped to present the findings in the future but that we did not know when or where this
would take place. Aline has coordinated all of my research projects and traveled with me during
interviews, surveys, and the field experiment; she and I will return to universities in the state capital
of Ceará and regional universities in rural areas to share our experiences and results.

I also work with my research teams to mutually support each other in our professional de-
velopment and goals. During all of these projects, I trained teams of Brazilian students, and we
learned together how to conduct interviews, household surveys, and field experiments. Many of
my research assistants have since developed master’s or Ph.D. projects and published articles that
focus on insights they obtained while we were doing interviews or surveys in rural areas,\(^9\) and I
continue to learn from their research and experiences.

Having outlined my fieldwork process, I now return to the main findings from my last round of
interviews in August 2017 that I use to develop comparative case studies.

\(^8\)The field experiment, of which the household survey in Chapter 5 was part, does involve providing tangible ben-
efits to the communities. We provide water-level measurement devices for community wells to treated communities;
during the endline survey, we are also providing the same device to control communities.

\(^9\)For example, Gomes Pereira and Coelho (2017) study the sociological and symbolic meaning of water and water
scarcity in funeral rituals in the semi-arid region of Ceará. They observed that residents left water bottles at grave sites
for their relatives, and they returned to some of the same municipalities and conducted additional interviews. They
write, “The water assumes a higher votive value when offered to the dead, considering its importance among the living
in the locality, who face water scarcity every day. The death at the side of the road gives rise to common graves with
crosses or small tombs in honor of the dead. In these graves, the people of the village put water bottles in an attempt
to quench a thirst that, according to them, is ‘an eternal thirst.’”
4.2 Sub-Municipal Case Studies in Rural Ceará

How does my theory play out among neighboring communities? To better understand the mechanisms, I traveled to and conducted interviews in neighboring communities within the same municipality of Canindé, Ceará or near its border in the neighboring municipality of Madalena, Ceará. In these six communities, most within a 25 kilometer radius of the city center, I discovered wide variation in community activity, leadership, voting behavior, and public service access.

My six case studies illustrate the spectrum of community organizing. The associations vary significantly in the participation of members, respect for leaders, and effectiveness. Some associations have high civic engagement with frequent meetings and regular elections, while community members in other associations have given up having a voice. In some associations, there are opinion leaders who organize the broader community, while in others the leader is not respected or there are contentious divisions among the leaders.

4.2.1 Sample Selection

In selecting the sample, I focused on the socio-geographic units of communities. Communities are groups of people who live in a geographic area, such as a neighborhood or village, and self-identify as residents of that area. In Brazil, a community is not an official administrative unit.\(^{10}\)

I selected the sample to ensure variation in bloc voting across communities based on public precinct-level voting behavior. Ideally, I would select the sample based on variation in my main independent variables of community activity and leadership, but these characteristics are not

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\(^{10}\) Maps prepared by the state government often include community names, though maps prepared by different state agencies often include different community names. Agencies get their information from local bureaucrats on the ground who reach out to different rural communities for different reasons, and in my field experience, the names were not always accurate and did not provide a reliable “universe” of cases. Talking to local moto-taxi drivers was often the best way to learn where communities were located and how each community referred to itself.
observable without conducting interviews or surveys in hundreds of communities in each municipality. While bloc voting is the dependent variable for one of my observable implications, it is also a predictor of public service access; variation in community-level bloc voting is also publicly available for all communities in the state. I analyzed concentration of voting by polling station in the 2016 municipal elections, and I created a sample of possible communities that was stratified by number of voters, concentration of voting, and whether the top voted candidate won or lost.

Figure 4.1: Traveling between rural communities by moto-taxi during interviews; photo taken by the author, April 2016.

Transportation to rural areas is very expensive, since many communities require an hour or longer on single-track roads in mountainous areas. With a limited budget, I maximized my resources by creating the sample of communities then discussing the list with moto-taxi drivers to identify routes that were accessible and that would allow me to visit many different types of com-
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...munities within the same day. Once in the community, I selected households via random walk and selected leaders via snowball sampling.\textsuperscript{11}

I draw five of the six case studies from Canindé, because I interviewed respondents in a larger number of communities in that municipality and I want to illustrate sub-municipal variation. I did more interviews in Canindé due to the larger size of the municipality and logistical/timing constraints.\textsuperscript{12} I chose the six cases included here because they fell towards the extremes of having high or low levels of community activity and leadership strength.\textsuperscript{13} While there are four main types in my typology, leadership characteristics also varied, and I sought to illustrate how this variation relates to bloc voting and public service access. Therefore, I select two communities that fall into Opinion Leader Cooperation and can be considered to have strong, unified leadership: one with constant leadership, and one with leadership turnover. I also select two communities that fall into Collective Self-Governance: one with weak leadership, and one with divided leadership.

The interviews with local residents in Canindé and Madalena took place during three consecutive days in August 2017, and I combine them with recent precinct level electoral results.\textsuperscript{14} The municipalities are located in the center of the state, 120 km from the coastal state capital, in the middle of the semiarid, hot region of the sertão central. Most of the cases are in Canindé, which is populous and poor.\textsuperscript{15} Political competition is high, with 216 city council candidates for

\begin{itemize}
\item \textsuperscript{11}All respondents were given consent forms and provided oral consent. All quotes from interviews are from audio-recordings that were taken with the consent of the respondent and were transcribed and translated by the author. For more information, see the detailed Interview Appendix.
\item \textsuperscript{12}I did interviews in 9 communities in Canindé, 4 communities in Madalena, and 5 communities in Mombaça.
\item \textsuperscript{13}In some of the communities, it was hard to discern the degree of community or leadership or the community fell in the middle of the spectrum. More information about the communities not included here is available on request.
\item \textsuperscript{14}These interviews are part of a series of 30 interviews that I conducted in 18 communities in 3 municipalities (Canindé, Madalena, and Mombaça) in rural Ceará in August 2017. I follow the guidelines outlined by Bleich and Pekkanen (2013) and report details about the interviews in the Appendix.
\item \textsuperscript{15}With approximately 77,514 residents (IBGE, 2017), Canindé is ranked the 11th (of 184) most populous municipality in the state and 338th (of 5,570) in the country; its GDP per capita of approximately $8,000 reals (approximately $2,100 USD) is ranked 68th in the state and 4,338th in the country.
\end{itemize}
city council seats in 2016, and the elected city council member with the most votes received only 3.9% of votes cast for city council candidates.\textsuperscript{16} Even in municipalities with fewer candidates, like Madalena, the difference between winning and losing a city council seat can be less than 5 votes.\textsuperscript{17}

I summarize my cases in terms of the typology resulting from my theory. To explore the mechanisms underlying my theory and results, I provide short descriptions of multiple communities across my typology. As I describe in Chapter 2, the concepts of community activity and leadership strength are continuous; for example, I observed communities that vary in having low, moderate, or high community activity. However, to illustrate the range of community types and political dynamics, I focus on communities that fall towards the edges of the spectrum.

I combine my findings from in-depth qualitative interviews with recent electoral results for the most voted city council candidates in each community. In each case, I follow the format of my Observable Implications in Chapter 1, Section 1.2.2 and describe the overall relationship between Community Organizing and Public Service Access, then I dig into the main mechanism by analyzing the relationship between Community Organizing and Bloc Voting and then between Bloc Voting and Public Service Access.

\textsuperscript{16}This is an unusually high number of candidates, since the median municipality in the state had 53 candidates for 13 city council seats in 2016. The winning candidates in Canindé received between 1,692 and 643 total votes, which represented 3.9% and 1.5% of all valid votes for city council candidates, respectively. 41 of the candidates received fewer than 10 votes each. In Madalena, the neighboring municipality, there were 46 candidates, and 5 received fewer than 10 votes each. The winning candidates in Madalena received between 1,234 and 340 total votes, which represented 11.6% and 3.2% of all valid votes for city council candidates, respectively.

\textsuperscript{17}With open-list proportional representation, seats are allocated based on votes received by the individual and by their party coalition. In Madalena, there were 11 seats for city council. After the quota was calculated, seats were allocated to parties: one specific party coalition (legenda) received 2 seats and another coalition received 7 seats. After the quota allocation, 2 of the 11 seats remained. These were allocated based on the remainder votes, and this party coalition received one of the remainder seats. The party list had 9 eligible candidates; the top two got the party seats (eleito por Quociente Partidário) and the third got the remainder seat (eleito por média). The third candidate on the list received 350 votes, and the fourth candidate received 346 votes; the difference between election and loss was 4 votes. See Ames (1995a) and Mainwaring (1991) for more details on Brazil’s electoral system.
I focus first on communities with both or neither features of community activity and leadership before discussing the intermediate cases.\textsuperscript{18} \textit{Community O-C} and \textit{Community O-T} exemplify the “Opinion Leader Cooperation” community type, with high community activity and strong leadership; the first has Constant leadership while the second has Turnover in leadership. Nearby, \textit{Community I} exemplifies the “Inaction” community type, with low community activity and weak leadership. \textit{Community C-D} and \textit{Community C-W} represent two forms of “Community Self-Governance” with Divided leadership and Weak leadership, respectively. Lastly, \textit{Community E} resembles an “Elite Coercion” community.\textsuperscript{19} I provide a map in Figure 4.2.

\textsuperscript{18} I use letters instead of Portuguese names so that this section is easier to read. The data are not sensitive, and respondents gave permission for quotes to be used as long as the speaker was not identifiable.

\textsuperscript{19} Though Community E is not a prototypical case, it illustrates additional ways by which community leadership functions and additional factors that enable a community to concentrate its votes in the absence of community activity.
Figure 4.2: Map of sub-municipal case studies
Note: Community C-W is approx. 15km from the city center. Community E is not shown here because it is in a neighboring municipality. Community X and Y are not separate case studies but are mentioned in this and other chapters.

Figure 4.3: A typical rural home
Note: Photo taken by a research assistant, September 2016.
4.2. Sub-Municipal Case Studies in Rural Ceará

4.2.2 Opinion Leader Cooperation - Constant Leadership

The rural district of Community O-C is a community with high activity and strong, constant leadership, and these features have helped community members to concentrate their votes and secure public services over many years. It is far from the city center of Canindé, and it takes about an hour to get there by 15 km of highway and then 13 km of dirt road.

Most community members participate in the association’s monthly meetings. As described by a local resident, “There is strength in numbers... at the moment, the community is very active.”20 The community has had two main respected leaders in the past 15 years, and one president was continuously re-elected for around ten years before the current president was elected in 2013.

Community Organizing and Public Service Access:

The association is involved in many community initiatives and helps community members to secure public services and benefits. The health clinic was constructed about 12 years ago through cooperation between the association president and mayor. Respondents said that the association worked with the mayor’s office to have a well dug and rainfall cisterns installed, and the association also helps members gain access to individual government benefits such as rural farmers’ pensions, widow pensions, and disability benefits.

Community Organizing and Bloc Voting:

A resident of the community was a city council member from 2012-2016. In the 2012 election, the community’s 736 votes were fairly concentrated: 33% (241 votes) to the top voted candidate

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20A more literal translation is, “The majority is strength,” which makes more sense in the original Portuguese. Interview 65, August 9, 2017.
(who was elected with 1,270 total votes).\textsuperscript{21} However, their previous most voted candidate did not run for re-election in 2016 due to old age.\textsuperscript{22} Community members’ strong tie to a politician from their neighborhood has made it difficult for them to switch their support to a new candidate.\textsuperscript{23}

The change in leadership may have impacted the community’s ability to coordinate its votes. The association had the same president from 2003 to 2013, and a new association president may have been less effective as a vote broker in the lead-up to the 2016 election, especially since the community needed to select a new candidate to support. While the community’s large size makes it difficult to coordinate, the community has strong organization and previous experience with bloc voting. As the new president gains experience and authority, I expect that the community will coalesce around a new candidate in 2020.

**Bloc Voting and Public Service Access:**

Residents perceive that their vote choice affects their access to services after the election, and they believe that local politicians monitor their votes at the two polling stations in the community. One resident described, “There are [electoral] sections here, and that’s how they know who voted and who didn’t vote. There are [sections] 53, 54, 55... I vote at 53, it’s on my voting card.”\textsuperscript{24}

Residents reported that, between the 2012 and 2016 elections, their previous top voted city council member helped drive community members to the hospital and arranged for the community

\textsuperscript{21}He ran in 2008 but was not elected, though he received 81 of his 396 votes in Community O-C. He ran in 2004 but was not elected, though he received 112 of his 413 votes in Community O-C.

\textsuperscript{22}A respondent said that every house voted for someone different, which is confirmed in the electoral results from 2016, when the top-voted candidate received 15\% (117 of 788 votes) and lost. No one from the community ran in 2016, and many different city council candidates showed up to solicit support.

\textsuperscript{23}I find systematic evidence for this phenomenon in Chapter 6. If the community’s previous top voted candidate does not run again, communities with high previous bloc voting struggle to coordinate their votes to the same extent in the next election, though they remain within the higher end of bloc voting.

\textsuperscript{24}Interview 65, August 9, 2017. Community O-C has two polling stations with sections 53, 54, 55, and 388; the four sections each gave between 134 and 272 votes to city council members.
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to receive a well funded by a state project that was eventually dug in 2017. However, one respondent still said, “I think it is more important for the community to be active and go after resources, because there are city council members who are not interested in helping, you know? But you need a city council member to be able to [get resources]. Still, [if] you have a city council member in the community and he doesn’t mobilize to help, I think it is better to be active and united.”

In Community O-C, community activity and strong, constant leadership play a strong role in mobilizing community members to both coordinate their votes and pressure politicians between elections. Even in a very large community, they were able to coordinate their votes in a local candidate in 2012. With active, united community members, they are able to organize and petition government officials to provide public services.

4.2.3 Opinion Leader Cooperation - Leadership Turnover

Community O-T also embodies the “opinion leader cooperation” type. It has active participation by community members in the association, but it differs from Community O-C in that there is high turnover among united leadership. Community O-T is a settlement that was formed through the landless workers movement and recognized by INCRA, the federal land reform agency.25

A resident said that the association is active and community members work together. Attendance at association meetings is quite high: the community has around 90 families (approx. 300 people), and 50 people usually attend the meetings. The group members and leadership bring ideas together in the meetings to try to address collective issues.26

There is high turnover among the leadership, and the leaders work together and seek out resources. Presidents are elected to a two-year term, and some presidents stay for two mandates

25See more information on community organizing driven by the landless workers movement in Chapter 3.
26Interview 69, August 10, 2017.
though others just one.\textsuperscript{27} However, the high turnover puts them at a slight disadvantage since the community does not have a clear vote broker. They struggle to coordinate their votes and must rely more on their post-election bargaining power towards municipal and external politicians.

**Community Organizing and Public Service Access:**

Residents said that the president brings ideas to association meetings, and then all members get together and discuss the issue. The association has gotten numerous development programs to help community members, such as assistance with buying and raising animals and digging shallow wells.\textsuperscript{28}

The association president is active in requesting services from multiple actors: city council members, municipal officials, and INCRA bureaucrats in the state capital. Many of the development programs have been provided by INCRA, and the president participates in protests, especially at the INCRA headquarters or governor’s office, to demand development and rural extension projects.\textsuperscript{29} If the president has to travel to the municipality or state capital, association members pitch in money for transportation, food, and lodging costs.

For issues that the community can handle on its own (i.e. where the action is not prohibitively expensive and where government assistance is not required), community members prefer to get together in a meeting and request money from all of the members. For example, the community has gotten together to fix the well pumps. During my visit, residents said that the community’s

\begin{flushleft}
\textsuperscript{27}In the interviews I did not ask how many candidates there were in the last election. The respondent reported that, in some cases, the president chooses not to run again. If the president had done a good job, the community will try to convince that person to run again and be elected again. If the president had not done a good job, there are numerous community members who step up and run for office. The longest that anyone has stayed consecutively was four years.

\textsuperscript{28}Community residents must be paying members of the association to have access to the development programs. All residents are eligible to join the association, and the dues are minimal.

\textsuperscript{29}Unfortunately, respondents said that INCRA had fewer programs recently, which was corroborated by government budget statistics demonstrating budget cuts to the agency’s development and rural extension programs since 2015; the budget cuts deepened further in 2018.
\end{flushleft}
pump had been broken for a few months and said that they would need to slowly pool together the money to fix it as a community because they can’t count on politicians to act quickly.  

**Community Organizing and Bloc Voting:**

While Community O-T has high community activity and strong leadership, it also demonstrates the challenges of having high turnover in leadership. The association helped to organize votes for the top voted person, but the association president is not seen as a strong vote broker. This is likely because the presidency changes frequently, and candidates may not know who in the community will have the most social influence. Residents reported significant vote buying by multiple candidates in the community, which may be related to a perception that the community lacked a clear vote broker.

In 2012, the community’s 287 votes were very dispersed: 13% (37 votes) went to the top voted candidate (who lost) and 11% (31 votes) to the second most voted (who was elected with 1,121 total votes). As such, the community did not have a strong tie to a city council member in between the 2012 and 2016 elections.

Through the association and community discussions, in 2016 group members were able to mobilize and coordinate their votes more than they had in the past. In 2016, the community’s 328 votes were more concentrated, though still quite low. They switched their weak support, and 19% (62 votes) went to a new top voted candidate (who was elected with 1,186 votes) and 9% (30 votes) went to the second most voted (who lost).  

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30 One respondent said that it would probably cost around R$ 400 (approx. $100 USD, or a bit more than two weeks of the formal minimum wage salary). They had not fixed it yet because most residents still had water in their rainwater cisterns and could ride their bicycles to a nearby reservoir to collect additional water in jugs.

31 While the top two candidates from 2012 did run again in 2016, neither was among Community O-T’s top two candidates in 2016. The most voted candidate in 2016 was a new candidate who had not run in 2012. He was a police officer in town and knew many people in the community.
Bloc Voting and Public Service Access:

Since the community had relatively dispersed vote behavior, residents reported that it was challenging to get resources from the municipal government. One resident said that the community “does not have a city council member” to rely on, due to the divided votes.\textsuperscript{32} When the association president reaches out to the community’s most voted candidate, the council member helps sick community members by sending a private car to transport them to the hospital or helping with other small money issues.\textsuperscript{33} However, he does not help out with broader community issues such as fixing the pump on the well; where it is feasible, community members instead organize separately to cover the costs. It appears that the council member helps with smaller, personal struggles but does not feel beholden to the community as a unit because he got votes in many areas.

4.2.4 Inaction

At the other end of the spectrum, Community I is a community with low community activity and weak leadership. It is just 5 km away from Community O-C, but local residents are not organized, and the association president is not respected by community members.

Community Organizing and Public Service Access:

The association has regular meetings to fulfill its official mandate, but the community members are not actively involved. The leadership of the association is neither respected nor seen as effective. A resident lamented that the current president was selected by the prior president and not elected by the community. She reported that the association has not achieved anything for the community:

\textsuperscript{32}Interview 68, August 10, 2017

\textsuperscript{33}He is known to help multiple communities because he got votes in many areas. The respondent’s statement was confirmed in the electoral data. Community O-T’s top voted candidate received 62 votes in Community O-T, and he received more votes (between 139 votes and 80 votes) from five other communities.
“A city council member\textsuperscript{34} donated the land to form the association, but [the leaders] are dragging
their feet, they don’t put in any effort, no one does. Also, the members pay about R$ 2-3 reals [less
than $1 USD] every month [in dues] to the association account, but unfortunately, no one knows
[where the money goes].”\textsuperscript{35}

\textbf{Community Organizing and Bloc Voting:}

The community was unable to vote together for a particular candidate to represent them in 2016:
“The community does not have city council member. We have already tried to have one here, but
we didn’t succeed in the last election... We always try to ask people, try to have a city council
member from the community, to represent the community.” Indeed, the community’s 280 votes
were very dispersed: 18\% (51 votes) to the top voted city council candidate.\textsuperscript{36}

Vote-buying is said to be common in the community, and the respondent continued, “Others
always come from afar, who knows from where, asking for votes, even buying votes here. A lot
of people win by buying votes, [for example] R$50 reals [approx. $15 USD], it is sad... they gave
eyeglasses, basic food baskets, everything... water trucks, anything to get votes... The vote of the
people shouldn’t be sold, but unfortunately we are going through this.”

Residents believe that politicians monitor the community’s votes at the local polling station.
The respondent continued, “I vote at the section here, you know? So [the politician] comes and

\textsuperscript{34}The same city council member that helped in Community O-C.

\textsuperscript{35}Interview 63, August 9, 2017.

\textsuperscript{36}In the 2012 election, Community I did coordinate its votes and gave 111 of 231 votes to the same politician that
the respondent said donated the land to form the association. It is very likely that in the past, the community more
closely resembled the Elite Coercion type with elite pressure to support the local candidate, but it entered the Inaction
type after he retired.
says, ‘I will buy you. I’ll give you this much money. When it’s election day, you will vote for me. What is your section number?’ And then the politician goes and verifies.”

**Bloc Voting and Public Service Access:**

The community suffers from poor service provision. The main water source is the local reservoir, and the community shares the water system with a nearby community and receives water in the afternoon. While community members do have piped water, the tap water is dirty and muddy and is hot when it arrives. Many days there is no water even when it was scheduled to come. There is no health clinic, and a respondent said that when the doctors do come from the city center, they distribute an insufficient number of entrance tokens. They leave as soon as the workday is up, and many residents are left out.

A resident attributed the lack of local development to a lack of community activity, vote-buying practices, and the community’s inability to elect a representative: “This community lacks many things... The population is really poor. But why do we live this way? Because of the people we elect. Even when there is a politician who we elect to try to get things for the community, we don’t get anything. Because there are those who... come from afar and buy the community members’ votes, and because of this the community can’t grow.”

She believed that community members shouldn’t blame everything on their politicians if they don’t go mobilize themselves; if the community doesn’t organize and complain, for example on the radio, then they shouldn’t complain that they don’t have anything.

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37 Interview 63, August 9, 2017. I did not conduct interviews with politicians, so I cannot assess the veracity of this statement. However, as I describe in this chapter, many respondents had similar beliefs.

38 Some drink this water, while others use rainwater cisterns or walk to the outskirts of the community to a public well with a desalinization machine.

39 Interview 63, August 9, 2017.
4.2.5 Collective Self-Governance - Weak Leadership

What does it look like to have high active community but weak leadership? Community C-W\textsuperscript{40} sits at the intersection of the highway and the dirt road leading to Community O-T and Community I and is just 10 km away from Community I.

Community Organizing and Public Service Access:

The association meets regularly, and most residents participate in the meetings on the second Saturday of the month to discuss collective benefits for the community. There is an association leader that did not seem to play a prominent role and was likely more of a figurehead. Members are well organized and active in meetings: “We [association members] do things together, you know? We talk and then put in practice what we want to do. And we go after it.”\textsuperscript{41}

The association has mobilized to access numerous collective resources. A resident said that the association works on water issues and helped the community to get a collective well with a shared water tap. The association also helped get trash collection in the community.

Community Organizing and Bloc Voting:

Residents petitioned to have their polling station reinstated to be able to clearly demonstrate their voting loyalty and use this relationship to secure services. Their community previously voted at a polling station in a neighboring community with upwards of 500 votes.\textsuperscript{42} Because of this, the

\textsuperscript{40}Community C-W stands for Collective Self-Governance - Weak Leadership.

\textsuperscript{41}Interview 60, August 9, 2017.

\textsuperscript{42}Electoral records confirm this movement. The section previously voted at a location with 5 electoral sections and 3 voting machines, and the community’s section voted together with two other sections at the same machine. That machine had a total of 502 votes in the 2012 election.
community felt that they could not prove their allegiance to a particular candidate and petitioned to have the polling station brought back to their community.\textsuperscript{43}

They succeeded in getting their own polling station, and they discussed as a group whom they wanted to vote for. Their vote choice was driven by community activity, and the resident was explicit in saying that the vote choice was not driven by an endorsement by an association leader: “Yes, we [got together to vote for him.] We see what the [candidate] talks about, and then we give a vote of confidence in that person and then will see if the person works out [and follows through].”\textsuperscript{44}

At their own polling station in 2016, the community was able to successfully concentrate its 76 votes: 48% (36 votes) for the top voted city council candidate, who was elected to city council. While 36 votes is a small number, it can be the difference between winning and losing a city council seat. The community made up a very small share of their candidate’s total votes (1,186), but a small but reliable bloc of votes is valuable to even candidates that receive far more votes elsewhere.

**Bloc Voting and Public Service Access:**

Community members leveraged the electoral relationship that they created through bloc voting to get public services. A resident said that the association was able to have a well drilled and installed in the community and get trash collection service through its relationship with the top voted candidate. One resident said that their candidate promised to pave the road, and indeed, the public record shows that the council member requested and received approval (\textit{requerimento}\textsuperscript{44})

\textsuperscript{43}Interview 61, August 9, 2017.

\textsuperscript{44}Interview 60, August 9, 2017.
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4.2.6 Collective Self-Governance - Divided Leadership

Community C-D\textsuperscript{45} is a weaker version of “collective self-governance” with moderate community activity but divided leadership among two competing associations.\textsuperscript{46} It seemed that there had just been one association in the community until recently, when a social division emerged.\textsuperscript{47}

The president of the original association founded a new association in the cluster of houses down the road, which was considered part of the same broader community. Many residents went with the president to the new association, and now there are two associations.\textsuperscript{48} However, they all vote at the same polling station at the school in the main part of the community.\textsuperscript{49}

Community Organizing and Public Service Access:

The community was formed through the land reform movement and is a rural settlement. The community has a health clinic whose materials were provided by a former mayor, and the community as a whole worked together to construct it. The same former mayor, with the support of a former city council member, also helped the community get a well and pump.

Residents perceived that association presidents are essential for getting access to resources. One described, “Everything we need here goes through the [presidents], you know? They are the

\textsuperscript{45}Community C-D stands for Collective Self-Governance - Divided Leadership.

\textsuperscript{46}Interviews 58 and 59, August 9, 2017.

\textsuperscript{47}Respondents were hesitant to talk about this, and since it was socially sensitive, I did not push them for more details.

\textsuperscript{48}I do not know exactly when the new association was founded, though the split seemed fairly recent.

\textsuperscript{49}I conducted my interviews in the main part of the community and did not have enough time to also do interviews in the other half. I would like to supplement this case study with additional interviews in the future.
ones who have to go to the meeting with INCRA.\textsuperscript{50} Without that, nothing comes."\textsuperscript{51} They reported that the presidents are very active in seeking resources, for example a development program where residents would burn wood to create charcoal to sell.

**Community Organizing and Bloc Voting:**

A resident argued that the community is unable to coordinate its votes in a specific candidate, though she said that it would be valuable to do so. She attributed the challenges to the divisions between associations and the social split in the community.

She said, “It’s like this, [someone says], ‘Let’s vote for that guy so that he wins, and when we need something, we can go after him.’ But it doesn’t happen. That’s how it is. We don’t have a city council member... We need one, but we don’t have one. If we were to have one from here, it would be much easier. We could go after the person and say, ‘I helped you so now you’ll help us,’ you know?”\textsuperscript{52} The election results show that the community gave 27\% (101) of its 376 votes to a losing candidate who only received 320 total votes and was not close to winning a seat.\textsuperscript{53}

**Bloc Voting and Public Service Access:**

The resident knew that other communities are able to coordinate, and she believed that their coordination benefits them: “There are many communities where people do that [and coordinate their votes]. There is Community X, they had one [high voted city council candidate]. And he won.

\textsuperscript{50}The community is a settlement formed by the landless workers movement, and the land reform process and development projects for the settlement are managed by the government agency INCRA.

\textsuperscript{51}Interview 59, August 9, 2017.

\textsuperscript{52}Interview 59, August 9, 2017.

\textsuperscript{53}While 27\% of the vote is sometimes perceived as bloc voting, it is likely that, having lost, the candidate is not interested in helping the community through his personal or political connections. He also ran for office in 2012 and got only 218 votes. The candidate is a small scale farmer. With so few total votes, and little improvement between 2012 and 2016, the candidate may not plan to run again in the future.
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And now, he helps a lot there. Why? Because he’s from there, I don’t know if he grew up there, but he helps the people.”

Indeed, the neighboring Community X concentrated its vote in 2016, giving 86 of 342 votes to a city council member that the association there endorsed.

Residents believed that communities need a city council member to represent the community. Asked whether it was more important to have an active community or a city council member in order to get resources, she responded, “Having a city council member helps. It’s always easier with someone like that... There are many people who will go after others [to get resources] and succeed. [But] you have to have a [political] representative.”

While community organizing and strong leadership is important for public service access, respondents still saw bloc voting as an important strategy.

In Community C-D, residents were very active but participated in two competing associations. With divided leadership, community members felt that they could not coordinate their votes to be able to use bloc voting as a strategy for improving their public services.

4.2.7 Elite Coercion

In the last case presented here, Community E is located just over the municipal border in the neighboring municipality of Madalena. Community E is an interesting combination of both a large community (that goes by the name of Community E) and a smaller, more rural community that is a few kilometers away and goes by a different name. The socio-geographic lines are blurred;

54 Interview 59, August 9, 2017.

55 I conducted interviews in Community X on August 10, 2017, and I consider it to be an “opinion leader cooperation” community. It was also in the survey sample for a small household survey that I ran in September 2016 before the municipal election. Survey respondents reported that the association endorsed a specific candidate, whom they named and went on to win. The same sentiment was reported in Interviews 71 and 72, August 10, 2017.

56 Interview 59, August 9, 2017.
residents see themselves as living in different social communities but, due to close geographic proximity, they share a water system and vote at the same polling station.\textsuperscript{57}

I refer to the combined communities as Community E, which has “elite coercion” characteristics of a constant leader and very low community activity. The large community (considered a rural district) once had an association, but residents did not participate and it was dismantled. I gathered that there were personal disputes involved as well, though it seemed to be a sensitive topic, and I did not press the issue.\textsuperscript{58}

The former president left and founded a new association in the small rural community even though he still lives in the large community. He has been in power since the association was founded many years ago, and a respondent knew that the association held elections for its leadership but implied that the president was so dominant that he quite possibly was the only candidate.\textsuperscript{59}

\textbf{Community Organizing and Public Service Access:}

Community E gets its water through a community water management program (called SISAR) that is based in the small rural community down the road. The water management program is run through the association in the small rural community (founded by the president who left the large community), and the deep well and piped water system provided by SISAR serve both the small rural community and large community (over 1,500 people).\textsuperscript{60}

The small rural community down the road, where the association is located, also gained access via the association to development programs involving electrification for unconnected households

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\textsuperscript{57}Some club goods apply to the combined communities, such as water access, while others could be targeted to one of them.

\textsuperscript{58}My interviews were in the large community.

\textsuperscript{59}Interview 78, August 11, 2017.

\textsuperscript{60}Program documents from SISAR indicate 415 household connections in that community, with approx. 4-5 people per household.
and rainwater cisterns. The association is not involved in other public services, especially in the large community, and respondents said that health care, road paving, and other services are provided by the mayor’s office.

Community Organizing and Bloc Voting:

Community E is an interesting case where the community does engage in bloc voting and switched its allegiance between elections, but voting behavior was not organized by the association or the leader. The large community and small rural community vote at the same place, and there are four electoral sections that all vote at one high school in the large community.

The president who controls the association in the small rural community nearby was himself a candidate for city council in 2012 and 2016. He was Community E’s top voted candidate in 2012, with 30% of the vote (266 of 909 votes). However, he was not elected and only got 429 total votes. The second most voted candidate in 2012 got only 19% of the vote (171 votes) and also lost; he too is a resident of the community. Respondents reported that neither of these candidates were helpful in getting access to resources.

In 2016, a new candidate, also a resident of the large community, ran for office. He even included the community name in his “electoral nickname” (nome para urna). He got 35% of the votes (298 of 852 votes), while the second most voted candidate was the same as in the previous election and got 17% of the community votes (148 of 852 votes). Both the top and second most voted candidates were elected to office, and both received almost half of their total votes in Com-

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61 Interview 78, August 11, 2017.
62 A respondent said that there were five sections and was only off by one. She said they used to be divided among two different schools, but one had to be demolished. Interview 78, August 11, 2017.
munity E. While the association president ran again in 2016, he received fewer votes (116 of 852 votes) and lost.63

How did residents of Community E concentrate their votes? A resident said that Community E is known for having a lot of votes, and candidates have to appeal to the residents to earn their support. She reported specifically that the community does not discuss politics as a group, though people talk with their family and friends about who they will support. She noted that this was different from communities with associations, saying, “Generally, in communities with associations, they have a meeting and the group decides. But we don’t. Everyone does his own thing.”64 The top two candidates from 2016 campaigned heavily in the community, which was less costly for them than for other candidates since they are local residents. The candidates therefore did not need to rely on an association leader to serve as a vote broker.

**Bloc Voting and Public Service Access:**

Residents said that their voting behavior was very important for getting public services.65 When they need help with health care, road work, and other issues, residents go directly to a city council member. Residents reported seeking out both the top and second most voted city council members, and they said that both of them were responsive and active in getting resources for the community. Their examples included an ambulance for the community, help paving a road, help getting the

63I did not conduct interviews in the small rural community, so I do not know how this leader went about gaining support.

64Interview 78, August 11, 2017.

65The exception is the piped water system managed by the community water program SISAR in partnership with the state sanitation company CAGECE. If something happens to the water system, residents seek the water operator who gets help from SISAR and not from the municipal government.
4.2. Sub-Municipal Case Studies in Rural Ceará

pump fixed on a private well that serves multiple families, and a “beauty salon” day for senior citizens.66

I note that Community E is not the prototypical “Elite Coercion” community, since the strong leader is not the one coordinating the vote and coercing or convincing (most) members to follow his lead. The leader may have been more powerful than I was able to observe, especially if respondents were embarrassed or afraid to talk about it. However, other scholars have described communities that would fall into this category, including studies about community associations and politics in Brazil (Gay, 1994; Montambeault, 2015; Abers, 2000).67

4.2.8 Summary

The six communities in my case studies all vary in the degree of community activity and strength and unity of their leadership, and residents described very different voting behavior and public service outcomes.

Community organizing can help residents get public services, both through bloc voting and independent of it. Community O-T, a community with high community activity and strong, unified leadership, had a resident city council member whom it overwhelmingly supported in 2012. This candidate helped the community get many resources. However, he retired from politics due to old age, and the community did not concentrate its votes in 2016. Nevertheless, with an active community and strong leadership, residents felt confident that they could still protest and demand resources for the community. Residents in Community I and Community C-D attributed their struggle to get public services to their lack of mobilization and to their divided leadership, respectively.

66Interview 77 and 78, August 11, 2017.

67My future work will expand the qualitative case studies through a more systematic analysis and include a higher number of interviews per community.
The cases show that rural residents perceive that bloc voting is a key mechanism by which organized communities get public services. Community activity and strong leadership help community members to coordinate their votes, and many communities succeeded in mobilizing group members and allying themselves with a city council member. *Community C-W* even had its polling station moved to the community to be able to demonstrate its collective vote, and in the next election it gave 48% of its votes to a winning city council member. While bloc voting is possible in the absence of strong activity or mobilization by the president, as in *Community E*, this scenario is less frequent and usually driven by the presence of a resident politician.

Some communities tried but were unable to coordinate their votes, and this was primarily the case for communities with low community activity and/or weak or divided leadership. In *Community I*, residents attributed their inability to bloc vote to lack of organization within the association and broader community. In *Community C-D*, residents knew that neighboring communities coordinated their votes and benefited from it, however they said that the divisions within their community prevented them from doing so. *Community O-T* was an exception: the leadership was strong, unified, and respected, but high turnover among association leadership left the community without a clear vote broker whom politicians could seek out for support.

Many respondents reported that vote concentration can improve public service access. This was true whether they concentrated their vote through the association (*Community O-C* and *Community C-W*) or independent of it (*Community E*). Residents in these communities were very vocal about their ability to reach out to their specific, top voted city council member and get access to resources. The relationship between bloc voting and service access is also evident in places that do not coordinate their votes. Residents in *Community I*, *Community C-D*, and *Community O-T* attributed many of their challenges in accessing public services to their lack of a political representative.
4.3 Conclusion

In this chapter, I illustrate how my theory and observable implications play out under different conditions. I draw on qualitative interviews that I conducted in August 2017 across nearby neighborhoods, which vary greatly in their degree and type of community organizing, bloc voting, and public service access. I combine my observations from interviews with electoral data for each community.

The sub-municipal case studies illustrate the diverse ways by which my theory of trading favors works in practice. While the comparative case studies provide a deeper study of a narrow subset of cases, they do not allow me to generalize to a broader population. How do my observable implications hold up across a larger group of communities across the state? In the next chapter, I use a large-scale household survey, also merged with electoral data, to analyze a wide variety of communities that can generalize to a larger population.
Chapter 5

Trading Favors in Practice:

Water Access in Ceará, Brazil

In this chapter, I test my theory with quantitative evidence from rural communities in the state of Ceará in Northeast Brazil. My theory of trading favors focuses on sub-municipal variation, which shapes residents’ day-to-day social interactions and access to essential services.

Unfortunately, sub-municipal variation is very hard to measure. Scholars are lucky when countries collect and report reliable municipal-level statistics, and a country as large as Brazil has extraordinarily rich data for its 5,570 municipalities. However, it is an entirely different story within the municipality, especially outside major metropolitan areas.

The main way to understand sub-municipal variation is by conducting qualitative interviews and household surveys, and these are time-consuming, expensive, and require deep local knowledge. To evaluate my theory, I do just that: I used interviews to create comparative case studies in Chapter 4, and I use a large-scale household survey in this chapter.
5.1. Hypotheses

This chapter uses quantitative analysis to evaluate the complex relationships between collective action, distributive politics, and public service provision. I test my hypotheses through a statistical analysis of a large-scale original household survey, which I conducted and then merged with precinct-level electoral data (n=1,990 respondents from 120 rural communities in 10 municipalities). The sample is composed of rural communities with existing associations and who use wells across the semi-arid region of Ceará.\footnote{The original household survey was the baseline for a large field experiment as part of the EGAP Metaketa III project, so sample selection procedures were designed for the experiment and not for the purposes of this study.}

My results show that water access is most reliable and secure in communities with high community activity and constant leadership. In particular, strong social ties and eager participation in the association predict higher water access. I find evidence for my main mechanism: organized communities are more likely to concentrate their votes, and bloc voting improves water access. Specifically, bloc voting is more likely in groups with strong leadership (constant leaders who face competition), which is consistent with my theory.

These findings provide quantitative evidence for the observable implications outlined in Chapter 1, Section 1.2.2. They highlight that organized citizens are more likely to coordinate their voting, and communities that coordinated their vote in a single candidate are more likely to have reliable, secure water access.

5.1 Hypotheses

Why do some communities have secure, reliable access to public services and others do not? I argue that community activity and leadership contribute to a group’s ability to request services from politicians. High activity makes it easier for members to discuss the pros and cons of different forms of protest and choose collective actions after the election. Strong, unified leaders are more
likely to know whom to turn to for different collective needs and be familiar with the bureaucratic procedures required to request public services. They are more likely to have connections with politicians in other levels of government to get attention after the election.

Respondents in different communities noted that the politician whom they supported has helped with access to water resources, drought relief, health services, ambulance services, or paved roads. Still, many said that the politician had not helped at all. Many residents explained that their community struggled to organize; others felt that the politicians were too corrupt and would never follow through on their promises or responsibilities.

Politicians prioritize public services to certain communities for a variety of reasons, including efficiency (number of people served, distance to other services, existing services). Nevertheless, the effort by communities to demand public services is likely to be a key predictor of public service provision by politicians. All else equal, a community that is actively pressuring the politician is more likely to receive services.²

I first seek to establish that community organizing influences public service access. This logic leads to my first hypotheses:

**Hypothesis 1** *Individuals with strong, unified leadership have better public service access.*

**Hypothesis 2** *Individuals with higher community activity have better public service access.*

Next, I piece apart this overall relationship by focusing on a specific electoral mechanism of bloc voting, which I believe has been overlooked in the political science literature. Rural residents perceive that politicians monitor aggregate votes at polling station and electoral sections, and one

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²My interviews suggest that two different targeting practices are taking place, depending on the type of politician and other municipal factors. In the first, two communities would be equally efficient recipients, and the more active community receives the service. In the second, the politician may provide services to an inefficient but active community instead of selecting the efficient choice.
5.1. Hypotheses

respondent described, “Our community has two electoral sections that vote at the local school. As soon as people vote, the whole world knows, you know? The vote brokers working for different politicians know how many votes their politician should expect, and the politician will find out how many votes he actually got. The results work like that.”

Community associations assist local citizens to coordinate their votes, and I argue that community activity and leadership both contribute to a group’s ability to coordinate its votes. High community activity makes it easier for group members to discuss their collective vote choice, and their promises are more credible due to strong trust and reciprocity. Strong leaders are better able to get information about electoral campaigns and mobilize community members to vote for a specific candidate.

Specifically, I expect constant leadership to help communities to coordinate their votes in places where leaders competed to become president. However, I expect that constant leadership would hurt where there is low or no competition. Where there is high competition, a constant leader is challenged by other community members and continues to be re-elected with the support of the community. Multiple leaders compete for supporters to elect them to the association presidency, and these same supporters are more likely to follow the association president’s voting recommendation during municipal elections. In Brazil, a local leader can legally serve and be paid by the politician as a campaign/vote broker (*cabo eleitoral*), and politicians seeking brokers prefer to work with a constant leader who has demonstrated a strong following in a competitive environment. On the other hand, where there is low competition, it is hard for a political candidate to know if the long-time leader has the support of the community or not, since the candidate may

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3 Interview 59, August 9, 2017.

4 This finding is consistent with the argument made by Auerbach and Thachil (2018), where neighborhood leaders in urban India seek to become partisan vote brokers and compete for followers by securing government services for the neighborhood.
have been the only option. Constant leadership without competition is less attractive to a politician than a new president who is eager to mobilize the community.

Polling station characteristics may also affect community members’ ability and incentive to coordinate. I found during fieldwork that communities have even been known to petition to have their own small polling station so that they can demonstrate their loyalty to candidates and use this electoral tie for access to services.\textsuperscript{5}

Communities are most likely to coordinate their votes in places where their bloc vote is clearly able to be monitored: where they are concentrated in one polling station, where the polling station is smaller, and where all voters at the polling station come from the same community. If group members are divided among multiple polling stations, it will be more difficult for politicians to observe the group’s vote. If group members are voting alongside residents of other communities, especially at a large polling station, then politicians will also be unable to monitor the group’s vote. I incorporate these important theoretical points in my empirical analysis.

Communities vary greatly in their relationships with local politicians. In qualitative interviews, respondents described the benefits and challenges of coordinating their vote as a community. Residents in mostly illiterate communities told me which city council candidates were the “most voted” by their community, with some even citing accurate vote counts for their polling station. In communities that concentrated their votes in one or two people, respondents often said that the association leadership supported someone and urged members to coordinate their votes. Respondents in other communities lamented that their community was unable to concentrate its votes in a specific candidate. This discussion brings me to my next hypotheses:

\textsuperscript{5}See Community C-W in Chapter 4. This also demonstrates that polling station characteristics are not exogenous, and community organizing can influence the size and make-up of polling stations.
5.2. Data and Methods

**Hypothesis 3** Individuals with constant leadership are more likely to concentrate their votes in one city council candidate where there is high competition for association leadership.

**Hypothesis 4** Individuals with higher community activity are more likely to concentrate their votes in one city council candidate.

Groups that concentrated their vote in a particular candidate have a clear person to reach out to in order to request services. In interviews, local residents and leaders argued that the association president would first seek out the most voted politician for help, because their community helped that person get elected and the person had a responsibility to help them in exchange. In cases where the most voted candidate lost, respondents would still seek out that person as an intermediary to friends or political allies in municipal or state government; while the community’s votes did not lead to the candidate being elected, they are a potential source of votes in the next election. This logic brings me to my last hypothesis:

**Hypothesis 5** Individuals in groups that concentrated their vote in a particular candidate have better public service access.

5.2 Data and Methods

To test my hypotheses systematically, I need to collect data on household and community level characteristics.\(^6\) Very little data exist for rural communities, and my focus on sub-municipal variation makes this even more challenging.\(^7\) I take an innovative approach and combine an original household survey conducted in 120 different communities with their precinct-level election results.

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\(^6\)Given the long-term nature of my theory, my ideal research design would be to study the same communities over time. However, this is both time and cost prohibitive. In addition, most community characteristics, especially related to community activity, trust, and leadership turnover, are unlikely to change in the short-run.

\(^7\)Data on public service access is hard to come by, especially in developing countries with overlapping bureaucracies and jurisdictions, weaker state capacity, and infrequent record-keeping. In my fieldwork, I initially sought out
I test my hypotheses with variables from the household survey, election results, and geospatial analysis. My dependent variable of water access is an index of individual-level household survey questions reflecting security and reliability of water access. Concentration of voting is used as an independent and dependent variable, and it is a community-level variable for the vote share for the most voted city council candidate at the community’s main polling station.

I measure variation in community activity through individual-level household survey variables of trust among community members and satisfaction with the community association. I measure variation in leadership strength and unity through individual-level household survey variables of constant leadership with the same person or family over time and competition for association president.

I include variables for alternate explanations present in my theory and that I observed in my case studies. These include individual-level household survey variables about the presence of a resident politician and the role of economic elites and community-level polling station characteristics. I include controls for community-level geographic isolation, individual-level wealth, and individual-level key demographic factors.

In the next section, I describe the data sources and operationalization of the concepts.

### 5.2.1 Household Survey and Electoral Data

During June-August 2017, research teams conducted surveys in 120 communities in Ceará as part of the baseline survey for the EGAP Metaketa III on Natural Resources Governance.\(^8\) The 120 local bureaucrats in the municipal city center who are responsible for water supply and extension services. However, I found that even they often had incomplete or incorrect information about the state of water services and community activities in rural communities within their municipality. Given the scarcity of data about access to and quality of local public services, Post, Agnihotri, and Hyun (2018) advocate the use of crowd-sourcing to obtain data electronically from local citizens, especially regarding reach, allocation, quality, and perceptions of service delivery. I do not use crowd-sourcing here, though it is a potential option for future work.

\(^8\)See Appendix for more details on the field experiment and sampling methodology.
5.2. Data and Methods

Communities are spread across 10 municipalities. The sample selection procedures were designed for the field experiment and not for the purposes of this study. Municipalities were selected to have medium to large populations situated in the state’s semi-arid zone and crystalline geologic zone. Potential communities were limited to (i) localities where the association was somewhat or very active; and (ii) there was at least one functioning well used by community members. Once the universe of possible communities was identified within each municipality, we selected a random sample. As Co-PI of the field experiment, I personally trained the enumeration teams and oversaw the data collection process.

While these in-person surveys are more expensive and time-intensive, they are critical to collecting household-level information about water use, social relationships, and political factors that is otherwise unavailable. There are four main groups of people that we surveyed in each commu-

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9 Municipal selection factors ensured that municipalities were subject to similar climate and hydrogeological conditions. We first defined a sampling frame consisting of municipalities from Ceará’s four water basins: Acaraú, Sertão de Cratéus, Banabuí, and Salgado. Water basins differ in geological and geographic characteristics such as distance to state capital, access to major rivers, groundwater salinity, hydrogeology, aquifer characteristics, and the regional office of the state water agency COGERH to which they report. Off of the sampling frame, we drew a random sample of 10 municipalities, stratifying on water basin and subject to the following criteria: 1) Geological: Municipalities should be situated over the state’s crystalline geological zone, which is the dominant geological zone. Crystalline soil limits interference between different wells and is characterized by small wells as the principal groundwater source. These sources are vulnerable to overuse due to the unknown, though often small, water deposits. 2) Governance: Municipalities should be situated inside the state’s official semi-arid zone, so that they are under the same environmental and climate limitations. 3) Size: Municipalities should have medium to large population and geographic area relative to the other 150 municipalities. This criterion maximizes the number of communities with active associations and the distance between selected communities to reduce spillovers.

10 To collect this information, two research assistants traveled to each of the 10 municipalities in May 2017 and spoke with local experts from the municipal government or from civil society organizations. These experts provided a list of all registered community associations in the municipality. Research assistants then independently verified the information provided by experts and ruled out any localities that did not meet (i) and (ii) and were not neighbors (and therefore subject to high spillovers and likelihood of the same operator serving both communities). The remaining list entered the pool of potential research sites, from which we randomly drew a list of about 30 communities, where possible depending on the number of total communities, broken down into three groups: (1) group one containing a list of the 12 communities to be surveyed; (2) group two containing six communities to be surveyed in case any of the first 12 localities did not meet criteria (i) or (ii) after on-site visit and verification; (3) group three containing the remaining communities in case all others did not meet the community or well criteria. The total number of localities varies depending on the size of the municipality and the number of communities that fit the criteria of (i) and (ii).
CHAPTER 5. TRADING FAVORS - WATER ACCESS

Community: households in the larger cluster of houses, the “populated area”; dispersed households and landowners, the “rural area”; community association leaders; and water operators or other water expert(s).\textsuperscript{11}

Enumeration teams visited one community per day and surveyed an average of 16 people across these four groups – though in all communities at least two of these respondents were the community association leaders and water operator.\textsuperscript{12} When communities had a cluster of more than 20 houses, the enumeration team followed a random walk pattern to select households. First, they started off from a prominent community center, usually a small church/chapel, and walked in different directions for up to two minutes (community size allowing). After the initial walk, they sampled the first house available and from then on they skipped two houses before next survey. In cases where there were houses on both sides of the road, they would each survey their right-hand side first and then alternate sides.\textsuperscript{13} For the rural area, they would identify dispersed houses on the drive in/out of the community and ask families where to find remaining households who were also members in the community association.

For community association leaders, the enumeration team used a snowball sampling approach and asked citizens in public areas who the association leaders were and where they lived. They first sought out the president, but if the president was unavailable, they sought out other members of the leadership (vice-president, treasurer, secretary, etc.). This was surprisingly easy, given the small size of the communities and that community members are very familiar with association positions and where people live and work. Association leaders were eager to participate and share their

\textsuperscript{11}In most rural communities, a local citizen serves as the water “operator” to manage an existing community water system, such as a communal well or piped network from a local well into households.

\textsuperscript{12}It is not unusual that community association leader and operator are the same person, in which case we surveyed the same individual for both community and well information. Only rarely there were more than one water operator in community, in which case we interviewed at least the most knowledgeable operator.

\textsuperscript{13}Since they were walking in opposite directions, this process ensures no bias from house construction and sunlight patterns.
5.2. Data and Methods

experiences, especially since they were sought out as being leaders in their communities. Water experts were surveyed the same way, and teams assigned their water resources expert to speak to operators and visit well(s) to collect the relevant hydrologic information.

I match an individual’s household survey data with the electoral data for her community.\textsuperscript{14} First, I identify the most common polling station among respondents within a particular community.\textsuperscript{15} Then, I calculate the relevant electoral variables for the primary (modal) polling station and merge them with the household data. All households within the same community will have the same values for the electoral variables, leading me to cluster all standard errors at the community level. Brazilian municipal elections were held on October 2, 2016, and electoral data is publicly available online from the Ceará state electoral agency: \textit{Tribunal Regional Eleitoral}.\textsuperscript{16} I aggregate all sections at the polling station.

The survey data analyzed in this chapter contain 1,227 observations of rural residents and leaders in 114 communities in Ceará, Brazil. The full survey has 1,990 total respondents, but 763 were excluded from the analysis in this chapter because they or a family member were not

\textsuperscript{14}Politicians and leaders can monitor each section that is reported separately and often know the section number of the voters that they are monitoring. In the household survey, we asked respondents which polling station they voted at and chose not to ask for their section number. Asking for their section number, while not sensitive, could suggest that we worked for local politicians instead of being independent researchers.

\textsuperscript{15}In the median community, respondents reported three different polling stations, with 24 communities where all respondents reported the same polling station, 34 communities where respondents reported two polling stations, and 34 communities where respondents reported three polling stations. There are 104 unique polling stations in the full survey, since some neighboring communities voted at the same polling station.

\textsuperscript{16}See http://apps.tre-ce.jus.br/tre/eleicoes/resultados/2016/. Electoral results are generally reported at the section-level, though some sections are aggregated together in the reporting. Most rural polling stations have only one section, though some have more sections if the rural polling station serves a larger population.
association members or had missing values for key variables. I impute all missing values based on the community mean from the full survey.

**Water Access**

Water access is a challenging concept to operationalize. A primary method used by the UN and WHO, among others, identifies whether households have access to an improved water source: a water source that by construction protects the water source from outside contamination. Another method used by the Brazilian census is to ask about a household’s primary water source and if the household has piped water.

While important, these measures don’t reflect the actual experience or impact of these services, which are shaped more by security and reliability than simple access. I found during fieldwork that most residents did not know how to respond to a question about their primary water source because they rely on many different water sources depending on use (drinking, cooking, washing, bathing, animals, farming, etc.) and time of year (dry season, rainy season). In addition, data about the existence of a piped water system cannot capture many critical questions. How often does the system break down? How quickly does it get fixed? What is the water quality? How equitable is water use?

Many scholars focus instead on indices to capture water security or water poverty. These measures require more detailed knowledge on a variety of indicators, but they are better able to

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17 Most of the key explanatory variables were in the association survey module, such as information about association leadership and dynamics between members and association leaders. 714 respondents were not given the association survey module because they were not members of the community association and did not have a family member who was a member of the association. Due to missing variables for key variables, 49 respondents were excluded from the analysis. All questions had the option of “Don’t know” and “Don’t want to respond,” which are re-coded as missing.

18 Unimproved water sources include dug wells, unprotected springs, water carts, tanker truck-provided water, surface water, bottled water; the primary improved water source is piped water on premises (WHO, 2015).
5.2. Data and Methods

capture water security, especially in rural communities that combine multiple sources to satisfy different needs. Sullivan (2002) argues for a water poverty index that includes water availability and access (physical water availability, water quality, water access, time to collect water) and human welfare indicators (social and economic measures of poverty, ecosystem health, community well-being, economic welfare). A key requirement of this type of index is that it must be adapted to the local context and local data availability.

I developed a water security and reliability index that uses survey questions that I selected and wrote based on interviews with 87 rural residents and leaders about water access in their communities. The measures are broad enough to apply in multiple settings while also appropriately tailored to local conditions. The creation of this measure demonstrates my care and attention to detail when conducting fieldwork and accurately testing my theory. I drew on deep local knowledge to create an appropriate measure instead of using an easier, more common measure of service reach (piped water access). I create a z-score index of the following measures from the household survey, which are equally weighted:

19 She pilots the index with indicators to reflect resources (water availability), access (piped water, time spent in water collection, conflicts), capacity (human development indicators), use (domestic, agricultural, livestock, and industrial consumption rates), and environment (crop loss, erosion) (Sullivan, Meigh, and Giacomello, 2003).

20 In the future, I would like to include objective measures of water quality and incorporate other socio-economic factors, the data for which are currently unavailable.
CHAPTER 5. TRADING FAVORS - WATER ACCESS

<table>
<thead>
<tr>
<th>Concept</th>
<th>Measure</th>
<th>Operationalization</th>
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</thead>
<tbody>
<tr>
<td>Access</td>
<td>Water piped in household</td>
<td>Binary</td>
</tr>
<tr>
<td></td>
<td>Access to water cistern</td>
<td>Categories (0-3)</td>
</tr>
<tr>
<td></td>
<td>Satisfaction with overall community water access</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Security</td>
<td>Days without water in the last month (reverse coded)</td>
<td>Categories (0-4)</td>
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<tr>
<td></td>
<td>Reliance on emergency water truck in last year (reverse coded)</td>
<td>Binary</td>
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<tr>
<td>Quality</td>
<td>Satisfaction with water quality</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Equity</td>
<td>Perception of equal water use in community</td>
<td>Binary</td>
</tr>
</tbody>
</table>

Table 5.1: Water Security Index

The z-score is a standardized measure that transforms a variable’s value for each observation into the number of standard deviations away from the mean observed value. The index calculates the mean z-score value among all water access variables for each observation.

\[
WaterIndex_{ijm} = \sum_{V=1}^{N} \frac{X_{Vicm} - \bar{X}_{Vicm}}{\sigma_{X_{Vicm}}} \frac{1}{N}
\]  

(5.1)

where \(X_{Vicm}\) is the value of variable \(X_V\) for individual \(i\) in community \(c\) in municipality \(m\). \(N = 7\) in the list of water access variables above. The mean and standard deviation of the variable are calculated for the full sample.

Concentration of Voting

Vote share in the most voted city council candidate at a given polling station is my preferred measure of vote concentration due to its specific salience in rural communities. When asked if their community had a relationship with city council members, interview respondents across many communities spontaneously offered specific vote counts, or at least vote shares, for the most voted
candidate at their polling station in the last election.\textsuperscript{21} I calculate it as follows:\textsuperscript{22}

\[
VoteShareMostVotedCC_c = \max(v_{pc})
\]

(5.2)

where $v_{pc}$ is the vote share for every candidate $p$ at the primary polling station for community $c$ (the number of votes for candidate at the polling station divided by the total number of valid votes at the polling station).

Figure 5.1: Concentration of Vote (2016) and Share of Respondents at Polling Station

Respondents reported their 2016 polling station. In some communities, all respondents voted at the same place, while in others they voted at up to nine different polling stations. The closer the community is to the urban city center, the more likely they are to vote at multiple polling stations,

\textsuperscript{21}I noted the reported vote counts during the interviews. When I returned home and checked the online, public, official election results for the community’s polling station, the reported numbers were often exactly right.

\textsuperscript{22}All calculations use valid (not blank or null) votes. As an additional measure of vote concentration, I calculate a fractionalization index for city council member candidate vote share. The results are similar; see results in the Appendix.
and this relationship is statistically significant. I account for this variation by calculating the share of survey respondents who report voting at the modal polling station in their community (*Share of Respondents at Polling Station*). This variable is calculated using the full survey sample.

Figure 5.1 shows that concentrated voting is more likely in communities where residents vote at the same polling station. If residents are spread out across multiple polling stations, it is both more difficult to concentrate the vote at the primary polling station and inefficient to do so. Coordination is difficult; if politicians trade public services based on bloc voting but the community cannot clearly demonstrate who it voted for, then it is not worth it for communities to coordinate their votes.

**Figure 5.2: Concentration of Vote and Polling Station Size (2016)**

Note: Includes 120 communities in full sample.

I also calculate the total number of votes for city council members, which I transform because of its skewed distribution (*Total Votes at Polling Station (ln)*). Figure 5.2 shows the negative rela-
5.2. Data and Methods

tionship between size of the polling station and concentration of voting, which is consistent with the widespread theory that larger groups are more difficult to coordinate (Olson, 1965). It demonstrates the wide range of concentration of voting by polling station, where the median polling station gave 28% of its votes to the most voted candidate at the polling station. The minimum is 8% and the maximum is 61%, and a quarter of the polling stations had top vote shares of 36-61%. With a median of 40 candidates for city council member among sample municipalities, it is impressive that communities can coordinate more than a third of their members to vote for the same candidate.\(^{23}\)

Figure 5.3: Community-Level Concentration of Vote by Municipality

![Graph showing concentration of vote by municipality]

Note: Includes 120 communities in full sample.

Vote concentration varies substantially within and across municipalities, as shown in Figure 5.3. Crateús has the lowest mean vote concentration of 22% among communities in the sample, while Catunda has the highest with 40%. A community in Crateús that gave 30% of its votes to its most voted candidate is seen by politicians as having relatively high coordination, while a similar community in Catunda would be seen as having low coordination. This empirical finding is

\(^{23}\)The 10 municipalities ranged from 23 to 135 candidates for city council.
important to my theory and will be incorporated in the quantitative analysis by including municipal fixed effects.

As an additional measure of vote concentration, I calculate a fractionalization index for city council member candidate vote share:

\[
Fractionalization_c = 1 - \sum_{p=1}^{n} (v_{pc}^2)
\]

(5.3)

where \(v_{pc}\) is the vote share for candidate \(p\) at the primary polling station in community \(c\), and \(n\) is the total number of candidates for city council member that receive votes at that polling station. I note that the Fractionalization variable is lower for communities with concentrated voting, and higher for communities with dispersed voting. Results are included in the Appendix.

**Community Organizing**

Within the broader concept of community organizing, I focus on variation in leadership and community activity. Strong leadership involves the participation of central community figures in the community association leadership (president or other board position) whom members elected to the leadership position. Members seek out the leader for advice on collective and political topics.

Empirically, I find that the community leaders in my sample tend to be more educated, older, and male, and they are likely to own more household assets than members. Nevertheless, they are not highly educated, with the mean leader still falling below a middle school education level. While they are more likely to be large landowners (8% of leaders vs. 5% of members) and less likely to be recipients of the conditional cash transfer program Bolsa Família (47% of leaders vs. 52% of members), they are not the traditional wealthy, landed elites that the literature on elite capture would indicate (see Appendix for details and t-tests).
Within the group of association leaders, there is variation in key aspects of their leadership as president. Two main features of strong leadership are that 1) one or more strong leaders are repeatedly elected to association leadership, and 2) the president has a strong mandate because she competed for the position. I identify two variables that capture leadership turnover and leadership competition.

Unfortunately, due to coding of the tablet-based survey, the data on leadership competition are limited to individuals who reported that the association used a “secret vote” to select the president and only include 72 communities. Many communities used an open vote and were not asked the number of candidates. The follow-up survey in 2019 will ask the same question of all respondents and provide a more robust sample. I therefore do not include the competition variable in my main empirical specifications, but I do include it in preliminary analysis.

- **Association President Same Person or Family** is a binary variable that is 1 if respondent reports that the association president has tended to be the same person or from the same family, and 0 where families trade off or many different people rotate through.
- **Association Leadership Competition** is the number of candidates who competed for the position of association president in the last election, as reported by respondents.

In my theory, community activity involves frequent participation by group members in public events, informal socializing, and community and other associations, such as school, church, sports, or women’s groups (Gordon and Babchuk, 1959). Members participate willingly, share their opinions, and contribute to the meetings. There is a strong feeling that by working together, the group can achieve collective goals. Two main features of community activity are that high activity 1) leads to high trust within the group, and 2) leads members to have higher satisfaction with the association.\(^{24}\)

\(^{24}\)In general, high participation in the group correlates with high satisfaction, and dissatisfied members are unlikely to participate. Still, it is possible for an individual to express satisfaction with an active association and not participate.
I identify two variables that capture trust in others and satisfaction with the association: 25

- **Trust in Others** is a scale from 1-4: not at all trustworthy to very trustworthy.
- **Satisfaction in the Community Association** is a scale from 1-5: not at all satisfied to very satisfied with the association.

As I described in Chapter 2, community activity and leadership are endogenous in the long run, but I consider them to be separate dimensions in the short run that play different roles in coordinating before and after elections. Figure 5.4 shows that strong leadership, as measured by constant leadership of one person or family, is independent from community activity, as measured by trust in others. Communities where the same person or family leads the community association can and do still have high trust among community members.

Note: Household survey data, n=1,125. “Don’t know” or “Don’t want to respond” responses are excluded.

---

25I consulted other social capital measurement instruments such as the Integrated Questionnaire for the Measurement of Social Capital (SC-IQ) (Grootaert, Van Bastelaer et al., 2002) and the Social Capital Assessment Tool (Krishna and Shrader, 1999) when designing the survey. I then adapted the questions to the local context based on my experiences during qualitative interviews.
5.2. Data and Methods

Additional Explanations and Controls

As demonstrated by the case studies in Chapter 4, the presence of local wealthy elites and politicians in the community may affect the community’s ability to coordinate around a particular candidate and influence access to public services. I include variables for:

- *Elites Attend Assoc. Meetings* is a binary variable that is 1 where wealthy families (with land, businesses, or other professions) actively attend meetings and participate in association activities, and 0 where they somewhat or do not attend or participate.
- *CC Member Lives in Community* is a binary variable that is 1 where respondents report that a current or past city council member lives in the community, and 0 if not.

A community’s geographic isolation is a key structural factor that is highly correlated with my key variables, which I measure as follows:

- *Kilometers to City Center (ln)* is the natural log of the distance in kilometers from the community, based on the GPS coordinates of the community’s well collected in the survey, to the mayor’s office in the urban center of the municipality, based on coordinates of the mayor’s office in Google Maps.\(^{26}\)

The remaining demographic variables are:

- *Bolsa Família Recipient* is a binary variable that is 1 if the respondent reported that the family receives benefits from the conditional cash transfer, and 0 if they do not.
- *Household Assets Index* is a z-score of the sum of the following services and household assets as reported by respondents: cellphone, land-line phone, car, washing machine, microwave, motorcycle, bathroom in home, computer or tablet, internet, refrigerator, television, electricity, public sanitation, septic tank, trash collection, and paved road.\(^{27}\)

---

\(^{26}\)I use the `pointDistance` command from the `raster` package in R, which calculates the geographic distance between two points on the WGS ellipsoid.

\(^{27}\)I use a household assets index and an indicator for Bolsa Família recipient instead of self-reported income in this analysis for a number of reasons, though the survey did ask about income. In rural areas, formal employment is unusual and many residents are subsistence farmers, so income is difficult to calculate. Some respondents may have inflated their reported income to seem less poor. Others may have reduced their reported income for fear of losing access to government programs, since the government had proposed changing income cut-offs for welfare benefits around the time of the survey.
• *Male* is a binary variable that is 1 if the respondent was male, and 0 if female.
• *Age* is a continuous variable for the respondent’s age in years as reported by the respondent.

### Summary of Variables

I summarize the operationalization of my key concepts in Table 5.2.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Variables</th>
<th>Source</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Access</td>
<td>Water Access Security and Reliability Index</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td>Concentration of Voting</td>
<td>Vote Share for Top City Council Member (+)</td>
<td>Electoral</td>
<td>Comm.</td>
</tr>
<tr>
<td>Community Activity</td>
<td>Trust in Others (+)</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td></td>
<td>Satisfaction with Association (+)</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td>Leadership Strength</td>
<td>Constant Leadership (+)</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td></td>
<td>Competition for Leadership (+)</td>
<td>Survey</td>
<td>Comm.</td>
</tr>
<tr>
<td>Economic and Political Elite</td>
<td>Elites in Association (+)</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td></td>
<td>Resident City Council Member (+)</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td>Polling Station</td>
<td>Total Votes at Polling Station (−)</td>
<td>Electoral</td>
<td>Comm.</td>
</tr>
<tr>
<td></td>
<td>Share of Respondents at Polling Station (+)</td>
<td>Electoral</td>
<td>Comm.</td>
</tr>
<tr>
<td>Geography</td>
<td>Kilometers to City Center</td>
<td>Geospatial</td>
<td>Comm.</td>
</tr>
<tr>
<td>Wealth</td>
<td>Bolsa Familia Recipient</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td></td>
<td>Household Assets Index</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td>Demographics</td>
<td>Male</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>Survey</td>
<td>Ind.</td>
</tr>
</tbody>
</table>

Note: Positive or negative signs reflect the predicted direction of the coefficient. The sign on the Concentration of Voting variable reflects its predicted relationship when it is an explanatory variable for Water Access. The other variables have the same predicted direction for both dependent variables. See Appendix for summary statistics.
5.2. Data and Methods

5.2.2 Empirical Models

I use three empirical models to test my hypotheses about the specific relationship between collective action, bloc voting, and public goods provision.\(^{28}\)

My first model tests Hypotheses 1 and 2 and predicts water access using community activity and leadership variables. It tests the overall relationship between these variables and water access:

\[
WaterIndex_{icm} = \beta_1 \text{Leadership}_{icm} + \beta_2 \text{CommActivity}_{icm} + \Omega X_{icm} + \alpha_m + \epsilon_{icm}
\] (5.4)

The second and third models test my primary mechanism that community organizing helps residents to coordinate their votes, and that coordinated voting leads to better public service access. My second model tests Hypotheses 3 and 4 and predicts community concentration of voting using community activity and leadership variables:

\[
VoteShareTopCC_{cm} = \beta_1 \text{Leadership}_{icm} + \beta_2 \text{CommActivity}_{icm} + \Omega X_{icm} + \alpha_m + \epsilon_{icm}
\] (5.5)

My third model tests Hypothesis 5 and measures the relationship between concentration of voting and water access. I control for all of the community organizing variables (community activity and leadership), since I expect them to predict both concentration of voting and water

\(^{28}\)Variables are indexed for individual \(i\) in community \(c\) in municipality \(m\). Where variables are collected only at the community level, such as Concentration of Voting, each individual \(i\) receives her community’s value.
access:

\[
WaterIndex_{icm} = \beta_1 VoteShareTopCC_{cm} + \Gamma CommOrg_{icm} + \Omega X_{icm} + \alpha_m + \epsilon_{icm}
\]

(5.6)

In the models, \(WaterIndex_{icm}\) is the water access security and reliability index for individual \(i\) in community \(c\) in municipality \(m\), \(VoteShareTopCC_{cm}\) is the vote share for the most voted city council candidate in community \(c\) in municipality \(m\).\(^{29}\) \(CommActivity_{icm}\) is a series of variables for trust in others and satisfaction with the community association, \(Leadership_{icm}\) is a series of variables for constant leadership and competition for leadership, \(X_{icm}\) is a series of control variables, and \(\alpha_m\) is a municipal fixed effect.

My theory predicts that community activity and leadership factors are both important and contribute to water access and voting behavior. Community activity can help, with or without leadership. Strong, unified leadership helps, with or without community activity. Communities with both factors will benefit from the presence of both.\(^{30}\)

I use municipal fixed effects because my theory focuses on sub-municipal variation. Some municipalities had higher concentration of voting on average than others, and all of the actors

\(^{29}\)This variable is collected at the community level, so I only include \(c\) and \(m\) in the subscript, but the analysis involves all individual observations. Each individual observation \(i\) receives her community’s value. Since all individuals in the same community have the same value, I cluster standard errors at the community level.

\(^{30}\)An interaction model may be appropriate if the impact of community activity was contingent on or varied depending on the presence of leadership. Similarly, it would be appropriate if I believed that the impact of strong leadership depended on the degree of community activity. I have tested interactions for \(Leadership \times CommActivity\), but I do not find them to be statistically significant. A future study will use a conjoint experiment to examine community members’ perceptions of which community features are most helpful for getting access to services, coordinated voting, and other factors, and I will test if there are interaction or substitution effects among the key predictors of trust, association participation, constant leadership, leadership competition, and resident politician.
in my theory make decisions based on others within their municipality. Community members consider the municipal electoral landscape when deciding which candidates to endorse and how to coordinate their votes. Similarly, politicians compare the support that they received from different communities within the municipality when allocating resources.

Some variables are collected at the individual level, while others are measured at the community level. All community level variables are assigned to the individual observations. Since individual observations within the same community are not independent, I cluster standard errors at the community level. There are 114 unique clusters in the sample used in this chapter. All models use ordinary least squares regression.

### 5.3 Results

#### 5.3.1 Who Has Better Water Access?

I first test whether community organizing has an overall impact on public service access. My theory predicts that communities with strong leadership and active members are more likely to have better water access. Specifically, I expect to see better water access where leaders are the same person or family, where trust is high, and where association satisfaction is high. In Table 5.3, I analyze predictors of my water security index.

**Leadership**

Looking first at leadership, I find evidence consistent with Hypothesis 1 that communities have better water access where the president is the same person or from the same family (0.18 standard deviation increase), as opposed to from different families or different people.
CHAPTER 5. TRADING FAVORS - WATER ACCESS

Table 5.3: Water Access and Community Organizing

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable: Water Access Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assoc. Pres. Same Person or Family</td>
<td>0.176** (0.075)</td>
</tr>
<tr>
<td>Trust in Others</td>
<td>0.121*** (0.040)</td>
</tr>
<tr>
<td>Association Satisfaction</td>
<td>0.156*** (0.030)</td>
</tr>
</tbody>
</table>

Observations 1,227
R² 0.125
Adjusted R² 0.110
Residual Std. Error 0.889

Note: Includes municipal fixed effects and clustered standard errors at community level. Includes controls (not shown) for elites attend association meetings, city council member (current or past) lives in community, votes at polling station (ln), share of respondents at the primary polling station, distance to city center (km, ln), male, age, bolsa familia recipient, and household assets index. See Appendix for full model.

To request services and access the bureaucracy, leaders require knowledge of bureaucratic procedures and connections in multiple levels of government. A single person or family is more likely to maintain knowledge of complicated bureaucratic procedures and may be better positioned to pull strings with politicians. Constant, strong leaders are more likely to have direct, personal relationships with politicians that can facilitate access to resources.

A constant leader knows whom to call and is likely to have the phone numbers and contact information for municipal politicians and bureaucrats. When the pump on the well or a pipe breaks, the leader can easily share that information with the appropriate actor. Politicians are more likely to listen to a leader with whom they have negotiated in the past and expect to work with in the future. I find that constant leadership is associated with higher water access, regardless of competition level (see Appendix).
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Community Activity

Next, I find evidence supporting Hypothesis 2 about community activity. Communities have better water access where there is higher satisfaction in the association and higher trust in others. Going from not at all trustworthy (1) to very trustworthy (4) leads to a 0.36 standard deviation in increase in water access; going from not at all satisfied (1) to very satisfied with the association (5) leads to a 0.62 standard deviation increase in water access.

These findings are consistent with work by Ostrom (1990) and others, where common pool resource management is most effective when communities have active, trusting group members. In active communities, members have more opportunities to discuss and select group actions. They are more likely to demand that group leaders take action and seek resources outside the community. For example, in some communities that I visited, association members pitched in to pay the bus and hotel costs for their president to travel to the state capital and lobby for access to a new development program. This coordination was possible because members had high levels of trust and reciprocity and viewed the association as an important, positive actor in the community.

I acknowledge the endogenous relationship between water access and association satisfaction, since better water access could lead to higher satisfaction, especially if the association played a prominent role in securing the water access. Nevertheless, my interviews suggest a positive feedback loop whereby communities that see the association as being effective are more likely to participate, leading to greater success in getting resources, and so on.

5.3.2 Which Communities Coordinate Their Votes?

Having demonstrated the relationship between community organizing and water access, I test the primary mechanism in my theory. I argue that communities coordinate their votes in one candidate
to increase their bargaining power, and my theory predicts that communities with strong leadership and active members are more likely to concentrate their votes. Specifically, I expect to see higher concentration of voting where leaders are the same person/family and face high competition, where trust is high, and where association satisfaction is high. In Table 5.4, I analyze predictors of vote share in the most voted city council member at the polling station.

### Table 5.4: Vote Concentration and Community Organizing

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Vote Share in Most Voted CC Member</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Assoc. Pres. Same Person or Family</td>
<td>$-0.027^*$</td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
</tr>
<tr>
<td>Num. Candidates Assoc. Pres.</td>
<td>0.020</td>
</tr>
<tr>
<td>Trust in Others</td>
<td>0.008</td>
</tr>
<tr>
<td>(0.005)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Association Satisfaction</td>
<td>0.005</td>
</tr>
<tr>
<td>(0.005)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Assoc. Pres. Same Person/Family * Num. Candidates</td>
<td>0.015</td>
</tr>
<tr>
<td>(0.022)</td>
<td>(0.022)</td>
</tr>
</tbody>
</table>

| Observations | 1,227 | 801 |
| R² | 0.364 | 0.406 |
| Adjusted R² | 0.353 | 0.388 |
| Residual Std. Error | 0.099 | 0.094 |

**Note:** Preliminary findings; a follow-up survey in 2019 will include more data. Includes municipal fixed effects and clustered standard errors at community level. Observations are at the individual level, and values for community-level variables are assigned to individuals. The second column has fewer observations due to the coding issue described in the text. Vote share dependent variable is at the community level. Explanatory variables are at the individual level. The model includes variables (not shown) for city council member in community, elite participation in association, share of respondents at polling station, total polling station votes (log), distance to city center (km, ln), male, age, bolsa família recipient, and household assets index. See Appendix for full model.

### Leadership

My theory predicts that a single leader or family who faces competition would be more likely to coordinate group members to vote for the same candidate, because those communities have
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A clear person for politicians to reach out to as political brokers. Specifically, I expect constant leadership to help communities to coordinate their votes in places where there is high competition to become president. However, I expect that constant leadership would hurt where there is low or no competition.\footnote{Where there is high competition, a constant leader is challenged by other community members, and her supporters are more likely to follow her voting recommendation during municipal elections. Constant leaders with demonstrated strong followings in a competitive environment are more attractive brokers. On the other hand, where there is low competition, it is hard for a political candidate to know if the long-time leader has the support of the community or not, since the candidate may have been the only option. Constant leadership without competition is less attractive to a politician than a new president who is eager to mobilize the community.}

I find in Table 5.4, Column 1, that, on average, communities with the same person or family as president had a 3 percentage point (pp) lower vote share than those with turnover in the presidency. However, this finding does not incorporate the important dimension of leadership competition, which I predict will interact with constant leadership.

Figure 5.5 illustrates that leadership turnover and competition interact: constant leadership is associated with higher vote concentration (as my theory predicts) where communities have high competition for association president but not where they have low competition. The majority of communities in the sample had low competition for president, so they drive the overall vote concentration finding. However, when I test the interaction in Column 2, I find that while the coefficients go in the predicted direction, they are not statistically significant.

I highlight that these are preliminary findings. Unfortunately, due to coding of the tablet-based survey, the data with information about the number of association presidents are limited to individuals who reported that the association used a “secret vote” to select the president and only include 72 communities. Many communities used an open vote and were not asked the number of candidates. Likely due to the limited sample, this interaction effect is not statistically significant after including controls, fixed effects, and clustered standard errors. The follow-up survey in 2019 will ask the same question of all respondents and provide a robust sample.
Figure 5.5: Vote Concentration by Number of Candidates and Leadership Turnover

Note: Limited to individuals who reported that the association used a “secret vote” to select the president; 72 communities represented. Number of candidates is the median number reported by respondents in each community, since respondents reported slightly different numbers of candidates in the previous association election. Vote share and number of candidates are community-level variables that are the same for all respondents within a community; leadership is an individual-level variable. Lines calculated using OLS on a simple regression without controls, municipal fixed effects, or clustered standard errors. The plot looks similar if communities with 3 or 4 candidates are pooled together.

Community Activity

My theory predicts that vote concentration is more likely in communities with high trust and satisfaction with the association. In Table 5.4, I find evidence for Hypothesis 4 that communities with higher trust had a higher vote share in the most voted candidate. Going from not at all trustworthy (1) to very trustworthy (4) is associated with a 3pp increase in vote share for the most voted candidate, though this is significant in the full sample at $p = 0.13$. In this analysis, I do not find that association satisfaction plays a strong role in coordinated voting. While the association is a platform to coordinate the group, satisfaction in the association could be independent of
5.3. Results

these dynamics; it is quite possible that someone could be an dissatisfied, inactive member of the association but still attend a political rally hosted at the community center.

The preliminary findings provide weak evidence that strong leadership, particularly constant leaders who face competition, and high trust are likely to play a role in coordination around elections. During interviews with rural residents, respondents tended to frame discussions of vote concentration by focusing on their leaders, and others spoke about the role of reciprocity within the group. In communities that did concentrate their votes, residents pointed to the association president’s ability to mobilize group members by bringing candidates to association meetings and endorsing a specific person. In communities that did not concentrate their votes, residents blamed the inability of leaders to convince group members of the value of bloc voting, or they blamed their neighbors for ignoring the collective choice.

Additional Explanations

My theory focuses on the way that citizens can take advantage of their electoral environment – especially the fact that their vote can be monitored at their polling station – to trade their votes for access to public services. As I described in the earlier case studies, communities (such as Community C-W) have even been known to petition to have their own small polling station so that they can demonstrate their loyalty to candidates and use this electoral tie for access to services.32

Therefore, different polling station characteristics are likely to influence community members’ ability and incentive to coordinate, and I test these explanations in Table 5.5. I expect that citizens are more likely to coordinate if they vote at a smaller polling station. A large polling station is likely to include citizens from either multiple small communities or one large community. In the first case, the votes of different communities are reported together, and politicians are unable

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32This also demonstrates that polling station characteristics are not exogenous, and community organizing can influence the size and make-up of polling stations.
to monitor the votes of a specific community. It is not worth it to citizens to take the effort to coordinate their votes if they cannot bargain with the election results. In the second case, it is much harder to coordinate a large group of people. One respondent in a large community that struggled to coordinate its votes said, “People are always divided, you know? It’s difficult. If this were a small community then it would be easier to get people together. Everyone has their own mind and opinion. It’s tough.”33 I find, consistent with these explanations, that smaller polling stations are also more likely to have higher concentration of voting.

Table 5.5: Vote Concentration and Polling Station Characteristics

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Vote Share in Most Voted CC Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Votes at Polling Station (ln)</td>
<td>–0.030* (0.015)</td>
</tr>
<tr>
<td>Share of Respondents at Primary Polling Station</td>
<td>0.104* (0.059)</td>
</tr>
<tr>
<td>Kilometers from City Center (ln)</td>
<td>0.048** (0.023)</td>
</tr>
</tbody>
</table>

| Observations | 114 |
| R² | 0.281 |
| Adjusted R² | 0.196 |
| Residual Std. Error | 0.110 |

Note: Includes municipal fixed effects. All variables at the community level.

I expect that citizens are more likely to coordinate if they all vote at the same polling station, and I find evidence supporting this. Going from 50% of respondents at the primary polling station to 100% of respondents at the primary polling station is associated with a 5pp higher vote share in the most voted candidate.34 This is consistent with my theory that it is challenging for politicians

33Interview 59, August 9, 2017.
34Recall that the electoral data is matched based on the polling station where the most survey respondents voted in 2016 (modal polling station).
to monitor the collective votes of community members if they are spread across multiple polling stations, therefore it is not strategic for communities to coordinate their votes (nor is it strategic for politicians to seek support in those communities).

I also find that communities that are farther from the city center are more likely to coordinate their votes. This is the one feature of polling stations that is harder for communities to manipulate. It appears that the most isolated citizens are the ones who are coordinating their vote. Given their distance to the center, coordinated voting is probably the best way for them to signal their coordination abilities, have enough bargaining power to be heard, and have their needs met by the municipal government.

In my main specification in Table 5.4, I tested additional explanations that the presence of political and economic elites will influence vote concentration. I find that these explanations are substantively and statistically significant. There is 8.1pp higher vote share where there is a current or past city council member living in the area and 2.4pp higher vote share where local wealthy elites participate in association activities (see Appendix). As shown in earlier case studies, a politician based in the community is a clear person for group members to support.

While petitioning for a new polling station could slightly change the distance, it is likely to move between nearby communities. The creation of a new polling station is more likely to impact the number of votes and the make-up of voters than the distance to the city center.

An additional plausible explanation is that fewer candidates travel to isolated communities, so there is less competition for the group’s vote and therefore it is more likely that the group will give a higher share of its vote to one candidate. In addition, isolated communities may be more likely to be dominated by a strong leader acting as a local elite patron (in an Elite Coercion community), as Shami (2017) finds in rural Pakistan.

Cruz, Labonne, and Querubin (2017) make a similar argument that voters who are closer in social distance to a candidate will require fewer intermediaries to reach the candidate. They provide evidence from the Philippines that candidates are more successful in a village in which they are central figures in local social networks: where their family lives in the village or where their political brokers are central.
Robustness Check

The main analysis in this chapter uses household survey data from 2017 to predict voting behavior in 2016. This is not ideal, and I wrote in Section 5.2 that my preferred specification would be to use panel data for the same community across multiple elections. However, this is not possible due to time and cost constraints. My interviews and other scholars describe the slow-moving characteristics of communities, especially those regarding the nature of leadership and social dynamics over time. Nevertheless, it is possible that voting behavior could drive community characteristics and not the other way around.

To address these concerns, I conduct similar analysis using data from a smaller household survey implemented two to three weeks before the 2016 municipal election. I designed and implemented this original survey in 104 small communities in Ceará with 415 respondents (see Appendix). The sample included communities with and without associations in rural and urban areas.\(^\text{38}\) I use community characteristics before the election to predict later voting behavior. I find that communities with associations and especially with high satisfaction in the association are more likely to concentrate their votes in the election three weeks later. Communities that have a current city council member living in the area (as of three weeks prior to the election) were also more likely to concentrate their votes.\(^\text{39}\)

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\(^{38}\) The sample is small because I had very limited funding. I opted to run the survey in a large number of communities with fewer respondents per community in order to maximize sub-municipal variation.

\(^{39}\) I do not include variables for leadership or other association characteristics; most respondents did not answer those questions since there was no association in the community or they/a relative were not members.
5.3.3 Does Bloc Voting Improve Water Access?

The third model studies the relationship between concentration of voting and the dependent variable of water access. I include community organizing characteristics as controls because they predict both voting behavior and water access.

<table>
<thead>
<tr>
<th>Table 5.6: Water Access and Vote Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable:</td>
</tr>
<tr>
<td>Water Access Index</td>
</tr>
<tr>
<td>(1)</td>
</tr>
<tr>
<td>Vote Share in Most Voted CC</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Most Voted CC Won</td>
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<tr>
<td>Observations</td>
</tr>
<tr>
<td>R²</td>
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<tr>
<td>Adjusted R²</td>
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<tr>
<td>Residual Std. Error</td>
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<tr>
<td></td>
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<tr>
<td>Note:</td>
</tr>
<tr>
<td>*p&lt;0.1; **p&lt;0.05; ***p&lt;0.01</td>
</tr>
</tbody>
</table>

Note: Includes municipal fixed effects and clustered standard errors at community level. Includes controls (not shown) for trust in others, association satisfaction, leadership turnover, idea proposal by leaders, elites attend association meetings, city council member (current or past) lives in community, votes at polling station (ln), share of respondents at the modal polling station, distance to city center (km), male, age, bolsa família recipient, and household assets index. See Appendix for full model.

Consistent with Hypothesis 5, I find in Table 5.6 that concentrated voting is associated with better public services: communities have better water access where they had a higher vote share in their most voted city council candidate in the previous election. Going from 10 percent to 60 percent vote share in the most voted candidate is associated with 0.39 standard deviation increase on the water index scale.
I expect that bloc voting helps in two ways. In the first, the community’s bloc vote helps the candidate win the election, and after the election the community can leverage its support for the candidate to get priority for access to services. Even if the candidate loses, the candidate is likely to have strong personal or partisan ties to elected officials or bureaucrats. Communities can ask the candidate to help them in between elections in exchange for support in a future election. In the second, bloc voting signals a community’s ability to coordinate.\(^{40}\) The community is therefore also more likely to mobilize after elections and demand services, so politicians may be more likely to prioritize these areas in order to avoid negative press.

I find that it does not matter if the most voted city council candidate was actually elected. This suggests that communities can use concentrated voting to increase their bargaining power, regardless of whether the candidate wins or loses. This is consistent with my experience where many respondents gave the name of their most voted candidate and sometimes even accurate vote counts from the previous election when describing their communities.

In one community that I visited (Community Y in Figure 4.2), residents explained that their most voted candidate lost the election but still had connections to other politicians and was able to help them gain access to public services. This community falls between the “collective self-governance” and “opinion leader cooperation” categories, with high community activity and multiple active leaders that take part in association leadership. Residents got together to vote for a particular candidate with familial ties to the community because they believed he would help them if elected. In 2016, the community gave 32% of its votes (61 of 193 votes) to a losing candidate. The respondent said that their candidate lost even though he received more votes than other win-

\(^{40}\)For example, Gottlieb and Larreguy (2018) find that politicians use bloc voting at the precinct level as a signal of a community’s coordinating capacity: stronger bloc voting is associated with higher coordination in Senegal.
ning candidates, and this is confirmed in the data.\textsuperscript{41} However, the losing candidate has connections with a state representative who has helped the community get access to resources.\textsuperscript{42}

My theory describes a long-term relationship, and it is possible that better water access is causing coordinated voting, not the other way around. A community could be rewarding an incumbent who targeted public services to the community or a candidate who helped with water resources. This endogeneity and reverse causality are consistent with my story and reflect the long-term cycle whereby community members and politicians trade favors of votes and public services, respectively.\textsuperscript{43}

\section{Conclusion}

My theory of trading favors describes a series of complex relationships between community members, group leaders, and politicians that shapes not only election outcomes but the distribution of essential public services. This relationship is challenging to observe and even more difficult to measure. By combining the an original household survey and electoral data with in-depth interviews, I am able to measure the relationships in the short-term.

The quantitative analysis confirms that community organizing helps poor citizens to get access to services, and it demonstrates that bloc voting is one of the primary mechanisms through which citizens can bargain with politicians.

\textsuperscript{41}Their candidate received 837 votes but did not get a seat on the council. Eight of the fifteen winning council members had fewer votes, including as low as 643 votes, but this community’s candidate lost because his party coalition was only allocated one seat and he was second place in the coalition.

\textsuperscript{42}Interview 70, August 10, 2017.

\textsuperscript{43}In an extension of this project, I seek to compare long-term panel data of geo-coded community development projects with precinct-level voting patterns. I have collected some development data from Brazilian state agencies and am in the process of collecting more. However, reliable, geo-coded data is challenging to track down, if it exists at all.
First, I find that water access is most reliable and secure in communities with high community activity and constant leadership. The community activity finding is consistent with the common pool resource literature, which focuses on the participation of all users in the active management and maintenance of water resources. Nevertheless, my findings highlight that a constant leader, regardless of competition for the position, is important for navigating state bureaucracies and leveraging relationships in other levels of government.

Second, I find evidence for my main mechanism that community organizing influences water access through a key mechanism of bloc voting. I find that groups with strong leadership and community activity are more likely to concentrate their votes, which helps them gain reliable, secure water access. In particular, constant leaders who face competition help communities coordinate their votes. Concentrated voting is most likely where residents vote at the same polling station and where they vote at a smaller polling station. I also find that communities that concentrated their votes are more likely to have secure, reliable water access.

During my interviews, the strategic role of both community organizing and concentrated, bloc voting came up regularly. Respondents explained that leaders in the community would often endorse a particular candidate and try to mobilize community members to vote for that person. In one instance, community members even petitioned to get a polling station in their community so that they could concentrate their votes in a particular candidate, clearly demonstrate their loyalty, and use that electoral tie to force politicians to maintain their water resources and pave the road.

This chapter provides a rich cross-section of local social and political institutions and their influence on water access and sustainable development. It provides a short-term snapshot of these complex, long-term relationships, which are explored in more detail in the next chapter.

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44 Many rural communities rely on a shared water source (well, local reservoir), and community associations play a critical role in requesting water infrastructure and maintenance from municipal and state governments.
Chapter 6

Electoral Concentration in the Long-Run

My theory of trading favors involves a long-term relationship between organized communities and local politicians that spans election cycles. Do the same communities organize their votes in each election? Do they shift allegiances between candidates, and when is this most likely?

As communities decide if or how to concentrate their support and votes, they consider the actions already taken by politicians and promises for the future. Similarly, as politicians decide how to allocate scarce resources across space and time, they consider the previous voting patterns of each community and promises for the future.

The hypotheses and analyses in this chapter relate primarily to my second observable implication that organized communities are more likely to coordinate their votes. This chapter contributes a long-term perspective that is important for understanding the cyclical nature of trading favors.

Unfortunately, testing long-term dynamic relationships requires data on the spatial and temporal distribution of public services, which are extremely difficult to obtain, if they even exist. Most public service data are aggregated at the municipal level, and they rarely include geographic coordinates necessary to analyze sub-municipal variation in distribution and merge with precinct-level
electoral data. I therefore focus on variation in electoral behavior over time, which I am able to track for each electoral section (approx. 100-400 voters).

I draw predictions from my theory and test my hypotheses using voting data for 15,566 sections in 182 municipalities across the state of Ceará during five municipal elections. I use panel data models to analyze the relationship in voting behavior between elections, depending on multiple factors such as the previous most voted candidate running for office, the previous most voted candidate being an incumbent politician, and the size of the section.

My results show that bloc voting is very consistent over time. For example, a section with 75% of its votes for the most voted candidate in one election is still likely to give over 55% of its votes to the most voted candidate in the next election (who could be the same or a different candidate). There are some situations where bloc voting is less likely, for example in communities that switch (i.e. they do not select the same top candidate as the previous election, even though the candidate ran again) or whose previous most voted candidate did not run.

Still, even in those situations, bloc voting is remarkably consistent. For example, among the switchers, a section that gave 75% to its most voted candidate in one election still gives over 45% on average to a new top candidate. These findings provide quantitative evidence for the observable implications of my theory that involve bloc voting and other local voting behavior over time.

### 6.1 Hypotheses

Which groups are more likely to concentrate their votes over time? My theory argues that more organized communities (with high community activity and/or strong, unified leadership) are more likely to concentrate their votes in a single candidate for local office. Since community organizing is “sticky” and changes very slowly, I expect bloc voting behavior to also be fairly consistent.

This logic leads to my first hypothesis about consistency of bloc voting over time:
6.1. Hypotheses

**Hypothesis 1** *Electoral units that concentrated their votes in one election are more likely to concentrate their votes in the next election.*

However, certain specific factors can impact a community’s ability to mobilize around a specific candidate. It is much easier for a group to coordinate its votes around a candidate that it previously supported than to transfer its bloc vote and switch candidates. Therefore, groups are more likely to concentrate their votes if the previous most voted candidate is running for office. If the long-time favored candidate stops running for office, it may take extra time and effort to identify a new candidate.

This logic leads to my second hypothesis about the presence of the previous most voted candidate:

**Hypothesis 2** *Electoral units are more likely to concentrate their votes if their most voted candidate from the previous election runs again.*

In choosing whether or not to bloc vote and which candidate to support, group members and leaders consider the past behavior of their previous most voted candidate, the past behavior of other candidates, and the campaign promises of all candidates.

If the previous most voted candidate was elected, and therefore an incumbent city council member, then the candidate was in a better position to target public goods to the community. Candidates that do not win are still able to advocate for their supporters through personal or partisan relationships with elected mayor or city council members or by seeking resources outside municipal government. However, elected officials have an advantage.

An incumbent politician’s record is also more visible than a challenger’s record. The community can more clearly attribute public service benefits to that person, and they can reward or sanction the candidate accordingly. This could help or hurt the incumbent candidate, depending on the candidate’s performance.
Since organized communities are more likely to bloc vote and pressure politicians, they are more likely to benefit from “trading favors” and the electoral tie created by bloc voting. Put another way, coordinated communities’ most voted candidates are more likely to follow through on their promises/responsibilities and provide services. Therefore, they are more likely to be rewarded when they run for re-election.

This logic leads to my third hypothesis, which is an interaction between previous bloc voting and the incumbency status of the previous most voted candidate:

**Hypothesis 3** Electoral units are more likely to concentrate their votes if their most voted candidate from the previous election is an incumbent politician. This is especially true for electoral units that previously had higher vote concentration.

Which sections “switch” candidates, i.e. select a new top candidate even though their previous most voted candidate ran again? I expect that sections where the previous most voted candidate lost (was not elected to city council) are more likely to switch; stated another way, sections where the previous most voted candidate won are more likely to re-elect the same top candidate, given that the candidate ran again. Since sections with high bloc voting are better able to coordinate, I expect this relationship to be stronger among those sections.¹

**Hypothesis 4** Electoral units are more likely to select the same most voted candidate as the previous election if the candidate is an incumbent politician. This is especially true for electoral units that previously had higher vote concentration.

¹Similarly, I expect that more organized communities are better able to switch candidates, though I cannot test this empirically with only electoral data. One predictor or proxy for community organizing is the size of the section, since smaller groups are more likely to overcome collective action problems, and I also test this relationship.
6.2 Data and Methods

To test my hypotheses, I make use of fine-grained municipal electoral data that is publicly reported by the Ceará state election board. Rural communities are spatially distinct and most residents vote at the local electoral section at a nearby polling station, with often 100-200 registered voters. Given the geographic dispersion of small rural communities, the area for the community association tends to overlap with the electoral unit.

In this chapter, I analyze electoral section data for five municipal elections (2000-2016), and I begin with important details about voting and the reporting of election results in Brazil. I provide an overview of electoral institutions and voting rules in Brazil before explaining the level of analysis and data source.

6.2.1 Electoral Institutions

Brazilian municipalities, similar to counties in the US context, have an elected mayor and city council that serve four year-terms. Mayors are eligible for two consecutive terms, while city council members do not have term limits. Municipal elections for mayor and vice-mayor (executive) and city council members (legislative) take place every four years. They are staggered by two years from state and federal elections. The first-round (and second-round for mayor, if applicable) municipal election occurs on the same day in all municipalities in Brazil.\(^2\)

One mayor is elected to represent the whole municipality, and multiple city council members are elected at-large via open-list proportional representation. The entire municipality is the multi-member district for all city council members, so candidates can target specific communities or seek

\(^2\)Mayors are elected via plurality rule in municipalities with fewer than 200,000 voters, and via majority rule with runoffs in municipalities with more than 200,000 voters.
votes throughout the municipality; similarly, citizens can vote for any candidate because they are not confined within zones or wards.\textsuperscript{3} The median municipality in Ceará had 53 candidates for 13 city council seats in 2016.\textsuperscript{4}

City council members are the closest and most accessible politician to most Brazilian citizens, especially those in rural areas. Since the mayor’s attention is focused on running the municipality as a whole, a city council member is the primary way for citizens to raise concerns, request services, and gain access to the mayor and politicians in other levels of government. Local candidates for mayor or city council are often part of a larger broker networks. They may be expected to use their electoral base to get votes for specific state or federal candidates in the elections two years later, who will reward them with access to government resources (Novaes, 2017; Avelino, Biderman, and Barone, 2012; Vieira, 2012; Medeiros, 2012).

What is the process for voting in Brazil? The country is divided into electoral zones that generally correspond to municipal boundaries, though large municipalities may be divided into multiple zones and small municipalities may be combined into one zone (\textit{zona eleitoral}). An electoral judge is assigned to each zone, and the judge is responsible for dividing the zone into electoral sections. An electoral section (\textit{seção}) has a minimum of 50 voters and a maximum of 500 voters in the capitals and 400 voters in the rest of the country.\textsuperscript{5} Each section is assigned to a specific voting machine (\textit{urna}) at a specific polling station (\textit{local de votação}). Electronic vote machines require voters to input numeric codes for each candidate: a two-digit party code for the

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{3}See Ames (1995\textit{a}) and Mainwaring (1991) for more details on Brazil’s electoral system.
\item \textsuperscript{4}In Ceará, 9 of 183 municipalities, excluding the capital, had more than 200 candidates for city council for between 15-23 seats. The maximum number of available seats per municipality is determined by the population, and the actual number of available seats is determined by municipal law. There is no minimum number. For example, a municipality with 80,001-120,000 residents is permitted 17 council members, but the municipality may choose to have just 16 because of financial constraints (Fernandes, 2010).
\item \textsuperscript{5}See Electoral Code Article 117 and amendment by Law 6996/1982 Article 11. Each section has a reception table (\textit{mesa receptora}) overseen by six people appointed by the electoral judge in advance in a public hearing.
\end{itemize}
\end{footnotesize}
mayor, and a five-digit code for city council members made up of the two-digit party code in front of the three-digit personal code.\footnote{Only one candidate per party can run for mayor.}

Voting is mandatory in Brazil for literate individuals ages 18 to 70, and it is optional for those who are illiterate, over 70, and ages 16 and 17.\footnote{To register to vote, citizens must go in person to an electoral office and bring an official identification card, military status for men between 18-45, and proof of address; most municipalities have an electoral office in the city center.} Voters can request exemptions due to illness or travel; voters without exemptions who do not vote must pay a modest fine at the electoral office.\footnote{While the fine is modest, even for most rural citizens, transportation to the electoral office from a rural community is challenging and often expensive. Citizens who do not pay the fine are prevented from participating in civil service exams or public bidding processes, working in the government, obtaining a passport, enrolling in a public university, or obtaining loans from state banks. Elections occur on Sundays, so most citizens do not need to request time off from formal employment. See more details in Cepaluni and Hidalgo (2016).} Voters can also submit blank or null ballots; voters select the option “blank” in the voting machine or type any number that does not correspond to a candidate to submit a null vote.\footnote{Blank votes are generally seen as expressing a preference for none of the candidates, while a null vote could be an error. Nevertheless, many Brazilians also see null votes as a stronger expression of protest voting. Neither blank or null votes count towards candidate totals but are reported.}

Each voter has a voting card (\textit{título eleitoral}) with a voting ID number that is assigned to a voting section (\textit{seção}); each section is assigned to a voting machine within a polling station. Voters (or others) can access their polling station location with their name, date of birth, and mother’s name on the state election board website. Voters are assigned to an electoral section at the polling station that is closest to their residence (considering distance and transportation options) and within their judicial or administrative district.\footnote{See Electoral Code Article 46.1. To transfer their section to another location, voters must bring an official identification card and proof of residence within the last three months, they should also bring their voting card if they have it. Voters can only transfer sections if there has been at least one year since registering to vote or their last transfer, a minimum of three months in the new residence, and be in good standing with the Electoral Board.}
Votes are totaled and publicly reported at the level of voting machine, which may consist of one or more electoral sections.\textsuperscript{11} In rural areas, polling stations tend to have only one section and one voting machine; they tend to be in active or deactivated schools, though occasionally use health clinics, churches, and community association centers. A polling station may host multiple sections and multiple voting machines, and polling stations are selected by the electoral judge. Preference is given to public buildings, though private buildings are also used if necessary.

6.2.2 Data

Electoral results are generally reported at the section-level, though some sections are aggregated together in the reporting. Most rural polling stations have only one section, though some have more sections if the rural polling station serves a larger population.

In my qualitative work, I found that both the section and the polling station were politically relevant. Some respondents reported that politicians would ask for their specific electoral section to identify section-level voting at polling stations with multiple sections. In other situations, respondents in large rural communities, where the polling station had multiple sections, reported aggregated results from the previous election. For example, a respondent reported that his community gave 101 votes to a specific candidate, which was a sum of the two polling stations in the community.\textsuperscript{12} For that reason, I used polling station data in Chapter 5.

\textsuperscript{11}The electoral results report the number of votes for each candidate at that machine and note which section voted there or which sections are being aggregated, if applicable.

\textsuperscript{12}Interview 75, August 11, 2017.
Unfortunately, polling station locations (the address for each section) are only available publicly for the elections in 2012 and 2016. Since historical results for each section are available back to 2000, I use section data in this chapter.\textsuperscript{13}

My analysis makes use of time-series cross-section electoral data to analyze long-term patterns in voting behavior. I use data from all electoral sections in the state of Ceará, excluding the state capital of Fortaleza and the neighboring city of Caucaia that expands the major metropolitan area.\textsuperscript{14} I analyze data from five years of election results (2000, 2004, 2008, 2012, and 2016) in almost 20,000 electoral sections in 182 municipalities across Ceará.\textsuperscript{15} By tracking a single section over time, I can observe changes in vote concentration over time.

There are 19,278 unique sections in Ceará during 2000-2016, but many sections did not exist the whole time. Over time, new sections were created while others were merged into other sections.\textsuperscript{16} Some sections underwent electoral rezoning and were assigned new numbers that cannot be linked to their previous numbers. Almost half (8,223) of the sections existed in all five elections, while 3,605 sections existed in only 4 elections, 2,122 existed in only 3 elections, 1,616 in only

\textsuperscript{13}In a future visit to the Ceará state capital, I will meet with members of the state electoral board and hope to obtain polling station information for more election years.

\textsuperscript{14}I exclude the state capital’s metropolitan area because its electoral dynamics are different from other medium and small municipalities. The metropolitan area has a significantly larger population than other municipalities, and the mayor of the capital is a strong player in state politics, not just municipal politics. City council members oversee a much larger population and political competition is quite different than in smaller municipalities.

\textsuperscript{15}While municipal elections were also held in 1996 and results at the municipal level are available, data for 1996 at the section level is only available for the capital of Fortaleza.

\textsuperscript{16}The aggregation of sections introduces some noise. While section number 110 in municipality X may exist in all five elections, it is possible that the results include more or fewer voters during different elections. For example, in 2000 the results may simply reflect the voters of section 110. In 2004, the results reflect the voters of section 110 as well as the voters of section 200 (a smaller section whose votes are “aggregated” with section 110). In 2008, section 200 is broken out into its own separately reported section, so the results for section 110 are back to reflecting only the voters of 110. This introduces noise into my analyses, biasing against observing similarities in vote behavior over time. Future analysis can take advantage of these changes in aggregation to study changes in vote behavior depending on results reporting.
two elections, and 3,712 sections only existed in one election. In the panel analysis, sections with only one year are excluded because they lack variation over time. Nevertheless, the limited dataset still corresponds to 15,566 electoral sections in 182 municipalities.

Electoral data is publicly available online from the Tribunal Regional Eleitoral - Regional Electoral Tribunal (TRE), the Ceará state electoral agency and from TSE, the national electoral

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17 A section that did not exist in a specific election year may have been aggregated with another section in other election years, which means that it was not considered the primary section and its results were not reported separately. The section could also have been newly created, and there is a proliferation of new, newly separated, or rezoned sections in 2016 (2,447 of the 3,712 sections that are only reported in one year). See TRE-CE (2015) for more information on rezoning in 2015 before the 2016 election.

18 The sample includes 182 of Ceará’s 184 municipalities, excluding the state capital’s metropolitan area of Fortaleza and Caucaia.

19 See http://apps.tre-ce.jus.br/tre/eleicoes/resultados/2016/.
6.2. Data and Methods

agency.\footnote{See \url{http://www.tse.jus.br/eleicoes/estatisticas/repositorio-de-dados-eleitorais-1/repositorio-de-dados-eleitorais}.} Second-round elections are not conducted for city council positions, though a few municipalities did conduct later supplementary elections if irregularities were observed during the first-round election.\footnote{In this instance, I use the voting behavior in the main (not supplementary) election so that the timing of the election is consistent across units.}

6.2.3 Empirical Models

I use three empirical models to study long-term patterns in voting behavior at electoral sections across the state in five municipal elections. The models test my hypotheses and predict vote concentration in one election based on vote concentration in the previous election, candidacy of the previous most voted candidate, and incumbency of the previous most voted candidate. Variables are indexed for section $s$ in municipality $m$ in election year $t$.\footnote{The time series includes five election years, but only four elections can be used when including results from the previous year (i.e. the lags).}

I test the first and second hypotheses with a full sample:

\[
VoteShareMostVoted_{sm,t} = \beta_1 VoteShareMostVoted_{sm,t-1} + \beta_2 PreviousMostVotedRan_{sm,t} + \Omega X_{sm,t} + \alpha_m + \gamma_t + \epsilon_{sm,t}
\] (6.1)
I test the third and fourth hypotheses in a subset of the sample limited to section-years where the previous most voted candidate ran ($PreviousMostVotedRan_{sm,t} = 1$):

$$VoteShareMostVoted_{sm,t} = \beta_1 VoteShareMostVoted_{sm,t-1} * \beta_2 MostVotedWon_{sm,t-1}$$
$$+ \Omega_X_{sm,t} + \alpha_m + \gamma_t + \epsilon_{sm,t} \quad (6.2)$$

$$SameTopCC_{sm,t} = \beta_1 VoteShareMostVoted_{sm,t-1} * \beta_2 MostVotedWon_{sm,t-1}$$
$$+ \Omega_X_{sm,t} + \alpha_m + \gamma_t + \epsilon_{sm,t} \quad (6.3)$$

where $VoteShareMostVoted_{sm,t}$ refers to the vote share for the most voted city council candidate at section $s$ in election year $t$, $PreviousMostVotedRan_{sm,t}$ is a binary variable for whether the most voted city council candidate from section $s$ in $t - 1$ ran for city council office in $t$, $MostVotedWon_{sm,t-1}$ is a binary variable for whether the most voted city council candidate from section $s$ in $t - 1$ was elected to the city council in $t - 1$, and $SameTopCC_{sm,t}$ is a binary variable for whether the most voted candidate from section $s$ in $t$ is the same as the most voted candidate in $t - 1$. The control variables in $X_{sm,t}$ include the number of votes at the section ($NumVotesSection_{sm,t}$), the number of votes in the municipality ($ln(NumVotesMun_{m,t})$), the effective number of city council candidates in the municipality ($ln(EffectiveNum_{m,t})$), and the total number of sections in the municipality ($ln(NumSections_{m,t})$).

As in Chapter 5, I use municipal fixed effects ($\alpha_m$) because my theory focuses on sub-municipal variation. Some municipalities had higher concentration of voting on average than others, and all of the actors in my theory make decisions based on others within their municipality. Community members consider the municipal electoral landscape when deciding which candidates to endorse.

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23I calculate the effective number of candidates as follows: $EffectiveNum_{m,t} = \frac{1}{\sum_{i=1}^{n}(v_{im,t})}$ where $v_{im,t}$ is the vote share for candidate $i$ in municipality $m$ in time $t$, and $n$ is the total number of candidates for city council member in municipality $m$ in time $t$. 

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and how to coordinate their votes. Similarly, politicians compare the support that they received from different communities within the municipality when allocating resources. I also use election year fixed effects ($\gamma_t$) to capture any election-specific characteristics.

Since section observations within the same municipality are not independent, I cluster standard errors by municipality. There are 182 municipal clusters in this analysis. With only four election years included, I am unable to also cluster by election year.

All models use ordinary least squares regression. My use of a lagged dependent variable (LDV) raises a number of methodological considerations. While some scholars use lagged dependent variables to address concerns of serial autocorrelation in the error term, I use it to also test hypotheses about the dynamic nature of voting behavior.\textsuperscript{24} Given my theoretical beliefs and data constraints, I follow the suggestion by Keele and Kelly (2006) that a lagged dependent variable model is preferable to other models when there is a moderate to strongly dynamic data generating process.\textsuperscript{25} Residual autocorrelation in the error term (within each section over time) may still lead to some bias, especially given the large sample. I cluster standard errors at the municipal level, which,

\textsuperscript{24}Still, by including the lagged dependent variable on the right-hand side, I may be incorrectly specifying a dynamic process where there is not actually one. The coefficient estimates on the other independent variables would then be biased downward if the LDV was not actually in the data generating process. However, both theoretical and qualitative observations lead me to expect a dynamic relationship in voting behavior over time. Unfortunately, even if the LDV is part of the data generating process, the presence of additional autocorrelation in the errors would still cause downward bias in the coefficients on the independent variables. The use of a lagged DV adds additional complications for variance estimation, and scholars such as Wilkins (2018) suggest including multiple lags to address remaining autocorrelation in the error term (because, for example, section X’s vote concentration in 2016 is likely to be correlated with its behavior in 2012 and possibly in 2008 and farther back). However, I do not have a balanced panel, and many sections only have two or three periods of data. Therefore, I abstain from including additional lags.

\textsuperscript{25}This requires an assumption of stationarity, whereby the coefficient on the lagged dependent variable is less than 1. This means that vote concentration goes down over time; vote concentration in one election can positively predict vote concentration in the next election, but concentration does not increase. I cannot feasibly make this assumption, especially because my theory predicts that bloc voting will increase in some places and decrease in others with change in community organizing over time. Nevertheless, given the strong relationship between vote concentration over time, I believe that omitting the lagged dependent variable would create more bias than including it.
CHAPTER 6. ELECTORAL CONCENTRATION IN THE LONG-RUN

being a level above the section, is a conservative way to estimate the variance around my estimates and helps to address some concerns related to variance estimation.

6.3 Results

How does voting behavior change over time? I look first at whether the same sections consistently concentrate their votes over time. I argue that, since community organizing is “sticky” and changes slowly over time, I do not expect to see large changes between elections.

6.3.1 Consistency of Bloc Voting

I first show a simple plot of vote concentration in two consecutive elections in Figure 6.2, which demonstrates that vote concentration stays remarkably consistent over time.\(^\text{26}\) Sections with lower concentration of voting, up to about 25% of the vote in the most voted candidate, hover around the \(y = x\) line, such that concentration in one election almost perfectly predicts concentration in the next election.

For those sections with much higher concentration of voting, voting does tend to drop a bit in the next election, but still stays quite consistent. For example, a section with 75% of its votes for the most voted candidate in one election is still likely to give over 55% of its votes to the most voted candidate in the next election (who could be the same or a different candidate). I observe in Figure 6.3 that bloc voting is most consistent (closer to \(y = x\) line) where the previous most voted candidate ran again for re-election and was chosen again to be the section’s most voted candidate.

\(^{26}\)The year over year correlation is also very consistent over time. The correlation between a section’s vote in 2000-2004 is 0.823, in 2004-2008 is 0.808, in 2008-2012 is 0.819, and in 2012-2016 is 0.805.
6.3. Results

Figure 6.2: Voting Behavior Over Time

![Graph showing voting behavior over time.]

Note: Lines calculated using “gam” from package `ggplot2:geom_smooth` on a simple regression without controls, municipal fixed effects, or clustered standard errors.

Figure 6.3: Voting Behavior Over Time by Previous Most Voted CC Candidate

![Graph showing voting behavior by previous most voted CC candidate.]

Note: Lines calculated using “auto” from package `ggplot2:geom_smooth` on a simple regression without controls, municipal fixed effects, or clustered standard errors.
Hypothesis 1: Consistency Over Time

I test my hypotheses systematically in Table 6.1. In the pooled sample in Column 1, I find evidence for my first two hypotheses. First, vote concentration is higher in sections that previously concentrated their vote ($\beta = 0.73, p < 0.01$). These findings fit with my observations from fieldwork that community characteristics are sticky. Certain communities saw value in coordinating their votes and were able to organize to do so; these same communities tended to concentrate their votes in multiple elections. Other communities were unwilling or unable to coordinate their votes, and these communities tended to disperse their votes in multiple elections.

Hypothesis 2: Availability of Previous Most Voted Candidate

While bloc voting is rather consistent over time, certain specific factors can impact a community’s ability to mobilize around a specific candidate. For example, I observed in multiple communities (for example, Community O-C) that if the long-time favored candidate stops running for office, it will take extra time and effort to identify a new candidate.

Testing my second hypothesis, I find that bloc voting is higher in sections where the previous most voted city council candidate ran again for office. In Table 6.1, Column 1, the estimated effect is statistically significant but is substantively quite small ($\beta = 0.01, p < 0.01$). In Column 2, I subset the sample by the previous most voted candidate’s candidacy, and I find that vote concentration is most consistent where the candidate did run again ($\beta = 0.76, p < 0.01$).

Nevertheless, Column 4 shows that there is still a strong relationship between elections even where the previous most voted candidate is not available ($\beta = 0.65, p < 0.01$).\footnote{An interaction between Previous Most Voted CC Ran and Vote Share (lag) is also statistically significant.} It is likely that
6.3. Results

Table 6.1: Voting Behavior Over Time

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Vote Share in Most Voted CC Member</th>
<th>Previous Most Voted CC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vote Share in Most Voted CC Member (lag)</td>
<td>Pooled</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Vote Share in Most Voted CC Member (lag)</td>
<td>0.730***</td>
<td>0.763***</td>
</tr>
<tr>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.019)</td>
</tr>
<tr>
<td>Previous Most Voted CC Member Ran</td>
<td>0.011***</td>
<td></td>
</tr>
<tr>
<td>(0.001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Voted CC Member Won (lag)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote Share Most Voted (lag) * Most Voted Won (lag)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.021</td>
</tr>
<tr>
<td>(0.020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>46,770</td>
<td>29,986</td>
</tr>
<tr>
<td>R²</td>
<td>0.674</td>
<td>0.728</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.672</td>
<td>0.726</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.084</td>
<td>0.079</td>
</tr>
</tbody>
</table>

Note: Includes municipal fixed effects, election year fixed effects, and clustered standard errors at municipal level. The model includes variables (not shown) for number of votes at the section, number of votes in the municipality (log), number of effective city council candidates in the municipality (log), and number of sections in the municipality (log). See Appendix for full model.

the previous most voted candidate indicated someone as her successor, and while the section does not mobilize for the successor to the same extent, the bloc voting pattern is still quite consistent. An interesting example of bloc voting when the previous most voted candidate does not run again occurs in the municipality from which my case studies are drawn. The rural community of São Serafim heavily concentrated its votes in 2012, with 50% (179) of its 358 votes to its most voted candidate, Manin Barroso; the next closest candidate, known as Chico Conde, received only 44 votes. Neither candidate ran again in 2016. Forced to find new candidates, in 2016 the

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28 The community did not happen to be included in my interviews.
community gave 27% (100) of its 372 votes to Regis Barroso, who is likely related to the previous most voted candidate and endorsed by him. The next closest candidate, known as Panta, got 13% (49) of the votes. Panta became president of the city council.

Public records show that both Regis Barroso and Panta put forth legislation to help the small, rural community of São Serafim in their first months in office. On March 6, 2017, Regis Barroso requested and received approval (from the council president, Panta) for a reform of the primary school in the community, which also happens to be the polling station. Shortly after, on March 27, Panta requested the completion of the classrooms of the same primary school. It is likely the case that, since São Serafim is a known and proven vote bloc, the council members are competing to prove that they fulfill their promises and gain favor for future elections.\textsuperscript{29}

**Hypothesis 3: Bloc Voting and Candidate Incumbency**

When I test my third hypothesis about candidate incumbency in Table 6.1, Column 2, I am surprised to find a negative relationship between the previous most voted candidate having been elected and bloc voting in the next election. I expected that communities would be more likely to concentrate their votes if they have a strong tie with an incumbent politician who is running for re-election, because incumbent politicians are more likely to have access to public services that they can distribute to their supporters. However, their incumbency could work against them. Since their record is clearer, communities may be more likely to punish them if they do not follow through on their promises and responsibilities.

I expected incumbency to have an even stronger impact in high bloc voting communities, since these communities are better able to coordinate and are more likely to have pressured politicians between elections to provide public services. In Figure 6.4, it appears that incumbency does have

\textsuperscript{29}I hope to conduct interviews there in the future to learn more about this case.
6.3. Results

Figure 6.4: Voting Behavior Over Time by Incumbency

Note: Limited to sections where previous most voted candidate ran again for city council. Lines calculated using “auto” from package `ggplot2::geom_smooth` on a simple regression without controls, municipal fixed effects, or clustered standard errors.

a positive impact among sections with previously high bloc voting, but I do not find a statistically significant interaction in Table 6.1, Column 3 between previous most voted incumbency and previous bloc voting. I return to this curious finding in the next section.

Additional Explanations

Other contextual factors also have a strong relationship with bloc voting. I find that concentrated voting is most likely in smaller sections (those with fewer votes) and in municipalities with fewer effective number of city council candidates, controlling for the number of votes cast for city council in the municipality (see Appendix). Many scholars have documented the challenges of coordinating large groups, and respondents in my interviews also said that smaller communities are usually
better able to concentrate their votes. This is likely because it is easier to share information and hold political discussions when there are fewer people, individuals in smaller groups are easier to monitor, preferences are more likely to be homogeneous in small groups, and trust and reciprocity are likely to be stronger among members of smaller groups (among other possible mechanisms).  

6.3.2 Switchers

My theory of trading favors argues that communities have more bargaining power if they concentrate their votes and pressure politicians. An important assumption is that communities have a credible exit option, that is, they can and do switch candidates even if their previous top choice runs again.

Do sections actually switch loyalty in practice? I find that many sections do switch: 36% of all sections during 2004-2016 are switchers, i.e. they voted for a different top candidate even though their previous most voted candidate ran again. This represents over 50% of those sections whose previous most voted candidate was in the race.

What does bloc voting look like among the “switchers”? I observe in Figure 6.3 that bloc voting is less consistent when the section switches and chooses a different top candidate even though the previous most voted candidate ran again (Ran Not Same). I cannot piece apart whether the switching is intentional or unintentional, but I do still find a remarkable amount of cohesion in bloc voting, even among the switchers, where a section that gave 75% to its most voted candidate

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30Extensions of this work will explore the relationship between precinct-level voting and where and how politicians seek votes. Scholars have studied the concentration or dispersion of voting behavior by state deputies in Brazil, and I will apply similar theories to the municipal level. Scholars have used different types of indices to capture vote regionalization and spatial dispersion of voting at the state-level; see Avelino, Biderman, and Peres da Silva (2011) for a new measure and a comparison of measures used by Ames (1995b), Samuels (2002), and Pereira and Rennó (2001). Davidian, Silva, and Mesquita (2012) and Silva and Davidian (2013) introduce two additional measures.

31Data from 2000 are excluded because they are used to identify the previous most voted candidate for 2004; section-level data from 1996 are only available for the state capital of Fortaleza.
6.3. Results

in one election still gives over 45% to a new most voted candidate. The behavior of switchers appears to be very similar to that of sections whose previous most voted candidate did not run.

**Hypothesis 4: Switching and Candidate Incumbency**

Are communities less likely to switch (i.e. more likely to choose the same top candidate) if their most voted candidate won election in the previous election and is an incumbent politician? My fourth hypothesis is that sections are less likely to switch (more likely to vote for the same top candidate) if the candidate is an incumbent politician (Most Voted CC Member Won (lag)); I predict that this relationship will be even stronger among sections with high bloc voting (Vote Share in Most Voted CC Member (lag)).

In Figure 6.5, I analyze the relationship between bloc voting in the previous election, candidate incumbency, and switching. I find, surprisingly, that among the sections with low concentration, previous candidates who won are actually less likely to be chosen again. Put another way, among low bloc voting sections, sections are more likely to switch if the previous most voted candidate is an incumbent politician.\(^{32}\) I test this relationships systematically in Table 6.2, Column 1, and I find the same surprising result on the coefficient for “Most Voted CC Member Won (lag)” ($\beta = 0.052$, $p < 0.01$). However, as I mention in my hypothesis, this may depend on the section’s bloc voting behavior.

In Table 6.2, Column 2, I test an interaction of these two features. I find that among the sections with higher bloc voting, there is a lower likelihood of switching (higher likelihood of staying with the same top candidate over time) if that candidate was elected to office in the previous election. This interaction is statistically significant at $p < 0.01$. This is the relationship that I observe in

\(^{32}\)This relationship is likely related to the negative coefficient on “Most Voted CC Member Won (lag)” when predicting Vote Share in the Most Voted CC in Table 6.1, since most observations have vote share in the most voted CC member below 20%.
Note: Limited to sections where previous most voted candidate ran again for city council. Lines calculated using “loess” from package `ggplot2::geom_smooth` on a simple regression without controls, municipal fixed effects, or clustered standard errors.

Figure 6.5 among high bloc voting sections, where the line for Previous Most Voted Won is higher than Previous Most Voted Lost.\textsuperscript{33}

It makes sense that sections with lower bloc voting are more likely to switch if their previous most voted candidate won. These sections have many candidates with low vote share, and the voters do not have a strong tie to any of them. Even if the most voted candidate (with less than 20\% of the section’s votes) won, the incumbent politician is likely to have had stronger ties with other sections who did concentrate their votes for him/her. The most voted candidate therefore likely did\textsuperscript{33}

\textsuperscript{33}There does not appear to be a statistically significant difference between the lines in the smoothed plot, but the plot does not include municipal fixed effects and other important controls.
6.3. Results

Table 6.2: Loyalty to Most Voted CC Candidate

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Same Top CC Candidate</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Vote Share in Most Voted CC Member (lag)</td>
<td>1.339***</td>
<td>1.195***</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td>(0.056)</td>
</tr>
<tr>
<td>Most Voted CC Member Won (lag)</td>
<td>−0.052***</td>
<td>−0.099***</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.023)</td>
</tr>
<tr>
<td>Vote Share Most Voted (lag) * Most Voted Won (lag)</td>
<td>0.190***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.061)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>29,986</td>
<td>29,986</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.193</td>
<td>0.193</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.188</td>
<td>0.188</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.447</td>
<td>0.447</td>
</tr>
</tbody>
</table>

Note: Limited to sections where previous most voted CC candidate ran for office. Includes municipal fixed effects, election year fixed effects, and clustered standard errors at municipal level. The model includes variables (not shown) for number of votes at the section, number of votes in the municipality (log), number of effective city council candidates in the municipality (log), and number of sections in the municipality (log). See Appendix for full model.

On the other hand, sections with higher bloc voting are less likely to switch if their previous most voted candidate won. Sections with higher bloc voting are likely to be more organized; they can use both their community organizing skills and the electoral tie with the candidate to extract better service access from the incumbent politician. The most voted candidate is likely to prioritize that section, and the section would reward that person in the next election.

I also find that switching is more likely (i.e. voting for the same top CC candidate is less likely) at smaller sections (results shown in Appendix); smaller sections are better able to coordinate their
votes and more likely to be able to convince group members to switch candidates. Switching is also more likely in municipalities with more candidates.  

### 6.4 Conclusion

My theory of trading favors involves a long-term bargaining process between community groups, local leaders, and politicians. Bloc voting by small, identifiable groups is a critical part of my theory, but household and community-level data rarely exist in panel form. Instead, I make use of fine-grained electoral data across five elections to measure long-term patterns in voting behavior at the level of the electoral section, which is the smallest unit in the electoral system and represents 100-400 voters.

I expect that, since community organizing is a slow-moving characteristic, bloc voting should also be relatively stable over time. By evaluating over 15,000 sections over time, I find that vote concentration in one election strongly predicts vote concentration in the next election: the same places continue to concentrate their votes, and the same places continue to disperse their votes.

In addition, I find that bloc voting is higher where the previous most voted city council candidate ran again, since the group has a clear person to rally around. Nevertheless, I find evidence that many sections switch and vote for a different top candidate even if their previous most voted candidate ran again. While lower than sections that stay loyal to their previous choice, bloc voting

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34 Extensions of this work will look at the relationship between switching and other municipal-level features. I am not the first to look at this, though other scholars have used precinct-level data to calculate municipal indicators instead of tracing specific precincts over time. Lopez and Almeida (2017) use a measure of municipal-level electoral volatility to capture switching by voters. It is defined as candidates receive very different vote shares across subsequent elections, which indicates more switching by voters. A value of 0 means the same candidates ran in both elections and received the same number of votes in each election; a value of 1 means that none of the candidates from the first election runs in the second election. I expect that this is the case because having more candidates leads to greater competition to be a group’s top choice and/or makes it harder to coordinate and choose the same person again.
is still remarkably consistent among sections that switch candidates or whose previous most voted candidate is not in the race.

I analyze sections that switch, and I find that over 50% of sections choose a new top candidate even though their previous most voted candidate was in the race. Among the sections with higher bloc voting, there is a lower likelihood of switching (higher likelihood of staying with the same top voted candidate over time) if that candidate won in the previous election and was elected to city council. Switching is more likely among smaller sections, where coordination is easier, which is also consistent with my theory.

This chapter demonstrates that bloc voting is a dynamic process and provides fine-grained, quantitative electoral evidence that “trading favors” is a long-term cycle. It provides systematic quantitative evidence for many of the observations in my case studies in Chapter 4 and adds a temporal dimension to the analysis of bloc voting in Chapter 5.
Chapter 7

Conclusion

This dissertation seeks to understand puzzles at the heart of political science about distributive politics and sustainable development: why do some communities have access to basic, essential services such as water, and neighboring communities do not? How do citizens influence the distribution of public services?

I advance a theory that I call “trading favors” where groups of voters organize and trade their collective votes for preferential access to public services. This relationship is a long-term dynamic of local distributive politics, and it shapes not only election outcomes but the distribution of essential public services. I argue that community associations provide a platform for voters to trade their collective votes for preferential access to public services. Groups with high community activity and strong, unified leadership are better able to coordinate their votes before elections and pressure politicians between elections, since politicians monitor their aggregate votes at polling stations.

My theory yields three primary observable implications: 1) organized communities are more likely to have better public service access, 2) organized communities are more likely to coordinate their votes, and 3) communities that coordinate their votes are more likely to have better public service access. However, it is very hard to observe, and even more difficult to measure, the com-
7.1. Applicability and Scope Conditions

What do groups of voters want? Essential public services such as water, health care, education, and infrastructure tend to be under-provided in developing countries, and their allocation is often politically motivated. Communities in my theory seek basic public services and local development...
programs that will be shared and used by most or all members of the community, and I focus my study on water access.

My theory applies to local public goods and club goods. The main scope condition is that services can be targeted to certain communities, for example extending roads, water or sanitation networks, trash collection, schools, or clinics to a particular neighborhood. Geographic concentration of community members within the community, and spatial dispersion of communities, is also important to my theory because politicians use this to monitor voting and target local public or club goods (Ejdemyr, Kramon, and Robinson, 2018; Harris and Posner, 2017; Ichino, Williams, and Wibbels, 2018). As long as the good can be excludable at the neighborhood level, either by limiting who receives it or by virtue of distance to other communities, then it can be a targeted public or club good or service. Politicians can therefore identify and target specific neighborhoods in response to neighborhood-level organizing and voting.

My theory is most applicable to areas where voters organize in locally-based civil society organizations, since the constituents of the organization can be targeted with club goods on a geographic basis. Neighborhood associations are common throughout the developing world and organize to improve local public services in their neighborhood (Collier and Handlin, 2009; Palmer-Rubin, 2016; Auerbach, 2014). Still, my theory applies to other civil society organizations where the aggregate vote can be monitored in some way. In countries with voting along ethnic lines, the behavior of certain groups can be monitored even if they are not limited to a specific polling station.

Additional scope conditions focus on institutional features. My theory is applicable in places with regular, free and fair elections and where groups can organize freely. Both features are im-

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1Ejdemyr, Kramon, and Robinson (2018) find that politicians in Malawi provide higher overall levels of local public goods (water wells) in districts where ethnic groups are geographically segregated, and that the higher levels are going towards their coethnics. Where groups are dispersed in space, it is easier for politicians to provide a local public good knowing that others will, by virtue of distance, be excluded.

2Geographic dispersion also means that goods can be targeted to specific groups due to ethnicity or other factors.
7.2. Implications for Distributive Politics

Important for the long-term relationship between community members, leaders, and politicians. If elections are unpredictable, voters cannot negotiate over multiple cycles, and accountability breaks down where voters cannot threaten to switch their allegiance in a future election. If groups cannot organize freely, members cannot coordinate their votes and endorse candidates as a bloc. Lastly, my theory is most likely to operate in democracies, but many features of it also apply in non-democratic contexts. For example, scholars have documented the role of bloc voting and community organizing in elections for local government and other party positions in semi-authoritarian or authoritarian countries.3

7.2 Implications for Distributive Politics

I advance our understanding of collective action and distributive politics by providing evidence that organized voters have agency and can use their collective votes to influence the distribution of public services. Most studies about vote-buying and pork politics focus on politicians’ strategies, where voters are seen as passive recipients in a coercive relationship. My findings shed light on two important but poorly understood features of distributive politics: poor citizens bargain with votes, and citizens organize and bargain collectively for access to services.

My work implies that citizens have (varying degrees of) bargaining power in their interactions with local politicians, and my work adds complexity to the standard clientelistic vs. programmatic debate. I argue that relationships between local groups and political leaders can take very different forms, even within the same municipality. Sometimes the “trading favors” relationship appeared to be more clientelistic, with coercive relationships between politicians and voters where services were contingent on vote behavior. In other cases, “trading favors” appeared to be a long-term

3See Read (2012) for detailed work on associations and politics in Cuba and China.
reciprocal relationship that was a different means of holding politicians accountable. Here, bloc voting signaled the ability of a community to coordinate and mobilize. Politicians were more likely to target public services to coordinated communities to preemptively avoid public protest and/or were more likely to respond to demands from those communities to attract their coordinated vote in the future. I contribute to the literature by demonstrating the numerous ways that bloc voting – as well as collective action between elections – can influence the distribution of public services.

I contribute to scholarship on the role of interest groups in pork politics and public service provision, and I highlight the specific role of community or neighborhood associations in local distributive politics. Community associations are democratic institutions at the most micro level, but this level of analysis has been overlooked in the political science literature. Most associations hold regular meetings and leadership elections, and they are often citizens’ first and most frequent interaction with democratic processes. We typically think about how national policy and governance are shaped by large scale associations and pork politics; I apply these theories and approaches to the local level to study how municipal policy and governance are shaped by community associations and local electoral relationships.

I also develop our understanding of local leaders, who act as combined development and vote brokers throughout the developing world. They help citizens gain access to government services and supervise the delivery of development programs. Important recent work has developed the concept of the chief as a development and vote broker in Africa (Baldwin, 2015) and studied the role of urban slum leaders as development and vote brokers in India (Auerbach and Thachil, 2018). However, we do not have strong theories about the overlapping role of local leaders in collective action and electoral politics, especially in the absence of ethnic ties. While reviewing the literature, I found that there is little consensus on how to analyze leadership and power structures. My work
provides a strong theoretical contribution by theorizing how variation in leadership can impact a community’s ability to coordinate its votes and pressure politicians after elections.

7.3 Implications for Political Economy of Development

My study develops our theoretical understanding of key features of the political economy of development, particularly organizational capacity building and local leadership, and yields specific policy recommendations. Many development programs focus on community-driven development (CDD), and the World Bank had over 190 active CDD projects in 78 countries in 2018 (Wong and Guggenheim, 2018). Most focus on building local social capital and community activity, and my findings suggest that they should absolutely continue doing so. However, my findings also suggest that development programs should pay just as much attention to the strength of local leadership and involvement of local elites (Wong, 2012).

There is a tendency in development practice to shy away from encouraging strong local leadership, especially where the same person is in power over time, due to well-founded concerns of elite capture. Nevertheless, constant leaders are the ones who help local citizens to navigate complicated electoral situations and government bureaucracies. They help community members to aggregate their preferences, bargain with their votes, and hold local politicians accountable through the dynamic of trading favors. To avoid elite capture, CDD projects should work to strengthen leadership capacity among regular citizens and increase accountability mechanisms within communities. My research suggests that development programs could involve leadership training to spark interest in leadership among community members to increase competition for the leadership position and include leadership development to strengthen the abilities of elected community leaders.

However, given the risk of elite capture, development programs should also strengthen information channels between citizens and bureaucrats. It is possible, even in places where resources
are targeted based on need and not based on electoral support, that communities miss out on crucial resources because no one in the city hall knows that the pump or water pipe broke. One of the main reasons that communities trade favors is to have someone to call when there is a water crisis and to help navigate the bureaucracy. During my fieldwork, I observed that even the most effective, dedicated municipal civil servants were often unaware of public service crises in communities outside the city center. My research suggests that development programs could create or strengthen organizations that bring together community leaders from across the municipality to improve information sharing about development opportunities and bureaucratic processes, and they could take advantage of existing networks of community health workers or rural extension services to get information to local citizens and carry information back to the city hall.

7.4 Implications for Water Politics and Policy

Lastly, my findings contribute to a growing literature on the politics of water and rural water supply. Water scarcity is a growing concern for a majority of the world’s population, and more than half of the world’s poor live in drought-prone areas. Compounding the challenges that rural populations face, approximately 40% of Earth’s land surface and more than 2 billion people live in dry lands vulnerable to droughts (Mearns and Norton, 2010). Water is essential for survival, and access to water usually requires government or private service provision through investment and maintenance of wells and piped systems. In addition, community associations play an important role in water resource management, in Northeast Brazil and globally (Enéas da Silva et al., 2013).

This is similar to the “scaling up” of local civil society groups mentioned by Fox (1996) and the “combative” coalitions of neighborhood associations mentioned by Abers (2000). Many municipalities in Brazil already have federations of community associations, though they varied in their effectiveness. I elaborate on these federations in Section 7.5.
As a scarce and essential resource, water is highly vulnerable to capture by politicians and elites. My findings add to a growing literature that studies how access to water can be used as a political tool to win votes and other support (Herrera, 2017; Bobonis et al., 2017; Björkman, 2015). Political targeting, bribes, and kickbacks for investment in water are common in Mexico (Herrera, 2017; Durán, 2006), Brazil (Bobonis et al., 2017), India (Björkman, 2015; Sainath, 1996), Ghana (Whittington et al., 2009), Malawi (Ejdemyr, Kramon, and Robinson, 2018), Tanzania (Carlitz, 2017), Indonesia (Lovei and Whittington, 1993), and Pakistan (Davis, 2004), among others.

Many residents of the communities that I visited argued that they need to trade their bloc votes for access to water services, such as a pump on the well, because resources are scarce. If five communities need a pump but the municipality does not have enough, then competition over resources makes trading favors more important. I am particularly interested in studying drought-prone regions, where local politicians may take advantage of the increased frequency of extreme events with climate change. With scarce water resources, the dynamic of trading favors is unfortunately more likely to verge into clientelism and coercive behavior by politicians, reducing the agency of local citizens.

My findings about politicization of water access in Brazil are most applicable in other major middle income countries. Brazil is representative for Latin America in having high rates of rural population with access to improved water sources (85% in Brazil and 82% on average in Latin America). However, the maintenance status, water quality, and political targeting of water are not captured in these statistics. If Brazil has trouble with these issues, then they are likely worse in Sub-Saharan Africa, with 60% of the population living in rural areas and only 63% of the rural population having water access on average (World Bank, 2014).

The water politics aspect of my study is also most applicable to other semi-arid or arid contexts, but it applies anywhere that drought and water scarcity occur. Regions that are not arid or semi-arid
are still susceptible to water scarcity and political pressure to distribute water services. Droughts can and do occur in very wet areas such as the Brazilian Amazon, though they are more common in arid or semi-arid regions that rely on low average rainfall. Droughts impact local populations throughout the world.\(^5\)

My research suggests that municipal governments could improve water access, especially in drought-prone areas, by increasing their attention to maintenance of existing water infrastructure and help communities to manage their existing water resources.\(^6\)

7.5 Future Research

In developing my theory and testing it in Brazil, I observed many interesting features that are clear avenues for important future research. They relate primarily to certain aspects of my theory that are not fully explored in this dissertation (linkages across associations, clientelism, and political competition) and analyses to further test my theory within Brazil and in other contexts.

Theoretical Expansion

First, many scholars have identified the importance of linkages across civil society, and I also observed that these linkages existed in many municipalities between multiple associations and

\(^5\)Droughts are predicted to intensify due to lower rainfall and/or higher temperatures in “southern Europe and the Mediterranean region, central Europe, central North America, Central America and Mexico, northeast Brazil, and southern Africa” (IPCC, 2012). Moderate to severe depletion of groundwater aquifers has already been documented in the south-eastern United States, central to southern South America, northern and central Africa, Russia, and north-eastern Europe (Richey et al., 2015).

\(^6\)One way to do this would be to maintain a rotating stock of water supply equipment by fixing broken pumps and other resources and keeping them on hand. This recommendation stems from conversations with a former mayor from rural Northeast Brazil. Instead of fixing a broken pump, which can take a long time, municipalities could maintain a rotating stock. When the pump in one community breaks, the municipality could quickly replace it with a different, functioning pump. Without time pressure, fixing the pump will be better and cheaper, and the refurbished pump could be used in another community.
between associations and other civil society groups. In many municipalities, I learned about a “federation of associations” that brought together the presidents of most community associations in the municipality on a regular basis to discuss issues and work together. When successful, the federation helped raise issues and lobby city council members for policies that would benefit their members more broadly. The federations seemed effective in some places but not in others.

In addition, I learned that some association presidents participated in the federation while others did not, which could create additional inequalities across groups with successful community organizing and groups without it. I would like to learn more about why there is variation in participation of association presidents, variation in the existence of federations, and variation in the effectiveness of federations; I also would like to know what impact the federations have on policy outcomes and who their actions benefit most.

Second, my theory falls somewhere between clientelism and pork politics. I argue that my theory of “trading favors” sometimes is more coercive and similar to the “collective clientelism” observed by many scholars, and it sometimes enables poor voters to have an important democratic voice to improve local accountability. In future research, I would like to learn more about where and why this relationship is more clientelistic vs. more programmatic in different places.

I am also interested in the overlap and coexistence of clientelism and trading favors; I observed in many communities that some candidates still engaged in vote buying even though the community generally concentrated its vote in a specific candidate and used that relationship for long-term bargaining power. Which candidates are most likely to use vote buying, and why? Is their strategy to get many dispersed votes that will add up to enough votes to be elected while protecting them from having to follow through on any bloc voting relationships? Does the same candidate use vote buying in one community but engage in trading favors in another community?
Third, I wonder what impact the trading favors relationship has on political competition and accountability. Grindle (2007, p. 133-143) argues that civil society in Mexico was able to extract benefits and force public officials to follow through on responsibilities and promises via petitions, lobbying, and constant reminders; her observations seem very similar to the “get attention” phase of a trading favors relationship. However, this type of claim-making did not strengthen local accountability; politicians followed through because they were pressured by specific community organizations, and communities were at the whim of different administrations. In addition, communities that did not pressure politicians were left out.

While I see trading favors as generally providing more bargaining power to poor voters than vote buying, it may create its own inequalities and change the nature of accountability in local politics. In future research, I would like to study what the transition from vote-buying to trading favors looks like, how it impacts political accountability, and whether municipalities are eventually able to move towards more programmatic politics.

**Analytical Expansion**

Additional research steps focus more on specific actions to strengthen my qualitative and quantitative analyses and expand the study to other contexts.

First, I will conduct additional qualitative interviews to strengthen my comparative case studies and conduct process tracing to test causal mechanisms. During dissertation research, financial and logistical constraints meant that I had to visit multiple communities within the same day, which severely limited the number of interviews that I could conduct in each community. In the future, I can use survey data on 120 communities described in Chapter 5, survey data from my earlier survey in 2016 used in the robustness check in Chapter 5, and the sample of communities where I conducted interviews. With this information, I can create a sample with appropriate variation on
7.5. Future Research

many key variables (historical factors, modern community activity and leadership, and bloc voting) to test my theory with robust qualitative analysis.

Second, I will seek out additional quantitative survey and field-based measures to capture additional features of my theory. I would like to expand the water security and reliability index by including an objective measures of water quality and incorporate other socio-economic factors such as spending on water and equitable distribution. I also will include more robust measures of leadership competition in future versions of the household survey and explore in more detail the conditions under which we see higher leadership competition. I will evaluate distribution of rainwater cisterns using geo-coded data, and I hope to access geo-coded locations of development projects and public service investment and maintenance, where they exist.

Third, I will expand the long-term electoral data analysis. I hope to obtain polling station information for more election years so that I can match the sections to their locations. This will help me to study the impacts of adding/removing electoral sections from a polling station and of adding/removing sections from aggregate reporting. I will speak with bureaucrats at the state electoral board to better understand the processes for rezoning municipalities, for reallocating electoral sections, and for creating or merging polling stations.

Fourth, I would like to dig into the explanations that I provide for the historical origins of community organizing. The theoretical explanations are supported by my observation during fieldwork, where I perceived that communities often had stronger leadership and community activity where they were formed through the landless workers movement and where they were not tenants on a large farm and therefore had not been dependent on a local landowner. I plan to study these explanations empirically by studying the relationship between the presence of the landless workers’ movement (MST) and Christian base communities (CEBs), elite competition and land inequality, and modern community organizing, bloc voting, and public service outcomes.
I have a few leads on how to measure variation in key historical factors. One way to measure elite competition is by analyzing historical tax records and voter registration, which Chilcote (1990, p. 69) uses from 1903 to characterize historical power structures in the two municipalities. Early censuses also provide information on land ownership at the municipal level, and the locations of modern INCRA settlements are publicly available. While finding data on the location of MST activism (successful and not successful) and CEBs will be more challenging, it may be possible. Through this work, I also hope to understand the relative impact of each explanation on community activity and local leadership.

Lastly, I seek to expand my study to urban areas of Brazil and to rural and urban areas of other countries. I plan to conduct a very similar household survey in the major metropolitan areas of the same state of Ceará (the capital of Fortaleza and its neighboring city Caucia). It would be very interesting to also study these dynamics in a different region of Brazil, for example the wealthier and more industrial Southeast or South, which is a common comparison (Wolford, 2003).

Additional cases of Mexico, South Africa, and India would provide very interesting comparisons. Like Brazil, Mexico and South Africa are upper middle-income countries with federal or quasi-federal systems, regional inequality, and water scarcity issues. India has the same features except as a lower middle-income country, and the relatively low human development in Northeast Brazil makes it more comparable to development in India. Scholars have observed similar local dynamics, especially with respect to clientelism, water politics, and grassroots associations in all four countries.

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7 Others have used similar case comparisons: Heller (2012) studies deliberative democracy in Brazil, India, and South Africa; Montambeault (2015) studies participatory budgeting policy in Brazil and Mexico; Houtzager and Acharya (2011) study civil associations in urban Brazil and Mexico; Houtzager et al. (2016) study social accountability in big cities in Brazil and India.

8 Grassroots associations are often called “civics” or “community development forums” in South Africa (Lemanski, 2008), “slum associations” or involve “gram sabhas” in India (Auerbach, 2017; Besley, Pande, and Rao, 2007), and “neighborhood associations” in Mexico (Shefner, 2001).
7.6 Conclusion

In presenting my theory of trading favors, I provide a first cut at understanding key questions in political science. Why do some communities have access to basic, essential services, and neighboring communities do not? How do citizens influence the distribution of public services?

I think back to the communities that I visited in rural Northeast Brazil and the extremely diverse experiences that even neighboring communities had with public services, water politics, and community organizing. What did it mean to trade favors? What favors were being traded? Who was involved? Did it work?

In this dissertation, I examine how local politics and community organizing shape political participation and public goods provision in developing countries, and I base my study in rural Northeast Brazil. Using multiple methods and data sources, I find that communities with higher community activity and/or stronger, unified leadership are better able to organize and participate in collective action. Before elections, they coordinate their votes to create a strong tie with a politician and signal their ability to mobilize. After elections, they pressure politicians to follow through on their promises and responsibilities and provide public services.

This dissertation contributes to our understanding of democracy and development by emphasizing the role of voter collective action in local politics and public goods provision. I call for a renewed focus on the agency of organized voters, especially through community associations and other civil society groups. Existing literature suggests that bloc voting is coerced by politicians or partisan brokers, but I find that it can also result from organized communities behaving strategically to improve public service provision.

My research sits at the intersection of development, politics, and the environment. My work highlights the importance of community associations, which are democratic institutions at the most
micro level but have been overlooked in the political science literature. I also provide important insights into the role of local leaders, who often mobilize community members around candidates and oversee implementation of development programs. I focus on access to water, which is an essential and often scarce resource that is prone to political manipulation.

In this dissertation and future research, I seek to facilitate a conversation between scholars of collective action, distributive politics, political economy of development, and environmental politics. All of these factors impact who has access to services as essential as water, and we need to work together to understand how democracy functions at the most local level and identify why some communities get left out of development. By better understanding how civil society organizations participate in local politics, we can better understand the political economy of development in developing democracies and design public policies to ensure that all citizens have access to essential services.
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Appendices
Appendix A

Supplementary Material for Politics and Society in Rural Northeast Brazil
Figure A.1: Water Source for Rural Households by Region

Note: Data from 2010 Census.
Figure A.2: Water Source for Rural Households by Northeastern State

Note: Data from 2010 Census.
Appendix B

Supplementary Material for Trading Favors in Practice: Water Access in Ceará
Figure B.1: Share of Rural HH with Piped Water in Home

Note: Includes 184 municipalities in Ceará. Data from 2010 Census. Municipalities in household survey sample are marked in red.
Table B.1: Summary Statistics for Household Survey

<table>
<thead>
<tr>
<th>Statistic</th>
<th>N</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Access Index</td>
<td>1,227</td>
<td>0.10</td>
<td>0.94</td>
<td>−3.69</td>
<td>2.14</td>
</tr>
<tr>
<td>Vote Share in Most Voted CC</td>
<td>1,227</td>
<td>0.29</td>
<td>0.12</td>
<td>0.08</td>
<td>0.61</td>
</tr>
<tr>
<td>Vote Share Fractionalization</td>
<td>1,227</td>
<td>0.84</td>
<td>0.08</td>
<td>0.60</td>
<td>0.96</td>
</tr>
<tr>
<td>Most Voted CC Won</td>
<td>1,227</td>
<td>0.71</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Assoc. Pres. Same Person or Family</td>
<td>1,227</td>
<td>0.59</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Trust in Others</td>
<td>1,227</td>
<td>2.74</td>
<td>0.67</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Association Satisfaction</td>
<td>1,227</td>
<td>3.81</td>
<td>0.93</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Elites Attend Assoc. Meetings</td>
<td>1,227</td>
<td>0.46</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CC Member Lives in Community</td>
<td>1,227</td>
<td>0.09</td>
<td>0.28</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Votes at Polling Station (ln)</td>
<td>1,227</td>
<td>5.84</td>
<td>0.80</td>
<td>4.42</td>
<td>7.60</td>
</tr>
<tr>
<td>Share Resp. at Polling Station</td>
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<td>0.80</td>
<td>0.20</td>
<td>0.20</td>
<td>1.00</td>
</tr>
<tr>
<td>Distance to City Center (km)</td>
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<td>18.25</td>
<td>9.10</td>
<td>2.41</td>
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<td>0.50</td>
<td>0</td>
<td>1</td>
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<td>Age</td>
<td>1,227</td>
<td>46.95</td>
<td>12.75</td>
<td>19</td>
<td>70</td>
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<tr>
<td>Bolsa Familia Recipient</td>
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<td>0.51</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Household Assets Index</td>
<td>1,227</td>
<td>0.05</td>
<td>1.44</td>
<td>−5.59</td>
<td>5.09</td>
</tr>
</tbody>
</table>

Note: Missing values imputed based on full community mean. Sample reported excludes respondents who were not members of the association and did not have family members who were members.

Table B.2: Summary Statistics of Water Index and Components

<table>
<thead>
<tr>
<th>Statistic</th>
<th>N</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Pctl(25)</th>
<th>Pctl(75)</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Piped in Home</td>
<td>1,227</td>
<td>0.044</td>
<td>0.942</td>
<td>−2.858</td>
<td>0.350</td>
<td>0.350</td>
<td>0.350</td>
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<td>Access to Rainwater Cisterns (Ranking)</td>
<td>1,227</td>
<td>0.102</td>
<td>0.929</td>
<td>−2.186</td>
<td>0.121</td>
<td>0.121</td>
<td>1.275</td>
</tr>
<tr>
<td>Perception of Water Access in Community</td>
<td>1,227</td>
<td>0.064</td>
<td>0.987</td>
<td>−2.965</td>
<td>−0.687</td>
<td>0.453</td>
<td>1.592</td>
</tr>
<tr>
<td>Days Without Water in Last 30 Days (Ranking)</td>
<td>1,227</td>
<td>0.051</td>
<td>0.961</td>
<td>−4.842</td>
<td>0.406</td>
<td>0.406</td>
<td>0.406</td>
</tr>
<tr>
<td>No Use of Emergency Water Truck in Last Year</td>
<td>1,227</td>
<td>−0.001</td>
<td>1.001</td>
<td>−1.377</td>
<td>−1.377</td>
<td>0.728</td>
<td>0.728</td>
</tr>
<tr>
<td>Satisfaction with Water Quality</td>
<td>1,227</td>
<td>0.072</td>
<td>0.946</td>
<td>−2.912</td>
<td>−0.755</td>
<td>0.323</td>
<td>1.401</td>
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<tr>
<td>Perception of Equal Water Use</td>
<td>1,227</td>
<td>−0.004</td>
<td>1.010</td>
<td>−1.092</td>
<td>−1.092</td>
<td>0.976</td>
<td>0.976</td>
</tr>
</tbody>
</table>

Note: Variables are transformed into z-scores. The full index is a mean of the component z-scores. Missing values are imputed based on full community mean. Sample reported excludes respondents who were not members of the association and did not have family members who were members.
### Table B.3: Difference between Leaders and Members

<table>
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<tr>
<th></th>
<th>Leaders</th>
<th></th>
<th>Members</th>
<th></th>
<th>Diff</th>
<th>Diff SE</th>
<th>Stat Sig</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
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<td>11.59</td>
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<td>0.79</td>
<td>**</td>
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<td>0.49</td>
<td>0.46</td>
<td>0.5</td>
<td>0.11</td>
<td>0.03</td>
<td>***</td>
</tr>
<tr>
<td>Education Series</td>
<td>1.92</td>
<td>1.21</td>
<td>1.32</td>
<td>1.1</td>
<td>0.6</td>
<td>0.08</td>
<td>***</td>
</tr>
<tr>
<td>Bolsa Familia Recipient</td>
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<td>0.5</td>
<td>0.52</td>
<td>0.5</td>
<td>-0.06</td>
<td>0.03</td>
<td>*</td>
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<tr>
<td>Sum of Services</td>
<td>2.28</td>
<td>0.72</td>
<td>2.17</td>
<td>0.73</td>
<td>0.11</td>
<td>0.05</td>
<td>**</td>
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<tr>
<td>Sum of Household Assets</td>
<td>6.48</td>
<td>1.92</td>
<td>5.61</td>
<td>1.76</td>
<td>0.88</td>
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<td>N</td>
<td>303</td>
<td>908</td>
<td></td>
<td></td>
<td></td>
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</table>

Note: Leaders includes anyone who is a current or past member of the association board. *p<0.1; **p<0.05; ***p<0.01.

### Table B.4: Intraclass Correlation of Main Variables

<table>
<thead>
<tr>
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<th>HH within Locality</th>
<th>Locality within Municipality</th>
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<tbody>
<tr>
<td>Water Index</td>
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<td>Trust</td>
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<td>---------------------</td>
<td>--------------------</td>
<td></td>
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<tr>
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<td>0.176** (0.075)</td>
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<td>0.121*** (0.040)</td>
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<tr>
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<td>CC Member Lives in Community</td>
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<td>Total Votes at Polling Station (ln)</td>
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<td>Share Resp. at Polling Station</td>
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<td>R²</td>
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<td>Adjusted R²</td>
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</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.889</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* *p<0.1; **p<0.05; ***p<0.01

Includes municipal FE and clustered standard errors at community level.
## Table B.6: Vote Concentration and Community Variation

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Vote Share in Most Voted CC Member</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assoc. Pres. Same Person or Family</td>
<td></td>
<td>−0.027*</td>
<td>−0.039</td>
<td>−0.027*</td>
<td>−0.027*</td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
<td>(0.041)</td>
<td>(0.016)</td>
<td>(0.015)</td>
<td></td>
</tr>
<tr>
<td>Num. Candidates Assoc. Pres.</td>
<td></td>
<td>0.020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.027)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust in Others</td>
<td></td>
<td>0.008</td>
<td>0.009</td>
<td>0.010</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>Association Satisfaction</td>
<td></td>
<td>0.005</td>
<td>−0.001</td>
<td>0.002</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.004)</td>
<td>(0.004)</td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>Elites Attend Assoc. Meetings</td>
<td></td>
<td>0.022*</td>
<td>0.027**</td>
<td>0.027**</td>
<td>0.022*</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(0.013)</td>
<td>(0.013)</td>
<td>(0.011)</td>
<td></td>
</tr>
<tr>
<td>CC Member Lives in Community</td>
<td></td>
<td>0.082***</td>
<td>0.094***</td>
<td>0.093***</td>
<td>0.082***</td>
</tr>
<tr>
<td></td>
<td>(0.026)</td>
<td>(0.033)</td>
<td>(0.029)</td>
<td>(0.027)</td>
<td></td>
</tr>
<tr>
<td>Total Votes at Polling Station (ln)</td>
<td></td>
<td>−0.036***</td>
<td>−0.046**</td>
<td>−0.032**</td>
<td>−0.036**</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td>(0.018)</td>
<td>(0.015)</td>
<td>(0.014)</td>
<td></td>
</tr>
<tr>
<td>Share Resp. at Polling Station</td>
<td></td>
<td>0.114**</td>
<td>0.086</td>
<td>0.143***</td>
<td>0.114**</td>
</tr>
<tr>
<td></td>
<td>(0.046)</td>
<td>(0.055)</td>
<td>(0.051)</td>
<td>(0.046)</td>
<td></td>
</tr>
<tr>
<td>Distance to City Center (km, ln)</td>
<td></td>
<td>0.043**</td>
<td>0.034</td>
<td>0.029</td>
<td>0.043**</td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
<td>(0.027)</td>
<td>(0.018)</td>
<td>(0.020)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>0.005</td>
<td>−0.0001</td>
<td>0.004</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.006)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>−0.0002</td>
<td>0.0003</td>
<td>−0.0001</td>
<td>−0.0002</td>
</tr>
<tr>
<td></td>
<td>(0.0003)</td>
<td>(0.0003)</td>
<td>(0.0003)</td>
<td>(0.0003)</td>
<td></td>
</tr>
<tr>
<td>Bolsa Familia Recipient</td>
<td></td>
<td>−0.005</td>
<td>0.005</td>
<td>0.006</td>
<td>−0.005</td>
</tr>
<tr>
<td></td>
<td>(0.008)</td>
<td>(0.010)</td>
<td>(0.009)</td>
<td>(0.007)</td>
<td></td>
</tr>
<tr>
<td>Household Assets Index</td>
<td></td>
<td>0.005</td>
<td>0.007*</td>
<td>−0.0002</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td>(0.004)</td>
<td>(0.004)</td>
<td>(0.003)</td>
<td></td>
</tr>
<tr>
<td>Assoc. Pres. Same Person/Family * Num. Candidates</td>
<td></td>
<td>0.015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
<td>0.249*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.127)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Municipal Fixed Effects</th>
<th>Yes Community</th>
<th>Yes Community</th>
<th>No Community</th>
<th>Yes Polling Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>1,227</td>
<td>801</td>
<td>1,227</td>
<td>1,227</td>
</tr>
<tr>
<td>R²</td>
<td>0.364</td>
<td>0.406</td>
<td>0.255</td>
<td>0.364</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.353</td>
<td>0.388</td>
<td>0.247</td>
<td>0.353</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.099</td>
<td>0.094</td>
<td>0.107</td>
<td>0.099</td>
</tr>
</tbody>
</table>

**Note:**  
*p<0.1; **p<0.05; ***p<0.01
Table B.7: Water Access and Vote Concentration

<table>
<thead>
<tr>
<th>Dependent variable: Water Access Index</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vote Share in Most Voted CC</td>
<td>0.798**</td>
<td>0.798**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.383)</td>
<td>(0.381)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote Share Fractionalization</td>
<td></td>
<td></td>
<td>−1.128*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.621)</td>
<td></td>
</tr>
<tr>
<td>Most Voted CC Won</td>
<td></td>
<td></td>
<td>0.046</td>
<td>0.096</td>
</tr>
<tr>
<td>Assoc. Pres. Same Person or Family</td>
<td>0.197**</td>
<td>0.197**</td>
<td>0.187**</td>
<td>0.179**</td>
</tr>
<tr>
<td></td>
<td>(0.077)</td>
<td>(0.078)</td>
<td>(0.076)</td>
<td>(0.075)</td>
</tr>
<tr>
<td>Trust in Others</td>
<td>0.115***</td>
<td>0.115***</td>
<td>0.115***</td>
<td>0.123***</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
<td>(0.040)</td>
<td>(0.041)</td>
<td>(0.040)</td>
</tr>
<tr>
<td>Association Satisfaction</td>
<td>0.153***</td>
<td>0.153***</td>
<td>0.152***</td>
<td>0.155***</td>
</tr>
<tr>
<td></td>
<td>(0.030)</td>
<td>(0.032)</td>
<td>(0.030)</td>
<td>(0.029)</td>
</tr>
<tr>
<td>Elites Attend Assoc. Meetings</td>
<td>0.043</td>
<td>0.043</td>
<td>0.048</td>
<td>0.059</td>
</tr>
<tr>
<td></td>
<td>(0.068)</td>
<td>(0.068)</td>
<td>(0.068)</td>
<td>(0.070)</td>
</tr>
<tr>
<td>CC Member Lives in Community</td>
<td>−0.052</td>
<td>−0.052</td>
<td>−0.062</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td>(0.119)</td>
<td>(0.118)</td>
<td>(0.124)</td>
<td>(0.120)</td>
</tr>
<tr>
<td>Total Votes at Polling Station (ln)</td>
<td>0.012</td>
<td>0.012</td>
<td>0.012</td>
<td>−0.013</td>
</tr>
<tr>
<td></td>
<td>(0.081)</td>
<td>(0.077)</td>
<td>(0.081)</td>
<td>(0.082)</td>
</tr>
<tr>
<td>Share Resp. at Polling Station</td>
<td>−0.170</td>
<td>−0.170</td>
<td>−0.157</td>
<td>−0.066</td>
</tr>
<tr>
<td></td>
<td>(0.277)</td>
<td>(0.268)</td>
<td>(0.276)</td>
<td>(0.287)</td>
</tr>
<tr>
<td>Distance to City Center (km, ln)</td>
<td>−0.143</td>
<td>−0.143</td>
<td>−0.154</td>
<td>−0.101</td>
</tr>
<tr>
<td></td>
<td>(0.094)</td>
<td>(0.094)</td>
<td>(0.095)</td>
<td>(0.093)</td>
</tr>
<tr>
<td>Male</td>
<td>−0.139***</td>
<td>−0.139***</td>
<td>−0.138**</td>
<td>−0.134**</td>
</tr>
<tr>
<td></td>
<td>(0.054)</td>
<td>(0.052)</td>
<td>(0.054)</td>
<td>(0.054)</td>
</tr>
<tr>
<td>Age</td>
<td>0.005**</td>
<td>0.005**</td>
<td>0.005**</td>
<td>0.005**</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.003)</td>
<td>(0.002)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>Bolsa Familia Recipient</td>
<td>0.049</td>
<td>0.049</td>
<td>0.048</td>
<td>0.043</td>
</tr>
<tr>
<td></td>
<td>(0.058)</td>
<td>(0.058)</td>
<td>(0.058)</td>
<td>(0.058)</td>
</tr>
<tr>
<td>Household Assets Index</td>
<td>0.018</td>
<td>0.018</td>
<td>0.018</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
<td>(0.028)</td>
<td>(0.029)</td>
<td>(0.030)</td>
</tr>
</tbody>
</table>

Municipal Fixed Effects
Clustered Standard Errors

<table>
<thead>
<tr>
<th></th>
<th>Yes Community</th>
<th>Yes Community</th>
<th>Yes Community</th>
<th>Yes Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>1,227</td>
<td>1,227</td>
<td>1,227</td>
<td>1,227</td>
</tr>
<tr>
<td>R²</td>
<td>0.132</td>
<td>0.132</td>
<td>0.130</td>
<td>0.125</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.116</td>
<td>0.116</td>
<td>0.115</td>
<td>0.109</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.886</td>
<td>0.886</td>
<td>0.886</td>
<td>0.889</td>
</tr>
</tbody>
</table>

Note: *p<0.1; **p<0.05; ***p<0.01
Figure B.2: Water Access by Number of Candidates and Leadership Turnover

Note: Limited to individuals who reported that the association used a “secret vote” to select the president; 72 communities represented. Number of candidates is calculated as the median number reported by respondents in each community, since respondents reported slightly different numbers of candidates in the previous association election. Water access is an individual-level variable; number of candidates is a community-level variable; leadership is an individual-level variable. Lines calculated using OLS on a simple regression without controls, municipal fixed effects, or clustered standard errors.
<table>
<thead>
<tr>
<th>Statistic</th>
<th>N</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Pctl(25)</th>
<th>Pctl(75)</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Index</td>
<td>403</td>
<td>0.002</td>
<td>0.25</td>
<td>-0.68</td>
<td>-0.18</td>
<td>0.17</td>
<td>0.55</td>
</tr>
<tr>
<td>Association Exist and Satisfaction Index</td>
<td>415</td>
<td>1.07</td>
<td>1.11</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Vote Share in Most Voted CC Member, 2012</td>
<td>415</td>
<td>0.27</td>
<td>0.16</td>
<td>0.05</td>
<td>0.14</td>
<td>0.37</td>
<td>0.74</td>
</tr>
<tr>
<td>Vote Share in Most Voted CC Member, 2016</td>
<td>381</td>
<td>0.25</td>
<td>0.14</td>
<td>0.04</td>
<td>0.14</td>
<td>0.31</td>
<td>0.72</td>
</tr>
<tr>
<td>Total Votes for CC Cand. at Polling Station, 2012</td>
<td>415</td>
<td>453.39</td>
<td>401.64</td>
<td>39</td>
<td>183.5</td>
<td>532</td>
<td>2,160</td>
</tr>
<tr>
<td>Total Votes for CC Cand. at Polling Station, 2016</td>
<td>381</td>
<td>574.27</td>
<td>512.94</td>
<td>46.00</td>
<td>233.00</td>
<td>696.00</td>
<td>2,436.00</td>
</tr>
<tr>
<td>Current Mayor Lives There</td>
<td>415</td>
<td>0.08</td>
<td>0.27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Past Mayor Lives There</td>
<td>415</td>
<td>0.04</td>
<td>0.20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Current CC Lives There</td>
<td>415</td>
<td>0.22</td>
<td>0.42</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Past CC Lives There</td>
<td>415</td>
<td>0.12</td>
<td>0.33</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Landowners Relationship with Politicians</td>
<td>415</td>
<td>0.66</td>
<td>1.00</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Rural</td>
<td>415</td>
<td>0.81</td>
<td>0.39</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Male</td>
<td>415</td>
<td>0.32</td>
<td>0.47</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sum of Household Assets</td>
<td>415</td>
<td>5.67</td>
<td>2.08</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
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</table>
### Table B.9: 2016 Survey – Vote Concentration and Community Variation

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable: Vote Share in Most Voted CC Member, 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assoc. Exist and Satis. Index</td>
<td>0.018$^*$</td>
</tr>
<tr>
<td></td>
<td>(0.009)</td>
</tr>
<tr>
<td>Rural</td>
<td>0.077**</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
</tr>
<tr>
<td>Polling Station Votes for CC 2016 (log)</td>
<td>$-0.0001^*$</td>
</tr>
<tr>
<td></td>
<td>(0.00002)</td>
</tr>
<tr>
<td>Leadership Same Person/Family</td>
<td>0.020</td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
</tr>
<tr>
<td>Members Propose Ideas</td>
<td>$-0.020^*$</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
</tr>
<tr>
<td>Landowner Rel. to Politician</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
</tr>
<tr>
<td>Current Mayor Lives</td>
<td>$-0.058^*$</td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
</tr>
<tr>
<td>Past Mayor Lives</td>
<td>$-0.052^*$</td>
</tr>
<tr>
<td></td>
<td>(0.027)</td>
</tr>
<tr>
<td>Current CC Lives</td>
<td>0.051***</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
</tr>
<tr>
<td>Past CC Lives</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
</tr>
<tr>
<td>HH Assets</td>
<td>$-0.004</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
</tr>
<tr>
<td>Observations</td>
<td>381</td>
</tr>
<tr>
<td>R$^2$</td>
<td>0.403</td>
</tr>
<tr>
<td>Adjusted R$^2$</td>
<td>0.374</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.111 (df = 362)</td>
</tr>
</tbody>
</table>

**Note:** Includes Municipal fixed effects. Standard errors clustered at community level.

$^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Table B.10: 2016 Survey – Water Access and Vote Concentration

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Water Access Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vote Share in Most Voted CC Member, 2012</td>
<td>0.434*** (0.104)</td>
</tr>
<tr>
<td>Assoc. Exist and Satis. Index</td>
<td>0.024 (0.017)</td>
</tr>
<tr>
<td>Rural</td>
<td>0.056 (0.059)</td>
</tr>
<tr>
<td>Polling Station Votes for CC, 2012 (log)</td>
<td>−0.027 (0.027)</td>
</tr>
<tr>
<td>Leadership Same Person/Family</td>
<td>−0.021 (0.037)</td>
</tr>
<tr>
<td>Members Propose Ideas</td>
<td>−0.035 (0.041)</td>
</tr>
<tr>
<td>Landowner Rel. to Politician</td>
<td>0.013 (0.010)</td>
</tr>
<tr>
<td>Current Mayor Lives</td>
<td>0.136** (0.055)</td>
</tr>
<tr>
<td>Past Mayor Lives</td>
<td>0.041 (0.045)</td>
</tr>
<tr>
<td>Current CC Lives</td>
<td>−0.019 (0.033)</td>
</tr>
<tr>
<td>Past CC Lives</td>
<td>−0.025 (0.036)</td>
</tr>
<tr>
<td>HH Assets</td>
<td>0.014*** (0.005)</td>
</tr>
</tbody>
</table>

Observations 403  
R² 0.247  
Adjusted R² 0.209  
Residual Std. Error 0.220 (df = 383)

Note: Includes Municipal fixed effects. Standard errors clustered at community level.  
*p<0.1; **p<0.05; ***p<0.01
APPENDIX B. SUPPLEMENTARY MATERIAL FOR CHAPTER 5

Table B.11: 2016 Survey – Water Access and Community Variation

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water Access Index</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Assoc. Exist and Satis. Index</td>
<td>0.031∗</td>
<td>0.122∗∗∗</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.034)</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>0.123∗∗</td>
<td>0.179∗∗∗</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.061)</td>
<td>(0.054)</td>
<td></td>
</tr>
<tr>
<td>Leadership Same Person/Family</td>
<td>−0.017</td>
<td>−0.026</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.040)</td>
<td>(0.040)</td>
<td></td>
</tr>
<tr>
<td>Members Propose Ideas</td>
<td>−0.050</td>
<td>−0.038</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.042)</td>
<td>(0.041)</td>
<td></td>
</tr>
<tr>
<td>Landowner Rel. to Politician</td>
<td>0.013</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.010)</td>
<td></td>
</tr>
<tr>
<td>Current Mayor Lives</td>
<td>0.122∗∗</td>
<td>0.154∗∗∗</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.057)</td>
<td>(0.057)</td>
<td></td>
</tr>
<tr>
<td>Past Mayor Lives</td>
<td>0.019</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.043)</td>
<td>(0.043)</td>
<td></td>
</tr>
<tr>
<td>Current CC Lives</td>
<td>−0.004</td>
<td>−0.004</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.038)</td>
<td>(0.038)</td>
<td></td>
</tr>
<tr>
<td>Past CC Lives</td>
<td>−0.013</td>
<td>−0.018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.036)</td>
<td>(0.036)</td>
<td></td>
</tr>
<tr>
<td>Polling Station Votes for CC, 2012 (log)</td>
<td>−0.032</td>
<td>−0.025</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.028)</td>
<td>(0.027)</td>
<td></td>
</tr>
<tr>
<td>HH Assets</td>
<td>0.012∗</td>
<td>0.012∗</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>Rural * Assoc. Index</td>
<td>−0.100∗∗∗</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>403</td>
<td>403</td>
</tr>
<tr>
<td>R²</td>
<td>0.196</td>
<td>0.209</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.158</td>
<td>0.170</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.227 (df = 384)</td>
<td>0.225 (df = 383)</td>
</tr>
</tbody>
</table>

Note: Includes Municipal fixed effects. Standard errors clustered at community level.

*p<0.1; **p<0.05; ***p<0.01
Figure B.3: 2016 Survey – Vote Concentration in 2012 and 2016
Figure B.4: 2016 Survey – Water Access and Community Variation

![Figure B.4: 2016 Survey – Water Access and Community Variation](image)
Appendix C

Supplementary Material for Electoral Concentration in the Long-Run
### Table C.1: Voting Behavior Over Time

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Pooled (1)</th>
<th>Previous Most Voted CC Member Ran (2)</th>
<th>Previous Most Voted CC Ran (3)</th>
<th>Previous Most Voted Did Not Run (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vote Share in Most Voted CC Member (lag)</td>
<td>0.730***</td>
<td>0.763***</td>
<td>0.747***</td>
<td>0.646***</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.019)</td>
<td>(0.011)</td>
</tr>
<tr>
<td>Previous Most Voted CC Member Ran</td>
<td>0.011***</td>
<td>(0.001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Voted CC Member Won (lag)</td>
<td>−0.022***</td>
<td>−0.027***</td>
<td>−0.027***</td>
<td>−0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.004)</td>
<td></td>
<td>(0.0002)</td>
</tr>
<tr>
<td>Number Votes at Section</td>
<td>−0.0001***</td>
<td>−0.0001***</td>
<td>−0.0001***</td>
<td>−0.0001***</td>
</tr>
<tr>
<td></td>
<td>(0.00001)</td>
<td>(0.00001)</td>
<td></td>
<td>(0.00002)</td>
</tr>
<tr>
<td>Number of Votes in Mun (log)</td>
<td>0.007</td>
<td>−0.017</td>
<td>−0.016</td>
<td>0.048</td>
</tr>
<tr>
<td></td>
<td>(0.024)</td>
<td>(0.026)</td>
<td>(0.026)</td>
<td>(0.038)</td>
</tr>
<tr>
<td>Number Effective CC Cand in Mun (log)</td>
<td>−0.086***</td>
<td>−0.093***</td>
<td>−0.092***</td>
<td>−0.074***</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.010)</td>
</tr>
<tr>
<td>Number of Sections in Mun (log)</td>
<td>−0.002</td>
<td>0.006</td>
<td>0.005</td>
<td>−0.022</td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td>(0.024)</td>
<td>(0.024)</td>
<td>(0.033)</td>
</tr>
<tr>
<td>Vote Share Most Voted (lag) * Most Voted Won (lag)</td>
<td>0.021</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>46,770</td>
<td>29,986</td>
<td>29,986</td>
<td>16,758</td>
</tr>
<tr>
<td>R^2</td>
<td>0.674</td>
<td>0.728</td>
<td>0.728</td>
<td>0.583</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>0.672</td>
<td>0.726</td>
<td>0.726</td>
<td>0.578</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.084</td>
<td>0.079</td>
<td>0.079</td>
<td>0.090</td>
</tr>
</tbody>
</table>

Note: Includes municipal fixed effects, election year fixed effects, and clustered standard errors at municipal level.
<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same Top CC Candidate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote Share in Most Voted CC Member (lag)</td>
<td>1.339***</td>
<td>1.195***</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td>(0.056)</td>
</tr>
<tr>
<td>Most Voted CC Member Won (lag)</td>
<td>−0.052***</td>
<td>−0.099***</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.023)</td>
</tr>
<tr>
<td>Number Votes at Section</td>
<td>0.001***</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.0001)</td>
<td>(0.0001)</td>
</tr>
<tr>
<td>Number of Votes in Mun (log)</td>
<td>−0.273*</td>
<td>−0.268*</td>
</tr>
<tr>
<td></td>
<td>(0.142)</td>
<td>(0.143)</td>
</tr>
<tr>
<td>Number Effective CC Cand in Mun (log)</td>
<td>−0.135***</td>
<td>−0.133***</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
<td>(0.041)</td>
</tr>
<tr>
<td>Number of Sections in Mun (log)</td>
<td>0.270**</td>
<td>0.262**</td>
</tr>
<tr>
<td></td>
<td>(0.126)</td>
<td>(0.126)</td>
</tr>
<tr>
<td>Vote Share Most Voted (lag) * Most Voted Won (lag)</td>
<td></td>
<td>0.190***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.061)</td>
</tr>
</tbody>
</table>

Observations                          | 29,986    | 29,986    |
R²                                    | 0.193     | 0.193     |
Adjusted R²                           | 0.188     | 0.188     |
Residual Std. Error                   | 0.447     | 0.447     |

Note: Limited to sections where previous most voted CC candidate ran for office. Includes municipal fixed effects, election year fixed effects, and clustered standard errors at municipal level.

*p<0.1; **p<0.05; ***p<0.01
Appendix D

Survey and Interview Methodology

The following text is taken from the Pre-Analysis Plan: Participatory Measurement, Monitoring, and Management of Groundwater in Northeast Brazil filed on May 9, 2018 (Cooperman, Seim, and Richey, 2018).

Between June and September 2017, we conducted baseline surveys in 120 communities from 10 municipalities in the interior of Ceará. We first defined a sampling frame consisting of municipalities from Ceará’s four water basins: Acaraú, Sertão de Cratéus, Banabuiú, and Salgado. Water basins differ in geological and geographic characteristics such as distance to state capital, access to major rivers, groundwater salinity, hydrogeology, aquifer characteristics, and the regional office of the state water agency COGERH to which they report. Off of the sampling frame, we drew a random sample of 10 municipalities, stratifying on water basin and subject to the following criteria:

1. **Geological**: Municipalities should be situated over the state’s crystalline geological zone, which is the dominant geological zone. Crystalline soil limits interference between different wells and is characterized by small wells as the principal groundwater source. These sources are vulnerable to overuse due to the unknown, though often small, water deposits.
2. **Governance**: Municipalities should be situated inside the state’s official semi-arid zone, so that they are under the same environmental and climate limitations.

3. **Size**: Municipalities should have medium to large population and geographic area relative to the other 150 municipalities. This criterion maximizes the number of communities with active associations and the distance between selected communities to reduce spillovers.

The final municipality list is: Catunda, Cedro, Crateús, Hidrolândia, Independência, Lavras da Mangabeira, Mombaça, Pedra Branca, Quixadá, and Quixeramobim.

For each municipality, we restricted the sample of potential communities to (i) localities where the association is moderately or very active; and (ii) there was at least one functioning well used by community members. To collect this information, two research assistants traveled to each of the 10 municipalities in May 2017 and spoke with local experts from the municipal government or from civil society organizations. These experts provided a list of all registered community associations in the municipality. Research assistants then independently verified the information provided by experts and ruled out any localities that did not meet (i) and (ii) and were not neighbors (and therefore subject to high spillovers and likelihood of the same operator serving both communities). The remaining list entered the pool of potential research sites, from which we randomly drew a list of about 30 communities, where possible depending on the number of total communities, broken down into three groups: (1) group one containing a list of the 12 communities to be surveyed; (2) group two containing six communities to be surveyed in case any of the first 12 localities did not meet criteria (i) or (ii) after on-site visit and verification; (3) group three containing the remaining communities in case all others did not meet the community or well criteria. The total number of localities varies depending on the size of the municipality and the number of communities that fit the criteria of (i) and (ii). In total, we have surveyed 120 communities at baseline, with an average of 16 households participating in the survey in each community.
Table D.1: Communities Surveyed by Municipality

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catunda</td>
<td>6</td>
</tr>
<tr>
<td>Cedro</td>
<td>12</td>
</tr>
<tr>
<td>Crateús</td>
<td>15</td>
</tr>
<tr>
<td>Hidrolândia</td>
<td>9</td>
</tr>
<tr>
<td>Independência</td>
<td>15</td>
</tr>
<tr>
<td>Lavras da Mangabeira</td>
<td>12</td>
</tr>
<tr>
<td>Mombaça</td>
<td>12</td>
</tr>
<tr>
<td>Pedra Branca</td>
<td>12</td>
</tr>
<tr>
<td>Quixadá</td>
<td>12</td>
</tr>
<tr>
<td>Quixeramobim</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

We deployed enumeration teams for baseline research in Summer 2017. The teams had at least one water resources student/professional and at most three social sciences students/professionals. Enumerators were in the field between June and September 2017. For the intervention, we will employ seven teams of one social sciences and one water resources student or young professional. They will revisit the 80 communities selected for T1 or T2 during a 30-day period in May-June 2018. Finally, the same strategy used for baseline research will be employed for endline data collection. The endline data collection dates are pending, and we will update the PAP with this information once it is decided.

While these in-person surveys are more expensive and time-intensive, they are critical to collecting household-level information about water use and community members’ perceptions of access that is otherwise unavailable. In most rural communities, a local citizen serves as the water “operator” to manage an existing community water system, such as a communal well or piped network from a local well into households. We include a separate survey module with the water operator in each community to capture any pre-existing water management information in each community.

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There are four main groups of people that we surveyed in each community: households in the larger cluster of houses, the “populated area”; dispersed households and landowners, the “rural area”; community association leaders; and water operators or other water expert(s).

At baseline, we visited one community per day and surveyed an average of 16 people across these four groups – though in all communities at least two of these respondents were the CA leaders and water operator.\(^1\) When communities had a cluster of more than 20 houses, the enumeration team followed a random walk pattern to select households. First, they started off from a prominent community center, usually a small church/chapel, and walked in different directions for up to two minutes (community size allowing). After the initial walk, they sampled the first house available and from then on they skipped two houses before next survey. In cases where there were houses on both sides of the road, they would each survey their right-hand side first and then alternate sides.\(^2\) For the rural area, they would identify dispersed houses on the drive in/out of the community and ask families where to find remaining households who were also members in the CA.

For community association leaders, the enumeration team used a snowball sampling approach and asked citizens in public areas who the association leaders were and where they lived. They first sought out the president, but if the president was unavailable, they sought out other members of the leadership (vice-president, treasurer, secretary, etc.). This was surprisingly easy, given the small size of the communities and that community members are very familiar with association positions and where people live and work. Association leaders were eager to participate and share their experiences, especially since they were sought out as being leaders in their communities. Water

\(^1\)It is not unusual that CA leader and operator are the same person, in which case we surveyed the same individual for both community and well information. Only rarely there were more than one water operator in community, in which case we interviewed at least the most knowledgeable operator.

\(^2\)Since they were walking in opposite directions, this process ensures no bias from house construction and sunlight patterns.
experts were surveyed the same way, and teams assigned their water resources expert to speak to operators and visit well(s) to collect the relevant hydrologic information.

Prior to survey participation, the enumerators read a recruitment and consent script on the information sheet, offered a copy of the information sheet/consent form, and obtained oral consent. The research presents no more than minimal risk, and written consent is uncommon in this setting, so oral consent is both more culturally appropriate and less invasive for this study. Subjects were in their own homes and the consent process and resulting survey only captured the head of household’s opinions; in a small number of cases, other family members were present during the interview but were asked (and complied) not to interfere with the answers. All survey elements were conducted in Portuguese.

The endline survey will follow the same structure. Both in Cooperman’s pilot survey in 2016 and at baseline, participation rates were high and only in a handful of cases respondents turned enumerators down. They were eager to share their experiences on a wide range of topics and were happy to speak and participate in the survey for 30-45 minutes.
## Table D.2: Interview Methods Appendix: Rural Stakeholders

<table>
<thead>
<tr>
<th>Number</th>
<th>Interviewee</th>
<th>Date</th>
<th>Source</th>
<th>Format</th>
<th>Length</th>
<th>Recording</th>
<th>Selection</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor urban HH</td>
<td>17-Apr-16</td>
<td>Random walk</td>
<td>Semi-structured</td>
<td>1 hour, 28 mins.</td>
<td>Audio recorded</td>
<td>A 1A: Outskirts of urban zone</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Water truck driver</td>
<td>17-Apr-16</td>
<td>Snowball</td>
<td>Semi-structured</td>
<td>11 mins.</td>
<td>Audio recorded</td>
<td>A 1A: Outskirts of urban zone</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Private water salesman</td>
<td>17-Apr-16</td>
<td>Snowball</td>
<td>Semi-structured</td>
<td>41 mins.</td>
<td>Audio recorded</td>
<td>A 1A: Outskirts of urban zone</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Poor rural HH</td>
<td>18-Apr-16</td>
<td>Random walk</td>
<td>Semi-structured</td>
<td>50 mins.</td>
<td>Audio recorded</td>
<td>IB: Rural district</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Water system operator</td>
<td>18-Apr-16</td>
<td>Snowball</td>
<td>Semi-structured</td>
<td>12 mins.</td>
<td>Audio recorded</td>
<td>IC: Rural community</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Poor rural HH</td>
<td>18-Apr-16</td>
<td>Random walk</td>
<td>Semi-structured</td>
<td>18 mins.</td>
<td>Audio recorded</td>
<td>ID: Rural community</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Poor rural HH</td>
<td>18-Apr-16</td>
<td>Random walk</td>
<td>Semi-structured</td>
<td>41 mins.</td>
<td>Audio recorded</td>
<td>IE: Rural district</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Association President</td>
<td>18-Apr-16</td>
<td>Snowball</td>
<td>Semi-structured</td>
<td>1 hour, 17 mins.</td>
<td>Audio recorded</td>
<td>IE: Rural district</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Rural extension worker</td>
<td>19-Apr-16</td>
<td>Water Basin Meetings</td>
<td>Open-ended</td>
<td>20 mins.</td>
<td>Notebook after</td>
<td>IF: Community meeting</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Community member</td>
<td>19-Apr-16</td>
<td>Water Basin Meetings</td>
<td>Open-ended</td>
<td>15 mins.</td>
<td>Notebook after</td>
<td>IF: Community meeting</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>COMDEC staff</td>
<td>20-Apr-16</td>
<td>Targeted</td>
<td>Open-ended</td>
<td>1 hour, 48 mins.</td>
<td>Audio recorded</td>
<td>2A: Municipal center</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Mayor</td>
<td>20-Apr-16</td>
<td>Targeted</td>
<td>Semi-structured</td>
<td>52 mins.</td>
<td>Audio recorded</td>
<td>2B: Rural community</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Poor rural HH</td>
<td>21-Apr-16</td>
<td>Random walk</td>
<td>Semi-structured</td>
<td>16 mins.</td>
<td>Audio recorded</td>
<td>2B: Rural community</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Poor rural HH</td>
<td>21-Apr-16</td>
<td>Random walk</td>
<td>Semi-structured</td>
<td>43 mins.</td>
<td>Audio recorded</td>
<td>2B: Rural community</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Poor rural HH</td>
<td>21-Apr-16</td>
<td>Random walk</td>
<td>Semi-structured</td>
<td>1 hour, 6 mins.</td>
<td>Audio recorded</td>
<td>2C: Rural community</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Pres. of Federation of Assoc.</td>
<td>21-Apr-16</td>
<td>Snowball</td>
<td>Semi-structured</td>
<td>52 mins.</td>
<td>Audio recorded</td>
<td>2D: Rural community</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Poor rural HH</td>
<td>21-Apr-16</td>
<td>Snowball</td>
<td>Semi-structured</td>
<td>28 mins.</td>
<td>Audio recorded</td>
<td>2E: Rural community</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Taxi driver</td>
<td>21-Apr-16</td>
<td>Snowball</td>
<td>Open-ended</td>
<td>30 mins.</td>
<td>Notebook after</td>
<td>2F: Municipal center</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Poor rural HH</td>
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<td>36 mins.</td>
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<td>Snowball</td>
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<td>28-Apr-16</td>
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<td>43 mins.</td>
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### Table D.3: Interview Methods - Appendix: Rural Stakeholders (cont.)

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<thead>
<tr>
<th>Number</th>
<th>Interviewee</th>
<th>Date</th>
<th>Source</th>
<th>Format</th>
<th>Length</th>
<th>Recording</th>
<th>Selection Community</th>
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<td>12-Apr-17</td>
<td>Random walk</td>
<td>Semi-structured</td>
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<td>22 mins.</td>
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<tr>
<td>96</td>
<td>Meeting with staff from water management NGO (SISAR)</td>
<td>24-Aug-17</td>
<td>Rural water access and management</td>
<td>Open-ended</td>
<td>1 hour</td>
<td>Notes during interview</td>
<td></td>
</tr>
<tr>
<td>97</td>
<td>Coordinator, state Institute of Statistics, Geography, and Information (IPECE)</td>
<td>21-Sep-17</td>
<td>Drought criteria and data access</td>
<td>Open-ended</td>
<td>2 hours</td>
<td>Notes during interview</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>Analyst, state Institute of Statistics, Geography, and Information (IPECE)</td>
<td>28-Sep-17</td>
<td>Drought criteria and data access</td>
<td>Open-ended</td>
<td>1 hour, 30 mins</td>
<td>Notes during interview</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>Manager, state Secretariat of Agrarian Development (SDA - Projeto Paulo Freire)</td>
<td>2-Oct-17</td>
<td>Rural water access and social dynamics</td>
<td>Open-ended</td>
<td>1 hour</td>
<td>Notes during interview</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Coordinator, state Secretariat of Agrarian Development (SDA - Projeto São José)</td>
<td>3-Oct-17</td>
<td>Rural development projects</td>
<td>Open-ended</td>
<td>40 mins</td>
<td>Notes during interview</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Coordinator, state Secretariat of Agrarian Development (SDA - COPPE)</td>
<td>3-Oct-17</td>
<td>Rural water cisterns program</td>
<td>Open-ended</td>
<td>30 mins</td>
<td>Notes during interview</td>
<td></td>
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<tr>
<td>102</td>
<td>Analyst, state Secretariat of Health</td>
<td>4-Oct-17</td>
<td>Rural health access</td>
<td>Open-ended</td>
<td>1 hour, 30 mins</td>
<td>Notes during interview</td>
<td></td>
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<tr>
<td>103</td>
<td>Planning Advisor, state Rural Extension and Technical Assistance agency (EMATERCE)</td>
<td>5-Oct-17</td>
<td>Drought relief program - Rural technical assistance</td>
<td>Open-ended</td>
<td>2 hours</td>
<td>Notes during interview</td>
<td></td>
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<tr>
<td>104</td>
<td>Coordinator, state Secretariat of Agrarian Development (SDA - COCRED)</td>
<td>9-Oct-17</td>
<td>Drought relief program - Garantia Safra</td>
<td>Open-ended</td>
<td>2 hours</td>
<td>Notes during interview</td>
<td></td>
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</tbody>
</table>
Table D.5: Interview Appendix: Selection Process

<table>
<thead>
<tr>
<th>Process</th>
<th>Municipal</th>
<th>Community</th>
<th>Household</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Variation in 2012 mayor electoral competition and regional water access; Neighboring municipalities in each region of state.</td>
<td>Variation in concentration of votes at community polling station for city council members in 2012.</td>
<td>Random walk in rural village.</td>
<td>Portuguese with support of local RA with B.A. in social work and qualitative research training.</td>
</tr>
<tr>
<td>B</td>
<td>Location of regional water headquarters and large municipality with water scarcity.</td>
<td>Community uses well and has a community association, identified with help of regional water management staff.</td>
<td>Random walk in rural village.</td>
<td>Portuguese with support of local RA with B.A. in social work and qualitative research training.</td>
</tr>
<tr>
<td>C</td>
<td>Location in dry, central part of state.</td>
<td>Variation in concentration of voting at polling station, number of voters at polling station, and whether the most voted candidate won or lost.</td>
<td>Random walk in rural village.</td>
<td>Portuguese.</td>
</tr>
</tbody>
</table>

Note: Respondents were not compensated for their participation. All respondents gave oral informed consent before participating in the interview. Most interviews in rural communities were conducted in the late morning or afternoon, and most local residents were home after farming in the early morning to avoid the heat. Response rates were very high.