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Social Networks and Illegal Electoral Strategies

A dissertation submitted in partial satisfaction of the
requirements for the degree
Doctor of Philosophy

in

Political Science

by

Araceli Cruz

Committee in charge:

David Lake, Chair
Philip Keefer, Co-Chair
Eli Berman
James Lawrence Broz
James Fowler
Edmund Malesky

2014

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The dissertation of Araceli Cruz is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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University of California, San Diego

2014

DEDICATION

To my parents.

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ABSTRACT OF THE DISSERTATION

Social Networks and Illegal Electoral Strategies

by

Araceli Cruz

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Philip Keefer, Co-Chair

Elections in consolidating democracies are often undermined by illegal electoral strategies such as vote buying and electoral violence. Previous research has focused on the mechanisms of political exchange and the systemic factors that contribute to vote buying or violence. By contrast, this dissertation addresses the broader questions of how politicians choose among different electoral strategies, how they target voters, and the implications for accountability and economic development.

Among politicians, the structure of their social networks affects their choice of electoral strategy. In particular, vertical connections among politicians (such as ties among governors, mayors, and congressmen) facilitates

individually targeted policies because the overlapping constituencies encourages collusion to target the same voters. By contrast, horizontal connections among politicians (such as ties among mayors of different towns) promote cooperation and information sharing, making group-targeted strategies such as pork barrel funding more attractive. Among voters, their position within village social networks determine whether they are targeted for illegal electoral strategies. Individuals with more social ties are disproportionately targeted for vote buying, while individuals with politically-relevant ties are targeted for electoral violence and intimidation.

Understanding the politician and voter social network determinants of illegal electoral strategies is important for the design of policy initiatives to promote accountability and development-friendly electoral strategies.

Chapter 1

Introduction

Given political market imperfections, how can political actors be incentivized to choose pro-growth or development oriented policies? Indeed, the problem facing development aid is to reconcile the fact that growth-promoting policies, such as public goods provision, are not always attractive to politicians seeking re-election (Bueno de Mesquita et al., 2003; Vicente and Wantchekon, 2009). In fact, although the choice of electoral strategies is often presented as a choice between programmatic politics and clientelism, this has the disadvantage of leaving out the range of illegal electoral strategies prevalent in many consolidating democracies. Such illegal strategies include electoral violence, intimidation, and vote buying. This dissertation focuses on how politician and voter social networks can affect the choice of electoral strategies, the targeting of these strategies to voters, and the subsequent implications for democratic processes and economic outcomes.

Social Networks and Electoral Strategies

Under Cox and McCubbins (1986)'s "core voter" model, politicians target their supporting constituencies.[1] By contrast, Lindbeck and Weibull

[1]For example, Diaz-Cayeros, Magaloni and Weingast (2003) find that dominant parties in Mexico sustain their position using the strategic disbursement of central government funds to supporting municipalities. Burgess et al. (2013) find that, in a non-democratic context, more funding for roads goes to districts that share the ethnicity of the president. Similarly, Barkan

(1987) argue that parties target "swing" voters, which rewards undecided or unmobilized voters.[2] Dixit and Londregan (1996) find that the presence of informational advantages affects the strategies parties use when targeting groups for redistribution. In other words, parties target moderates for redistribution only when there are no informational advantages within their core constituency; otherwise, parties target their core constituency.

However, in political environments without meaningful differences between parties and programs, the "core" vs. "swing" distinction is less helpful. Campaign promises are not credible and there are no ideological divides between parties that politicians can use to stake out positions. In addition, at the most basic level, for electoral institutions to function as mechanisms for accountability, voters need to be sufficiently informed to be able to attribute political outcomes to the actions of the government and their representatives (Popkin, 2007). The need to assume that voters have sufficient information about politics may make these theories less applicable for developing countries, where the mechanisms for transmitting political information may differ (Cruz and Schneider, 2014; Platteau and Abraham, 2002). In fact, Keefer (2005) identifies a lack of information about the performance of politicians as one of three broad types of "political market imperfections" that hamper accountability in developing countries.

In this context, this dissertation uses a social network approach to analyze how village-level social structures and individual relationships correlate with politician strategies for winning elections. Social network analysis is useful for understanding the targeting of political strategies because of the importance of networks for providing information. Social networks are defined as "finite sets of actors and the relation or relations defined on them" (Wasserman and Faust, 1994). At the most basic level, social network analysis

---

and Chege (1989) show that during the 1980s, funding for road construction in Kenya was targeted to areas that supported President Daniel Arap Moi.

[2] In India, for example, Khemani (2003) finds that central government resources are strategically targeted to areas where the party can potentially win additional seats rather than to their core bases of support. Schady (2000) also finds that allocations from the Peruvian Social Fund FONCODES were targeted to provinces where the increased funds were expected to have the greatest electoral effect.

focuses on either the individual's position in the social network as a function of ties to other individuals or the structural features of the network as a whole (Granovetter, 1973; Putnam, 2000).

The literature on social networks indicates that social ties are sources of information and determinants of political participation (Nickerson, 2008; Huckfeldt and Lake, 1998; Huckfeldt and Sprague, 1995; McClurg, 2003) and social cooperation (Breza, Chandrasekhar and Larreguy, 2013; Apicella et al., 2012; Fowler and Christakis, 2010). In low-information political environments such as consolidating democracies, social connectedness may even be the primary source for political information, especially at the local level. For example, the Philippines is a country with a comparatively free and active press, but while 98 percent of survey respondents in the Philippines list the media as a source of political information about national politics, that number drops to 58 percent for information about local politics (Campos and Hellman, 2005). In fact, 42 percent of respondents cite community leaders, personal and social networks as a source of information about local politics (Campos and Hellman, 2005).

Dissertation Overview

My dissertation research focuses on a new area of inquiry in comparative politics: explaining the differences in electoral strategies of politicians in developing countries and the implications for economic development. In particular, my dissertation raises the following questions: when do politicians resort to vote buying, patronage, or coercion; how do they target voters; and how do these choices co-vary with the services that governments provide? I develop theory and present evidence demonstrating a significant role for social networks in answering these questions. Among politicians, I show that the structure of their social networks affects their choice of electoral strategy. Among voters, results show that their social networks are as important as their ties to specific politicians: politicians target

the socially connected for vote buying and the socially influential for electoral violence and intimidation.

The second chapter links politician networks to the decision to engage in individually-targeted vs. group-targeted political exchange. In consolidating democracies, poorly developed political parties and weak institutions can make it difficult for politicians to make credible campaign promises. As a result, politicians rely on individually-targeted payoffs and promises, such as vote buying, or on policies targeted to narrow groups, such as pork barrel politics. Although these strategies have been well-studied, relatively little is known about how politicians choose between them. Politician networks refer to ties between politicians, which include formal ties such as party affiliations and political alliances to more informal ties such as family connections or friendships. I argue that politician networks differentially affect the costs of monitoring and enforcing each type of political exchange. In particular, vertical connections among politicians (among governors, mayors, and congressmen, e.g.) facilitates individually targeted policies because the overlapping constituencies encourages collusion to "buy" the same votes. By contrast, horizontal connections among politicians (mayors of different towns, e.g.) promote cooperation and information sharing, making group-targeted strategies such as pork barrel funding more attractive.

The third and fourth chapters show how politicians can use voter social networks for the targeting of illegal electoral strategies. The literature on social networks as a means of targeting for political strategies has mainly focused on explaining patronage using politician networks or voter ties to politicians. These models have not addressed the role of voter social networks, nor why some individuals are targeted for illegal electoral strategies at the expense of other strategies. These chapters extend the current literature by showing that there are important features of social networks at the individual level and that these networks affect politician costs for targeting voters. In particular, the same kinship and friendship networks that can facilitate cooperation and information transmission in communities can also be used by politicians to

engage in illegal electoral strategies.

The third chapter examines how large social networks facilitate the identification and monitoring of voters for vote buying. Using a survey of 864 households in the Philippines, the principal finding is that individuals with more social ties are disproportionately targeted for vote buying. In addition, this paper exploits differences in vote secrecy in order to provide evidence for the monitoring mechanism of networks, on the rationale that monitoring voters is only necessary when the vote is perceived to be secret.

The fourth chapter shows how the individual position in the social network affects the targeting of electoral violence and intimidation. Voters that are politically influential within their local communities are disproportionately targeted for coercion, even when controlling for other factors that may affect vulnerability (such as political involvement or direct ties to a politician). Individuals with politically-relevant ties are attractive targets for coercion because while they are influential within their villages, they are not as prominent as rival candidates, so targeting them runs a lower risk of retaliation or prosecution by the government. Initiatives aimed at addressing elections-related violence tend to focus on events that occur on election day. By contrast, this chapter shows that understanding how voters are targeted for coercion in the pre-election period is important for the design of better government initiatives for protecting those vulnerable to these strategies.

The fifth chapter tests the equilibrium relationships between electoral strategies and economic outcomes. While there has been substantial evidence that democracy has a positive effect on service delivery and economic outcomes (Baum and Lake, 2003), there has been less consensus on how these effects differ depending on electoral strategies. Electoral strategies that rely on long-term reputational solutions to political commitment problems are positively associated with improvements in public service delivery. By contrast, electoral strategies that can be implemented as one-shot interactions with voters are associated with reduced public service delivery after the elections. Vote buying and coercion are associated with reduced public service

delivery, while patronage and pork barrel politics are associated with improvements in service delivery after the elections. There is a tendency to group together all non-programmatic electoral strategies as equally harmful for development. However, this chapter makes the case for a more nuanced perspective in understanding the implications of the different electoral strategies for politician incentives to pursue development-friendly policies after the elections.

Research Design and Surveys

The Philippines provides an excellent laboratory for studying electoral strategies. It is typical of many consolidating democracies in that campaign promises are not credible and voting tends to be retrospective (Labonne, 2013*a*). Local elections are hotly contested and politicians use the entire menu of political strategies: buying votes, intimidating and harassing voters, stealing ballot boxes and bribing elections officials. There are even a few politicians that are known for good performance and improving service delivery (Khemani, 2011).

As part of this project, I conducted fieldwork in Isabela Province, the second largest province in the Philippines. Isabela province is primarily agricultural and considered to be the rice and corn granary of Luzon. The province has a total land area of 10,665 square kilometers, representing almost 40 percent of the regional territory. One of the considerations in selecting the province of Isabela was the availability of a large number of municipalities (35 in total) and villages (*barangay*) that are typical of many other areas of the country–representing different degrees of urban development and different income classes. Comparing local government units within a single province removes much of the concern with institutional and regional/cultural differences and allows for a focus on the politician incentives to pursue different types of electoral strategy.

This project uses data from two surveys on local service delivery and the

elections, conducted in Isabela Province, Philippines. The 2009 survey was funded by the World Bank and conducted with the assistance of a team from the University of the Philippines, Los Baños. I assisted with the design and implementation of this survey as a consultant with the project. I added two modules to the survey: one on social networks and political influence, and the other on vote buying and vote secrecy. For each municipality, extensive key informant interviews will be conducted with the mayor, municipal planning and development officer, treasurer and/or accountant, municipal engineering officer, and the municipal health officer. Within each municipality, 2 barangays are chosen using poverty levels as a selection criteria: first, the poorest half of barangays are selected using existing poverty estimates; second, the largest two barangays in terms of population were selected from among the poorest half of barangays. Key informant interviews will be conducted with the barangay captain of each barangay, and household surveys will be conducted on 20 households per barangay, for a total of 40 barangays per municipality and a total household sample of 1200. I use data from this survey primarily for chapter 2 on economic implications of electoral strategies, and as a baseline for relevant variables before the 2010 election, including data on vote buying, electoral violence, and social networks.

I designed and implemented a second survey in 2010, using funding from the National Science Foundation. My survey is a more in-depth analysis of villages (barangays) and includes an extensive social networks module. The four municipalities were randomly selected from the 30 municipalities from the baseline World Bank survey. Within each municipality, the survey covered the two barangays from the baseline World Bank survey for comparison, and four barangays chosen using sampling with probability proportional to size (PPS). PPS sampling means that the probability of selecting a barangay (the sampling unit) is proportional to the size of its population. This ensures that households in populous barangays have an equal probability of being included in the sample as households in smaller barangays. This sampling method is

well-suited to studies in which the administrative units vary in size.[3] In addition to the household surveys, this project included surveys of politicians and government officials in each municipality.[4]

Understanding Social Networks

This study addresses the issue of targeting political strategies by exploring the link between politician and voter social networks and electoral strategies. I measure both politician and voter social networks using data taken from politician and household surveys.

For politicians, the key distinction is between vertical and horizontal ties. Vertical ties refer to affiliations with other politicians holding office at different levels of government, but with overlapping constituencies. For example, the mayor may have ties to the congressman of the district and the governor of the province. Horizontal politician ties refer to the degree that politicians are connected to other politicians at the same level. In this case, whether a mayor in a municipality is connected to other mayors in the same province.

For voters, although network variables are often understood in terms of groups, individuals can also have network attributes. Individuals can be differentiated by the influence they exert within the social network and the number and quality of ties that they have to other individuals. The data collected in the surveys were used to calculate two types of social networks measures for voters: social connectedness and political influence. As described in the theory section, the size of social networks and the position of individuals within these networks affect their propensity to be targeted for illegal electoral strategies.

[3]By contrast, the World Bank survey uses an unusual sampling strategy of selecting only from the poorest barangays, on the rationale that the survey results were intended to design projects for the poorest villages. For this project, however, a more conventional sampling design was chosen.

[4]Officials interviewed include the mayor, the Municipal Accountant/Treasurer, the Municipal Planning and Development Officer, the Municipal Engineer, the Municipal Health Officer, and barangay captains (locally elected village heads).

First, *socially well-connected voters* are those with many family members and friends, and whose relationships are characterized by regular contact and interactions. These are individuals who are active in their communities. They also tend to exhibit more behaviors associated with reciprocity, especially volunteering in their communities and helping each other in emergencies.

Second, in contrast to socially-connected voters, *influential voters* are those whose opinions are respected in the community and who tend to discuss politics with their friends and family. This is *not* the same as being a political elite–political elites belong to the same networks and hold equivalent social status as politicians. By contrast, socially influential voters are those who exercise influence within their neighborhoods and villages, without necessarily having the ability to serve as kingmakers or political brokers on a larger scale.

Measuring Illegal Electoral Strategies

The variables corresponding to illegal electoral strategies are difficult to measure for a number of reasons. The most daunting are issues of sensitivity and social desirability bias (Gonzalez-Ocantos et al., 2012). Vote buying and coercion are illegal, even if the laws that forbid it are not always enforced in the Philippines. As a result, I designed the survey to use a variety of techniques to mitigate these problems, including shielded response techniques and list experiments to address sensitivity issues and multiple measures of the same concept (including measures at different levels).

The unmatched count method presents respondents with a set of statements that could have potentially happened to them during the 2010 municipal elections and respondents are asked only to report the number of items that happened to them, not which items happened to them. Treatment and control groups are assigned randomly, and the control group receives a set of control statements that are largely neutral and infrequent, while the treatment group receives the same set of control statements, plus the additional statement: "Someone offered me money or gifts for my vote." Because the groups are randomly assigned, I can estimate the prevalence of

vote buying in the barangay by merely comparing the means of the treatment and control groups, on the rationale that any additional increase in the average number of items reported can be attributed to vote buying. The results from the unmatched count technique indicate no significant under-reporting of vote buying.[5]

Current Research

I have four current research projects that all build on my dissertation research. The first, with Julien Labonne (Oxford) and Philip Keefer (World Bank), is an experimental voter education campaign conducted during the May 2013 Philippine elections. We established a partnership with the most prominent elections NGO in the country to randomize their voter education campaigns. Our NGO partner agreed to disseminate the information solicited directly from candidates, as well as track whether winning candidates fulfill their promises after taking office. Our experiment tests whether the combination of information about candidate policies and credible commitment by the NGO partner to monitor these policies will provide candidates and voters with an alternative to vote buying. Our preliminary results indicate that our intervention increased the salience of policy positions, and improved voters' knowledge of candidate promises and policies.

Second, with Julien Labonne (Oxford) and Pablo Querubin (NYU), I have a project on family connections of politicians. We are using a nationwide dataset to generate social network data indicating the extent of candidate family networks for all local elections. We will then test whether the structure of social networks in the village and the structure of candidate family networks in the village affects vote shares of candidates. To improve the reliability of our estimates, we are splitting our dataset into two randomly generated subsets.

[5]This is not to suggest a lack of social desirability bias, just that the use of the multi-question module (in which respondents were asked increasingly direct forms of the question at each stage and given the option to stop at any point) may have been sufficient for respondents to feel comfortable reporting vote buying directly. For example, Gonzalez-Ocantos et al. (2012) find that there are significant levels of social desirability bias in Nicaragua.

We will use only the first set in order to test our hypotheses, but we will estimate and report all the results for both subsets. This prevents bias in the reporting of results and provides an out-of-sample test of our models.

I am also working on a firm level survey in the Philippines with Benjamin Graham (USC). This is an application of social network analysis to explain the strategies of firms. To our knowledge, this is the first large-scale attempt to map firm social networks. Preliminary interviews indicate that firms face risks in the period following elections regardless of which party prevails. This is because the turnover in personnel, both elected and appointed, creates changes in regulatory enforcement practices and bribe-paying expectations, creating uncertainty and bureaucratic delays. We expect that more-networked firms are less likely to make campaign contributions and more likely to exchange informal favors with politicians. We also expect that more-networked firms are more effective at securing political influence, and expect to suffer less from election-related turnover. We have already secured funding and we are currently implementing the survey.

Most recently, I received a grant for a project using cell phone technology and social networks to lower the barrier to entry for new political candidates in village-level elections in the Philippines. Mayors use village officials to mobilize votes, which can perpetuate uncompetitive elections: mayors entrench themselves in power with the help of their local allies, which then gives them resources to ensure that their preferred candidates are re-elected in the next village elections. Michael Davidson and I conducted an experimental treatment that asks respondents in randomly selected villages to nominate a person that they think would be an ideal candidate. I designed a proprietary multi-tiered software system that allows us to notify nominees when they are nominated, provide them with information on filing for candidacy, and spread the message throughout the social network. While there have been a number of information campaigns targeted at voter education and empowerment, there are no similar initiatives aimed at improving the candidate selection process. This is especially crucial in consolidating

democracies because the lack of institutionalized party systems for nominations promotes the entrenchment of family dynasties and local strongmen. For political reforms to succeed, it is important not only to educate voters about responsible voting, but also to provide them with viable choices on the ballot. Preliminary results for this project suggest that our intervention significantly increased the number of candidates running for office. We are currently conducting follow-up surveys with the candidates to determine whether our intervention also improved the quality of the candidates as well.

Chapter 2

Buying One Vote at a Time or Buying in Bulk? Politician Networks and Electoral Strategies

Electoral strategies in established democracies tend to focus on issues of campaigning and voter mobilization. By contrast, in consolidating democracies, the inability to make credible campaign promises means that politicians rely on political exchange–directly or indirectly providing benefits for votes. However, there are various forms of political exchange, each with potentially different implications for politics (Nichter, 2013). Some politicians target individual voters for political exchange, while other politicians target entire areas or constituencies using a group approach. Individually-targeted strategies include clientelism and vote buying. Clientelism is based on long-term individualized relationships of continued post-electoral payoffs to individual voters or small groups of voters (Stokes, 2005; Kitschelt and Wilkinson, 2007). Vote buying entails pre-electoral cash transfers to voters in exchange for their vote (Schaffer and Schedler, 2007). Group-targeted strategies include pork barrel politics, which refers to spending directed to groups of voters, usually in the form of specific infrastructure projects that can be targeted geographically (Drazen and Eslava, 2005*a*; Keefer, 2005). While each of these strategies has been well-studied on their own, one question that

has not been adequately addressed in the literature is what determines the choice of politicians to engage in one strategy or another.

This chapter presents a framework linking politician social networks to the decision to engage in different types of political exchange. Politician networks refer to ties between politicians, which include formal ties such as party affiliations and political alliances to more informal ties such as family connections or friendships. Formal politician networks have often been used to explain differences in party structures across countries (Calvo and Murillo, 2004, 2009; Kitschelt and Wilkinson, 2007). However, I argue that politician networks, both informal and formal, can also influence the choice of electoral strategies within countries because these networks differentially affect the costs of monitoring, verifying, and enforcing each type of political exchange. Although the literature on social capital suggests that network ties positively influence democracy, network ties can also facilitate these types of illegal political strategies, especially in non-institutionalized democracies. The same network structures that encourage participation and cooperation in established democracies may make it easier for politicians in consolidating democracies to collude with one another and monitor voter behavior.

The literature on politician networks has focused almost exclusively on clientelist strategies (see, e.g., Fafchamps and Labonne, 2012; Hidalgo and Nichter, 2012; Calvo and Murillo, 2004, 2009). This chapter extends the literature to show that the way politician networks are organized have important implications for the choice of electoral strategies pursued by politicians. In particular, whether network ties are horizontal (between politicians at the same level) or vertical (between politicians at different levels serving overlapping constituencies) affect the incentives of politicians to pursue different types of political exchange as an electoral strategy. Using data I collected from surveys of mayors in Isabela Province, Philippines, I find that vertical political ties facilitate collusion for vote buying and clientelism, while horizontal ties promote group-targeted projects and pork barrel politics by encouraging information-sharing and cooperation among politicians.

This project is the first to study the determinants of individual vs. group targeting for political exchange in consolidating democracies, and serves as a starting point for understanding the strategies of politicians in the absence of programmatic politics. In addition, this study is important for policymakers and development organizations because of the growing consensus that politician incentives are a key factor in the success of reform efforts. Identifying the social network determinants of political strategies can contribute to the design of programs and policies to promote formal and professional politician networks and allow for the targeting of aid projects to those areas where economic reform efforts are more in line with the electoral incentives of politicians.

The first section discusses the literature on politician networks and electoral strategies. The second section provides a framework for understanding how politician social networks differentially affect the choice to engage in one strategy vs. another. The third section presents the research design and describes the survey data used for the study, while the fourth section presents and discusses the empirical results.

2.1 Political Exchange in Consolidating Democracies

Politics in consolidating democracies is complicated by the inability of politicians to make credible policy commitments to voters (Kitschelt and Wilkinson, 2007; Keefer and Vlaicu, 2008). As a result, elections in these countries are dominated by various forms of contingent political exchange. These include direct contingent exchange targeted to individuals, such as clientelism and vote buying, as well as indirect contingent exchange targeted to groups, such as pork barrel politics.

2.1.1 Clientelism and Vote Buying

Keefer and Vlaicu (2007) identify the lack of institutionalized reputational mechanisms, such as parties, as the reason why new democracies tend to use patron-client networks as bases of political support instead of investing in long-term institutional development. In their framework, politicians have two options for building credibility: 1) establishing a reputation through parties; and 2) relying on intermediaries in a clientelist system. Clientelism refers to long-standing relationships of contingent political exchange (Stokes, 2005; Kitschelt and Wilkinson, 2007). The costs and difficulty associated with establishing these institutional and reputation-based mechanisms for credibility motivate politicians in many new democracies to rely on clientelism (Keefer and Vlaicu, 2008). This creates a trade-off: new democracies choose the short run benefits associated with contingent political exchange to establish political credibility, but this occurs at the expense of long term development of institutional mechanisms, such as party systems (Keefer and Vlaicu, 2008).

As a result, many consolidating democracies tend to be characterized by clientelism. According to Kitschelt and Wilkinson, clientelism and programmatic politics are both ways of linking politicians and constituencies, but the difference is in how voters hold politicians accountable. The costs associated with programmatic politics are primarily internal organizational costs that require political entities that can speak with a single voice and allow voters to be confident that they will pursue policy objectives after the elections (Kitschelt and Wilkinson, 2007). This type of political competition encourages the provision of public goods instead of targeted benefits because elections can function as accountability mechanisms: political actors compete on platforms of policy goods, voters monitor their performance once they're in office, and can reward or punish them accordingly. By contrast, clientelistic political exchange requires dense, hierarchical networks for the identification of clients and the delivery of benefits and monitoring of voter behavior. Compared to the internal organizational problems inherent in programmatic parties, for

clientelist politics, the problem is monitoring and controlling the political brokers at each level in the process (Kitschelt and Wilkinson, 2007). Such mechanisms require elaborate networks to monitor actors and manage exchange relations (Stokes, 2005). Kitschelt and Wilkinson (2007) describe these networks as necessary because of the need to monitor political actors at each level in the process.

In fact, recent research has confirmed that clientelist politics requires different types of political network structures than programmatic politics: clientelist countries have large, heterogeneous, vertically integrated parties, while programmatic countries have smaller, homogenous, horizontally integrated parties (Calvo and Murillo, 2009). The ability to monitor is a fundamental aspect of successful politician networks (Kitschelt and Wilkinson, 2007; Larreguy, 2012). Larreguy (2012) provides evidence for the monitoring mechanism by comparing areas where electoral data overlaps with communal lands to show that the ability to monitor and incentivize political brokers at the ground level is associated with higher levels of electoral support.

At the same time, clientelism is not the only form of political exchange targeted to individuals. Even when considering only individually-targeted contingent political exchange, Nichter (2013) distinguishes some forms of vote buying as fundamentally different. While it is certainly common for patrons to engage in a form of vote buying by giving money or in-kind gifts to their clients on election day in addition to the longstanding relationships of political exchange, this new and increasingly prominent form of vote buying is a simple one-time transaction between the politician and voter (Nichter, 2013).

2.1.2 Pork Barrel Politics

Both clientelism and vote buying are targeted to specific individuals or small groups. By contrast, there are also forms of political exchange that are targeted to broader constituencies, such as allocating discretionary funding to supporters. In developed countries, this type of spending is often termed "pork barrel" spending and refers to the targeting of public funds or projects to the

politician's district as part of an electoral strategy. Although the specific types of policy goods varies across countries, they typically take the form of what are termed "club goods," or goods which are excludable and non-rival in the context of a specific group (Kitschelt and Wilkinson, 2007).

Pork barrel funding can be targeted either to supporters or to electorally competitive areas. Under Cox and McCubbins (1986)'s "core voter" model, politicians target their supporting constituencies. For example, Diaz-Cayeros, Magaloni and Weingast (2003) find that dominant parties in Mexico sustain their position using the strategic disbursement of central government funds to supporting municipalities. Burgess et al. (2013) find that, in a non-democratic context, more funding for roads goes to districts that share the ethnicity of the president. Similarly, Barkan and Chege (1989) show that during the 1980s, funding for road construction in Kenya was targeted to areas that supported President Daniel Arap Moi.

By contrast, Lindbeck and Weibull (1987) argue that parties target "swing" voters, which rewards undecided or unmobilized voters. In India, for example, Khemani (2003) finds that central government resources are strategically targeted to areas where the party can potentially win additional seats rather than to their core bases of support. Schady (2000) also finds that allocations from the Peruvian Social Fund *FONCODES* were targeted to provinces where the increased funds were expected to have the greatest electoral effect.

2.2 Politician Networks and Political Exchange

Many studies explain the different strategies that politicians use to win elections. In established democracies, these studies tend to center around party ideologies, policies, and campaigns. By contrast, in political environments where campaign promises and party platforms are not credible, politicians must rely on intermediaries to monitor and enforce political exchange (Keefer and Vlaicu, 2008). This gives rise to alternative electoral

strategies such as patronage, vote buying, and pork barrel politics.

In this context, I present a framework showing how politician networks can affect the choice of electoral strategies. Politician networks matter for building political credibility and ultimately affect the mechanisms of political control and survival. Politician ties include both formal and informal affiliations: party ties, professional or school ties, friendships, and family relationships.

This framework identifies the circumstances under which politicians choose to use individually-targeted (vote buying and patronage) vs. group-targeted (pork barrel funding) political exchange as an electoral strategy. The literature on clientelism already identifies politician networks as a way for politicians to monitor and enforce political exchange (Kitschelt and Wilkinson, 2007; Calvo and Murillo, 2009, 2004; Hidalgo and Nichter, 2012). In the absence of organized parties, cooperation among politicians is difficult to sustain without network ties. For example, poorly institutionalized parties are unable to discipline members. As a result, politicians in these systems tend not to rely on policy promises to voters, and face disincentives to undertake difficult economic or institutional reforms (Cruz and Keefer, 2013). Agreements between politicians are unenforceable because politicians have no formal recourse if one of them reneges. In this context, informal ties between politicians allow them to use reputational mechanisms to enforce agreements.

This chapter extends the literature to show that even within countries, the *types* of politician ties have important implications for electoral strategies. In particular, whether politician networks are horizontal or vertical. Horizontal ties refer to links between politicians at the same level of government, with different constituencies. Examples include ties among mayors or ties among congressmen. Vertical ties refer to links between politicians at different levels of government that share the same constituency. Examples include ties between the mayor of a municipality, the congressman of the district, and the governor in the state or province. I argue that the structure of these ties affects the incentives of politicians to pursue different types of

political exchange. Horizontal ties facilitate group-targeted political exchange, while vertical ties are associated with individually-targeted political exchange.

2.2.1 Individually-targeted Strategies

The link between vertical politician networks and clientelism is well-documented in the literature (see, e.g., Fafchamps and Labonne, 2012; Calvo and Murillo, 2004, 2009), but vertical networks also facilitate vote buying. Vertical networks are important because the logistical demands of individually-targeted political exchange require that political actors are able to monitor and enforce political interactions at each level of the process (Kitschelt and Wilkinson, 2007). National level politicians cultivate relationships with local level politicians and power brokers in their constituencies and give them funding in exchange for political support. The local level politicians and power brokers have their own longstanding networks of voters that they are expected to deliver.

For patronage, relationships between politicians and voters are longstanding and continuous. The identification of clients and the delivery of benefits requires sophisticated networks to monitor actors and manage exchange relations (Kitschelt and Wilkinson, 2007). As a result, Calvo and Murillo (2009) find that clientelist countries have large, heterogeneous, vertically integrated parties, while programmatic countries have smaller, homogenous, horizontally integrated parties.

In contrast to clientelism, vote buying requires no such longstanding relationship between politicians and voters. However, in practice, vote buying imposes several logistical demands that are particularly suited to vertical politician networks. First, vote buying requires the ability to identify and make direct contact with voters. Second, vote buying requires reasonable certainty that voters will keep their end of the bargain once they are in the voting booth.

All of the different forms of vote buying require consideration of these logistical issues, even if the implications may differ across forms. At one extreme, the form of vote buying most similar to clientelism is Nichter's

"turnout buying," which rewards unmobilized supporters for going to the polls, but does not require direct monitoring of vote choice. In these cases, monitoring is less of an issue, but politicians still need to be able to identify and target their supporters, which is facilitated using vertical political networks. Politicians at the top of the hierarchy rely on their ties to politicians at lower levels in order to access voters directly. In these cases, direct politician-citizen linkages are necessary, because the fact that this strategy targets supporters for mobilization limits the application of turnout buying to voters who are already part of politician networks. In this sense, turnout buying is much like an election-day incidence of the long-term relationships associated with clientelism.

Even the opposite example of vote buying can be facilitated using vertical networks. This type of vote buying requires no prior relationship between politicians and voters. Politicians offer a one-time payment in exchange for the voter's political support. This type of vote buying is fraught with uncertainty. In the context of a secret ballot, vote buying as a spot transaction is a puzzle–once voters accept the money or gifts, there is nothing preventing them from voting against the candidate once in the voting booth. Furthermore, because the transaction is illegal, there are no formal mechanisms for enforcement or recourse. Candidates can hardly complain to the authorities that voters have cheated them, for example. As a result, this type of vote buying is associated with a cost in terms of monitoring and verification. For example, consider vote buying using direct verification, such as handing out pre-filled ballots or using carbon paper or cell phone pictures as proof that the recipient of the money voted accordingly. Politicians still need to monitor their personnel on the ground implementing the vote buying and monitoring processes, to ensure that the funding given from the politicians at the top of the hierarchy is not stolen or mis-directed by the politicians at lower levels.

As a result, in a political context where there are overlapping constituencies, politicians can reduce the costs associated with

individual-targeted political exchange by pooling their efforts. Politicians at higher levels collude with lower level politicians and political brokers. The high level politicians provide funding and the lower level politicians provide the personnel and oversight for the implementation. A big part of the costs of vote buying involve logistics: identifying targets, sending personnel to conduct the transaction, as well as monitoring and enforcing the transaction. Once a system for monitoring or verification has been set up and the political broker has already been hired to hand out the envelope of money, the marginal cost of asking the voter to also vote for another politician on the same ballot is relatively small. The overlapping constituencies create incentives for such collusion among politicians organized through vertical networks.

Hypothesis 1. *Less vote buying and patronage are expected in municipalities where the mayor is well-connected to other mayors (horizontal connections).*

Hypothesis 2. *More vote buying and patronage are expected in municipalities where the mayor is well-connected to politicians at other levels, such as congressmen and governors (vertical connections).*

2.2.2 Group-targeted Strategies

Horizontal politician networks are commonly associated with party politics in more established democracies, where parties are meaningful and well-institutionalized (Calvo and Murillo, 2004, 2009). In these contexts, the primary organizational demands on politician networks involve the need to establish coherent and unified programs and platforms (Kitschelt and Wilkinson, 2007). Politicians organize in order to speak with a single voice and pursue specific policy objectives, and parties need mechanisms for enforcing discipline among members (Cox and McCubbins, 1993; Bowler and Katz, 1999).

However, in consolidating democracies with no tradition of programmatic political parties, horizontal politician networks operate differently. Without the presence of strong national parties with well-defined

policy objectives, cooperation among politicians is limited to specific issues or projects. The increased cooperation and information-sharing among horizontally organized politicians facilitates group-targeted mechanisms of political exchange, particularly pork barrel politics.

First, when pork barrel funds take the form of spending allocated to more than one municipality, mayors who are able to cooperate with each other can act collectively to demand pork barrel projects that benefit their municipalities. In these cases, the funding is typically controlled by politicians at the national level (such as governors or congressmen) or national government agencies. Very few local-level politicians are influential enough to lobby successfully for these types of funds on their own. However, groups of mayors acting collectively can successfully bid for large-scale projects affecting their areas. Examples of such projects include fisheries and shoreline support for coastal municipalities, irrigation systems for municipalities along a river, or construction and road projects that go through more than one locality.

Horizontal ties are important not only for the process of bidding for national or provincial-level projects, but also for ensuring that mayors can cooperate throughout the project implementation process. Mayors working together need to ensure that everyone participating will fulfill their obligations and no one will renege on their commitments. For example, many projects require that the localities undertake certain preparatory activities or even raise counterpart funding. Without strong horizontal ties that allow mayors to punish defectors, mayors will have incentives to free ride on the efforts of others.

Second, even when pork barrel projects are restricted to a single locality, horizontal ties can still matter. Mayors and local politicians learn about project opportunities from other mayors, and they can get ideas for projects by seeing what other mayors are doing. Friendly competition can encourage them to replicate the types of projects that they see succeeding in other places. Other mayors in the network are also an important source of information about funding sources, such as loans and grants available through the national or

provincial government, NGOs, and even international development agencies such as the World Bank. Information sharing and cooperation across horizontal ties are easier because these mayors are not in direct competition with each other for votes or for funds.[1]

In addition, even more nefarious forms of cooperation among mayors can facilitate pork barrel projects. Mayors can collude on bids for projects sourced directly to municipalities. Even when projects are sourced to firms, mayors can still engage in collusion when they have business interests in the relevant sector. For example, some mayors own construction or transportation companies. The World Bank reports that collusion among bidding firms and fraud and corruption at the implementation stage are the most common forms of corruption in the roads sector (World Bank, 2011). Successful collusion requires that mayors are able to cooperate with each other and credibly punish defectors. Without strong ties among the colluding mayors, organizing an effort to raise or otherwise fix prices would be prohibitively difficult to accomplish.

As a result, whether mayor ties lead to cooperation or collusion, the end result facilitates a group-targeted approach to political exchange, focused on lobbying for external funding for projects in the localities.

Hypothesis 3. *Less pork barrel politics is expected in municipalities where the mayor is well-connected to politicians at other levels, such as congressmen and governors (vertical connections)*

Hypothesis 4. *More pork barrel politics is expected in municipalities where the mayor is well-connected to other mayors (horizontal connections).*

Philippine Context

In the Philippines, the Local Government Code enacted in 1991 devolved responsibility for many client-facing services to the municipalities,

[1] Although national and international funding sources are technically limited, the amounts of project funds available is so large relative to the disbursements to any single municipality that one mayor receiving a project does not noticeably reduce the likelihood of another mayor receiving a project as well.

creating overlapping constituencies each with significant fiscal and regulatory functions. The move to decentralization in the existing context of clientelist politics further established the importance of linkages between politicians at different levels for understanding outcomes (Lande, 1996; Hasnain and Matsuda, 2011). Local politicians rely on national politicians for funding (Oribe, 2004; Teehankee, 2006), while national politicians depend on local politicians for mobilizing votes (Lande, 1964; Hasnain and Matsuda, 2011).

The relative weakness of political parties in the Philippines poses a stark contrast to the importance of family ties. The literature links the two: parties did not develop in the context of the elite families and their hold on power, and the resulting weak party institutions allowed the political dynasties to flourish unabated (Sidel, 1999; Querubin, 2010; Hutchcroft and Rocamora, 2003). Querubin (2010) finds that not only are political dynasties longstanding, but non-dynastic politicians who manage to win office are disproportionately more likely to establish their own dynasty.

The lack of structured party programs and platforms means that Philippine politics is dominated by direct and indirect forms of contingent political exchange. The contingent political exchange targeted to voters takes the form of clientelism and vote buying. In the Philippines, there is even a commonly used Tagalog phrase to refer to clientelism: *kasal*, *binyag*, *libing*, which literally means "weddings, baptisms, funerals." This well-known phrase refers to the fact that politicians are typically expected to support their constituents throughout their whole lives, including everything from serving as godfathers for baptisms and weddings, providing jobs and other assistance, and contributing towards funeral costs.

Previously, vote buying was a strategy that went hand-in-hand with clientelism, in that patrons would offer a small gift on election day, in addition to the long-term exchange relationships. However, vote buying has taken an increasingly different form in which politicians bypass power brokers and target voters directly with one-time payments or gifts at the time of the elections. This is in contrast to the long-term relationships that characterize

traditional patron-client exchange (Stokes, 2005).

Contingent political exchange targeted to groups takes the form of pork barrel politics. The Philippines has even widely adopted the use of the term "pork barrel," following the example of the United States. The most common sources of pork barrel funds are discretionary funds allotted to congressmen and senators called the "Priority Development Assistance Funds" or PDAFs. The PDAFs are intended to support small-scale local infrastructure or development projects and fill in the gaps left by larger national initiatives. Each member of the House of Representatives is elected in a single district and allotted a P70 million PDAF, while senators have a single national constituency and are allotted P200 million each. There is evidence that politician networks largely determine the allocation of government funds in the Philippines. For example, a study conducted by the Philippine Center for Investigative Journalism found that many legislators allocated more than half of their discretionary funds to municipalities where their child, parent, or sibling was the mayor (Coronel et al., 2004). In some cases, these allocations to municipalities controlled by relatives comprised the entire share of the legislator's PDAF.

2.3 Research Design

2.3.1 Dependent Variables

The patronage variable is the proportion of respondents in the barangay who reported receiving direct assistance from the mayor. Forms of assistance include money, both as a gift and as a loan, non-monetary gifts, jobs, or other non-monetary assistance (endorsement letters, assistance with paperwork, etc.). This variable ranges from no respondents in the barangay reporting having received assistance to over 85% of respondents reporting having received at least some help from the mayor or municipal government. The most common form of assistance is receiving money, either as a gift or a loan.

The vote buying variable is the most difficult to measure because of

social desirability bias. Vote buying is illegal, even if the laws that forbid it are not always consistently enforced in the Philippines. As a result, I designed the survey to mitigate these problems, using list experiments to address sensitivity issues and multiple measures of the same concept (including measures at different levels) to further reduce the sensitivity associated with asking these types of questions.

The main vote buying variable is the proportion of respondents in the barangay who reported being offered money for their vote. The average among the 30 municipalities is a vote buying rate of 20%, ranging from zero respondents reporting vote buying to 67% of respondents reporting vote buying. Again, although vote buying is a sensitive question, the structure of the question reduces the sensitivity (i.e. asking whether they were offered money for their vote vs. asking if they sold their vote). Results are robust to using the percentage of respondents reporting that there is vote buying in their barangay (a less sensitive formulation of the question) or the percentage of respondents reporting that they accepted money for their vote (a more sensitive formulation of the question).

In addition, I used an unmatched count technique to estimate the rate of under-reporting of vote buying at the barangay level. The unmatched count method presents respondents with a set of statements that could have potentially happened to them in the most recent 2007 municipal elections and respondents are asked only to report the number of items that happened to them, and not which items happened to them. Treatment and control groups are assigned randomly, and the control group receive a set of control statements that are largely neutral and infrequent, while the treatment group receives the same set of control statements, plus the additional statement: "Someone offered me money or gifts for my vote." Because the groups are randomly assigned, I can estimate the prevalence of vote buying in the barangay by merely comparing the means of the treatment and control groups, on the rationale that any additional increase in the average number of items reported can be attributed to vote buying. The results from the unmatched

count technique indicate no significant under-reporting of vote buying at the barangay level.

The pork barrel variable is the percentage of barangays with road construction projects, taken from a survey of 30 municipal engineers in the province. These also include the construction of pathways and bridges, and maintenance and repaving activities. This variable ranges from no road construction projects in any barangay to municipalities in which every barangay has at least one project. The main results are robust to using barangay-level counts of projects using data from the accounting office, but these tend to be less accurate than the figures from the municipal engineering office.[2]

2.3.2 Independent Variables

The main independent variables for this analysis are vertical and horizontal political ties of mayors. The vertical ties variable is measured using a count of self-reported affiliations with other politicians holding office at different levels of government but sharing the same constituency. This includes both politicians at lower levels, such as the barangay captain (village head), and politicians at higher levels, such as the congressman of the district and the governor of the province. Counting affiliations as reported by the respondent mayors is important because party affiliations are an insufficient proxy for ties between politicians in the Philippines. Politicians at the local level switch party allegiances frequently and often fail to support their party's candidate for other offices. For example, when I asked one mayor about the discrepancy between a poster of his party's congressional candidate outside his compound and his lapel pin for another candidate, he explained that "my posters go to [the party candidate], but my money goes to my candidate."[3].

The horizontal ties variable assesses whether the mayor in the municipality is well-connected to other mayors. This analysis uses a simple

[2]For example, discrepancies could arise when money is allocated for a project, but no construction activity took place.

[3]Author interviews, April 2010

in-degree measure. The survey interviewed mayors of all the municipalities in the household surveys and asked each one to name the other mayors in the province that they thought deserved recognition. The measure of horizontal ties counts the number of ties that the respondent mayor was named by other mayors participating in the survey. Figure 2.1 illustrates the network of mayors in the province.

Although this is an imperfect measure of ties, pilot surveys held in a different province indicate that this question was the best indicator of a mayor's allies and friends, yielding almost identical results from asking mayors directly who their friends and allies are. The direct question was not workable because many mayors would either decline to answer or become suspicious about the survey in a way that affects their willingness to participate in the rest of the study. Results were also compared to using expert surveys of key informants to assess the linkages between mayors. As in Saiegh (2009)'s study of Argentina, the comparisons suggest that politician surveys in the Philippines can also be reliable data sources.

In addition to the pilot surveys, follow up interviews were conducted with five mayors to ask them about their friends and allies, and their responses confirmed that they tended to name their friends when asked the question about which mayors deserved recognition.

Furthermore, with the exception of one mayor, there is no correlation between being named by other mayors as deserving recognition and actually having won an award (results in the appendix). There was only one mayor in the sample who was an actual award-winner and was also popular among the other mayors. Results are robust to excluding this mayor from the sample (tables available in the appendix).

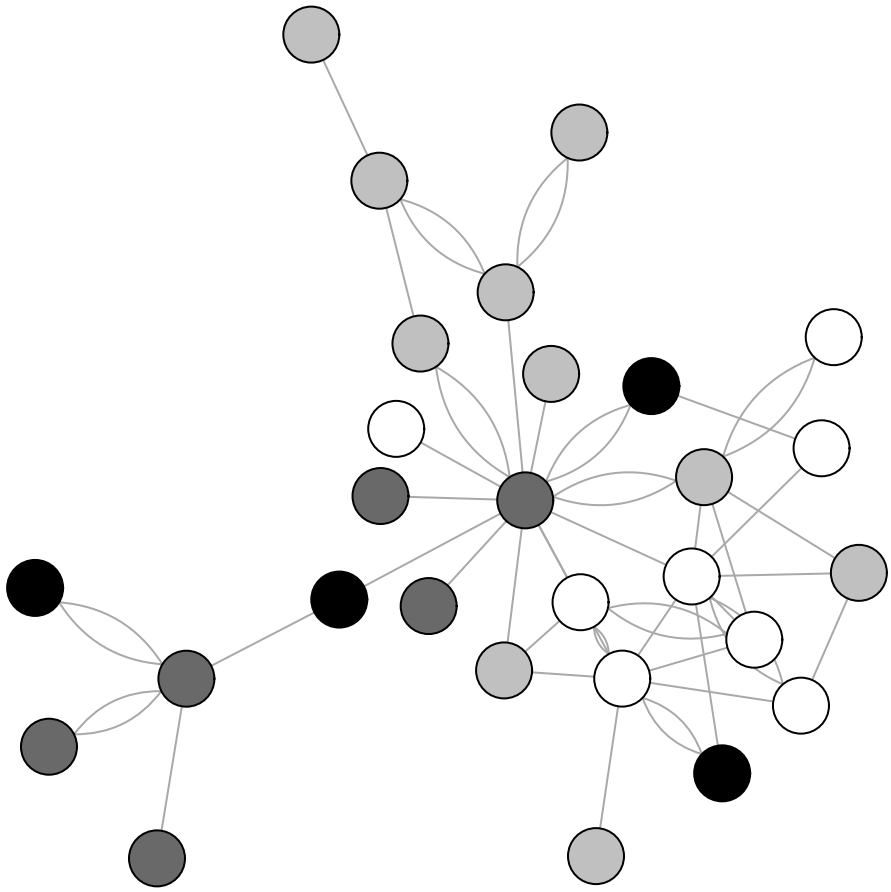

Figure 2.1: Mayor Network in Isabela (1st District–White; 2nd–Light Gray; 3rd–Dark Gray; 4th–Black)

Other potential control variables identified in the literature include the income levels and electoral competitiveness of municipalities. The income indicator used is a barangay-level average of whether respondent households experienced hunger in the last three months and were unable to purchase food to eat.[4] Income levels are important because poorer voters may be more receptive to direct forms of contingent political exchange. Poorer voters may be more prone to clientelist offers because they prefer to receive ongoing or pre-electoral benefits instead of waiting for less certain policy benefits after

[4]Alternative measures of income used in the robustness checks include rates of child malnutrition in the barangay, income class category of the municipality, or small area poverty estimates calculated by the World Bank.

the elections Desposato (2007); Brusco, Nazareno and Stokes (2004). For example, when describing the targets for vote buying, one mayor mentioned that the municipality where the university was located was one area where neither side would buy votes, because the people there are wealthier, more educated and "can't be bought."[5] As a result, these areas may be more amenable to direct forms of contingent political exchange.

Electoral competitiveness can be measured by examining electoral results by municipality. Electoral competitiveness is an important factor for politicians, but generally tends to affect the intensity of politician efforts and not necessarily the choice of political strategy. For example, it is reasonable to expect that competitive elections will lead to higher price per vote or more pork barrel allocations, but might be less of a factor in the choice to engage in one strategy or the other.

Last, because this chapter focuses on determinants of the strategies of mayors, I control for several mayor characteristics that can potentially condition the relationship between mayor social ties and the choice of electoral strategy. One important characteristic is the mayor's education level. Higher levels of education may be associated with better performance in general. More educated mayors may be better able to navigate the complexities of applying for loans, grants, and projects, making them more inclined towards group-targeted political exchange.

In additional specifications, I also control for the mayor's number of relatives in politics. Mayor relatives in politics is expected to be positively related to the individual-targeted forms of political exchange, although primarily with patronage. Politicians that are members of political dynasties have long-standing ties to the community that function as reputational mechanisms for making credible commitments. In this sense, the family name has a similar "brand name" effect as a party, albeit with the goal of expanding influence and rewarding supporters rather than achieving particular policy goals.

[5]Author interviews, Laguna, Philippines (November 2009)

2.3.3 Model Specification

I estimated two sets of models. The first are regressions for each political strategy using OLS with standard errors clustered by municipality.

$$STRATEGY = \alpha + \beta_1(NETWORKS) + \beta_2(Controls) + \epsilon \tag{2.1}$$

Where $STRATEGY$ is the set of individual and group-targeted political strategies: vote buying, patronage, and pork barrel politics, $NETWORKS$ refers to the vector of networks variables indicating horizontal and vertical mayor networks, and $CONTROLS$ is the vector of control variables.

In order to generate more applicable predicted values, I also used a generalized linear model (glm) with a logit link and binomial distribution family, following the recommendations of Papke and Wooldridge (1996). The data on political strategies are village proportions, aggregated from household surveys, which means that they range only from 0 to 1. Consequently, predicted values are more accurate and appropriate if they are also bounded by this range (McDowell and Cox, 2013).

In addition, following (Zellner, 1962), I use seemingly unrelated regressions to allow for the possibility that the errors are correlated across the different equations.

Last, I re-ran all of models at the municipal level. These regressions use the same variables, but measured at the municipal level, using municipal averages.

2.4 Results and Discussion

One implication of this framework is that politicians with no connections–vertical or horizontal–will be expected to get less of everything. While this is indeed the case, it also raises the issue that social ties may indicate performance in general. One difficulty with using social networks as an explanatory variable is that politicians freely choose to make connections

Table 2.1: Summary Statistics

	Mean	Std. Dev.	Min	Max
Vote Buying	.384	.242	0	.944
Patronage	.298	.200	0	.85
Pork Barrel	.785	.331	0	1
Horizontal Mayor Ties	.767	2.045	0	11
Vertical Ties	2.183	.948	0	4
Margin of Victory	.303	.260	.016	1
Mayor education	5.967	.843	3	7
Poverty estimate	36.822	12.966	13.77	72.58
Observations	60			

and join networks, and it is reasonable to expect that politicians may want to be affiliated with successful politicians. At the same time, if the effects of social ties on types of political exchange were merely a spurious result, then we should expect that politicians with many connections will simply have more resources with which to pursue all types of political exchange. However, this is not the case. Instead, I show that the *types* of politician social ties matter: politicians with vertical connections pursue individually-targeted political exchange while the politicians with horizontal connections pursue group-targeted political exchange.

Table 2.2 shows that, following hypothesis 1a, horizontal mayor ties are negatively related to vote buying. The results from the GLM indicate that each additional mayor tie decreases the odds of vote buying by a factor of .84. In terms of probabilities, going from no horizontal ties to eleven horizontal ties decreases the predicted mean of vote buying from 41% to 9.5% (the marginal effects graph is available in figure **??** in the appendix). However, there is no significant relationship with vertical ties (hypothesis 1b). The only consistently significant result for the control variables is for mayor education levels. Highly educated mayors engage in significantly less vote buying than mayors with lower levels of education.

Similarly, table 2.3 shows that horizontal mayor ties are negatively related to the use of patronage as an electoral strategy. The results from the

Table 2.2: Mayor Social Networks and Vote Buying

	(1)	(2)	(3)	(4)
Horizontal Mayor Ties	-0.0279**	-0.0321**	-0.144**	-0.173*
	(0.0123)	(0.0156)	(0.0694)	(0.0942)
Vertical Ties	0.0248	0.0538	0.108	0.235
	(0.0397)	(0.0511)	(0.165)	(0.214)
Margin of Victory		-0.0844		-0.370
		(0.109)		(0.458)
Mayor education		-0.103**		-0.436**
		(0.0455)		(0.194)
Poverty estimate		0.000446		0.00167
		(0.00278)		(0.0114)
Constant	0.351***	0.911***	-0.610*	1.766
	(0.0797)	(0.308)	(0.335)	(1.308)
Observations	60	58	60	58
R^2	0.050	0.182		

Models 1-2: OLS. Models 3-4: GLM with logit link.
Standard errors (in parentheses) clustered by municipality. * p < .1 ** p < .05 *** p < .01

GLM indicate that each additional horizontal mayor tie decreases the patronage by a factor of .88. In terms of probabilities, this corresponds to a decrease from 31% to 10% (the marginal effects graph is available in figure **??** in the appendix). The results also support hypothesis 1b in that vertical politician ties are significantly and positively related to patronage. Each additional vertical tie increases patronage by a factor of 1.4.

In terms of the control variables, the margin of victory is positively related to patronage. This suggests that mayors engage in significantly more patronage in areas where they win by larger margins. This suggests that mayors target patronage to areas where they enjoy the most support, in line with the literature on Cox and McCubbins (1986)'s "core voter" model (see also, e.g., Diaz-Cayeros, Magaloni and Weingast, 2003; Barkan and Chege, 1989). Also, much like the results for vote buying (table 2.2), mayor education is negatively related to patronage. Highly educated mayors engage in significantly less patronage than mayors with lower levels of education.

By contrast, table 2.4 shows that horizontal mayor ties are positively

Table 2.3: Mayor Social Networks and Patronage

	(1)	(2)	(3)	(4)
Horizontal Mayor Ties	-0.0244***	-0.0225**	-0.134***	-0.124***
	(0.00730)	(0.00844)	(0.0466)	(0.0460)
Vertical Ties	0.0622*	0.0669*	0.301**	0.332*
	(0.0304)	(0.0360)	(0.149)	(0.182)
Margin of Victory		0.164**		0.761**
		(0.0792)		(0.334)
Mayor education		-0.0686**		-0.328**
		(0.0333)		(0.143)
Poverty estimate		0.00307		0.0141
		(0.00208)		(0.00957)
Constant	0.180**	0.416	-1.435***	-0.333
	(0.0675)	(0.273)	(0.355)	(1.221)
Observations	60	58	60	58
R^2	0.100	0.286		

Models 1-2: OLS. Models 3-4: GLM with logit link.
Standard errors (in parentheses) clustered by municipality. * p < .1 ** p < .05 *** p < .01

associated with the use of pork barrel politics as an electoral strategy, following hypothesis 2b. Each additional horizontal mayor tie is increases pork barrel projects by a factor of 1.06. In terms of probabilities, this corresponds to an increase from around 78% to 100% (the marginal effects graph is available in figure **??** in the appendix). However, there is no significant relationship with vertical ties, as proposed in hypothesis 2a.

Table 2.5 reports the results for the seemingly unrelated regressions for vote buying, patronage, and pork barrel politics. Horizontal mayor social networks are negatively related to individual-targeted strategies of vote buying and patronage, and positively related to the group-targeted strategy of pork barrel politics. By contrast, vertical mayor ties are positively related to one of the individual-targeted strategies, patronage, and while the results for the other two are not significant, they are suggestive of a generally positive relationship with individual-targeted strategies and a negative relationship with group-targeted strategies. In fact, the vertical mayor ties variable is negative and significant in other specifications using alternative measures of

Table 2.4: Mayor Social Networks and Pork Barrel Politics

	(1)	(2)	(3)	(4)
Horizontal Mayor Ties	0.00979***	0.0115***	0.0519***	0.0629***
	(0.00308)	(0.00360)	(0.0170)	(0.0196)
Vertical Ties	0.00637	0.00272	0.0409	0.0181
	(0.0153)	(0.0199)	(0.0936)	(0.117)
Margin of Victory		-0.0214		-0.141
		(0.0455)		(0.272)
Mayor education		0.00206		0.0128
		(0.0139)		(0.0821)
Poverty estimate		0.00102		0.00629
		(0.00105)		(0.00599)
Constant	0.183***	0.148	-1.491***	-1.708***
	(0.0321)	(0.0873)	(0.201)	(0.517)
Observations	60	58	60	58
R^2	0.044	0.054		

Models 1-2: OLS. Models 3-4: GLM with logit link.
Standard errors (in parentheses) clustered by municipality. * p < .1 ** p < .05 *** p < .01

pork barrel politics.

In terms of the control variables, mayor education is negatively related to both of the retail strategies, with no relationship to pork barrel politics. Margin of victory is negatively related to pork barrel politics, and not related to vote buying and patronage. In some specifications, margin of victory is negatively related to vote buying as well, but the result is not consistent.

The results suggest that the type of politician networks matters. In general, horizontal mayor social ties are associated with electoral strategies targeting benefits to individuals, while vertical mayor ties are associated with group-targeted strategies. Results are similar when re-running these specifications at the municipality level (see table 2.9 in the appendix). Results are also robust to alternative measures of the independent and dependent variables.

These findings are supported by information from interviews I conducted with mayors and political operatives. They explained that synchronized elections allow mayors with strong vertical ties to coordinate

Table 2.5: Mayor Social Networks and Strategies for Political Exchange

	Seemingly Unrelated Regressions		
	Vote Buying	Patronage	Pork Barrel
Horizontal Ties	-0.0286***	-0.0320***	0.0423**
	(0.0111)	(0.0117)	(0.0188)
Vertical Ties	0.0371	0.0707***	-0.0651
	(0.0238)	(0.0252)	(0.0404)
Margin of Victory	-0.0238	0.173**	-0.630***
	(0.0799)	(0.0846)	(0.135)
Mayor education	-0.0826***	-0.0774***	0.00279
	(0.0253)	(0.0267)	(0.0428)
Income Class	-0.00292	-0.0257	0.00906
	(0.0162)	(0.0172)	(0.0275)
Constant	0.633***	0.657***	1.041***
	(0.153)	(0.162)	(0.260)
R^2	0.216	0.289	0.332
Observations	60		

OLS with robust standard errors in parentheses; * p < .1 ** p < .05 *** p < .01

vote buying efforts by collecting money from congressional and gubernatorial candidates and purchasing a slate of votes for all candidates. At times, these efforts also include politicians running for municipal and provincial board.[6]

Politician interviews also confirm the informational value of horizontal ties. According to the mayors themselves, they get ideas for potential projects by seeing what types of projects are working well in other municipalities. They also cite that golf games and other informal interactions with fellow mayors are an excellent source of information about projects and development initiatives. One mayor mentioned that he was meeting with a fellow mayor in the province because he wanted to submit a funding proposal to the World Bank and the other mayor had previously received a World Bank project and was offering to give him some advice on his proposal.[7]

[6] Author interviews, April and May 2010
[7] Author interviews, April and May 2010

2.5 Conclusion

In consolidating democracies without a tradition of programmatic politics, informal networks of politicians are important for understanding broader electoral strategies. When parties are non-existent or poorly institutionalized, politicians rely on family, ceremonial, or friendship ties in order to facilitate cooperation. Where these ties are vertical, among politicians in overlapping constituencies, the linkages are associated with electoral strategies using individual targeting for political exchange, such as patronage and vote buying. By contrast, where these ties are horizontal, among politicians at the same level in different constituencies, the linkages are associated with group targeting for political exchange through pork barrel and other projects.

In terms of policy implications, institutions fostering horizontal ties among mayors may contribute towards more growth-friendly electoral strategies. For example, in the Philippines, the League of Mayors is a loosely organized grouping of mayors and local chief executives, providing an avenue for advocating for local issues. Empowering groups such as the League of Mayors may have the unintended benefit of encouraging horizontal ties and greater cooperation among mayors in pursuing project and policy objectives. In addition, the Department of the Interior and Local Governance has typically sponsored orientation workshops for newly elected mayors and local chief executives. One possibility is that in addition to transmitting information about rules and regulations, these types of workshops may also have the unintended positive benefit of laying a foundation for future networks of cooperation among local politicians.

This research highlights the importance of a more nuanced approach to understanding political networks. Not all politician ties are created equal: vertical and horizontal politician networks have very different implications for electoral strategies, and ultimately, economic development outcomes.

2.6 Appendix

All marginal effects graphs represent predicted means of the dependent variables for each level of horizontal ties, holding all other variables at the means. Shaded areas indicate 95% confidence intervals.

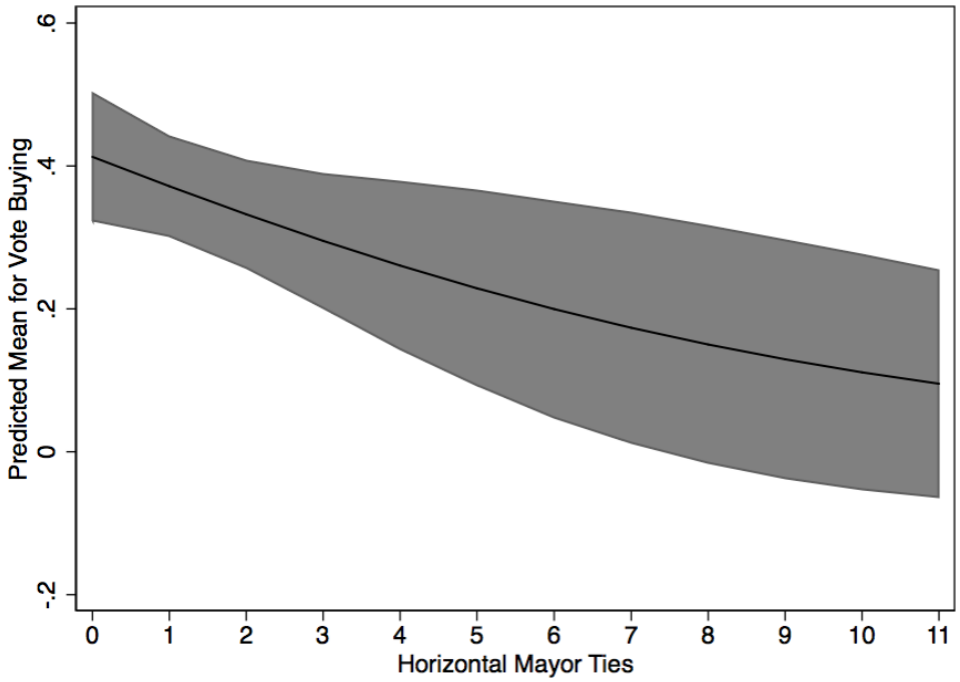

Figure 2.2: Horizontal Ties and Vote Buying

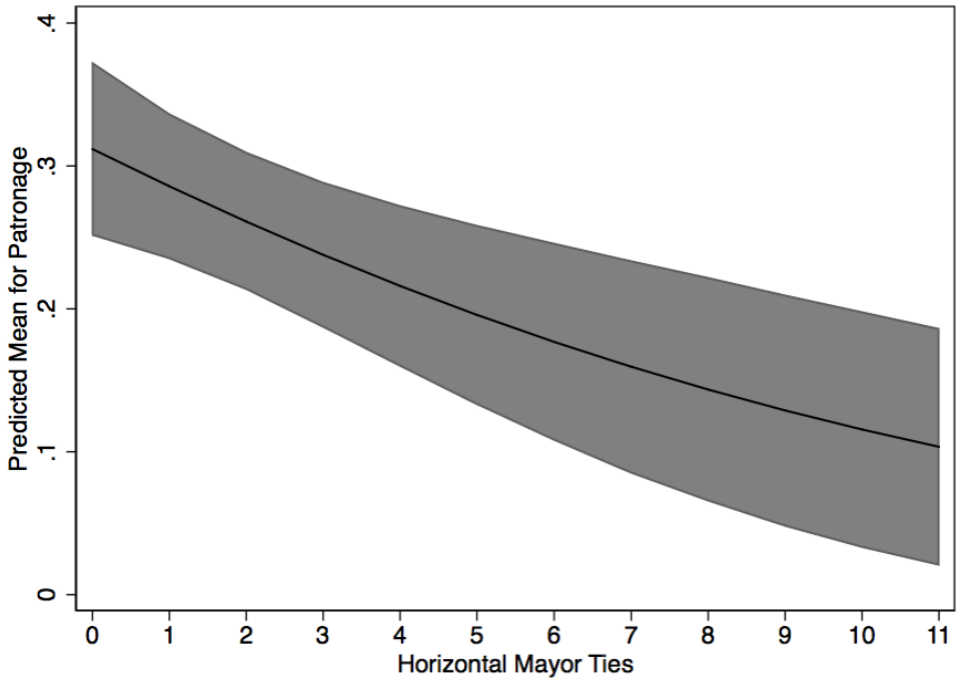

Figure 2.3: Horizontal Ties and Patronage

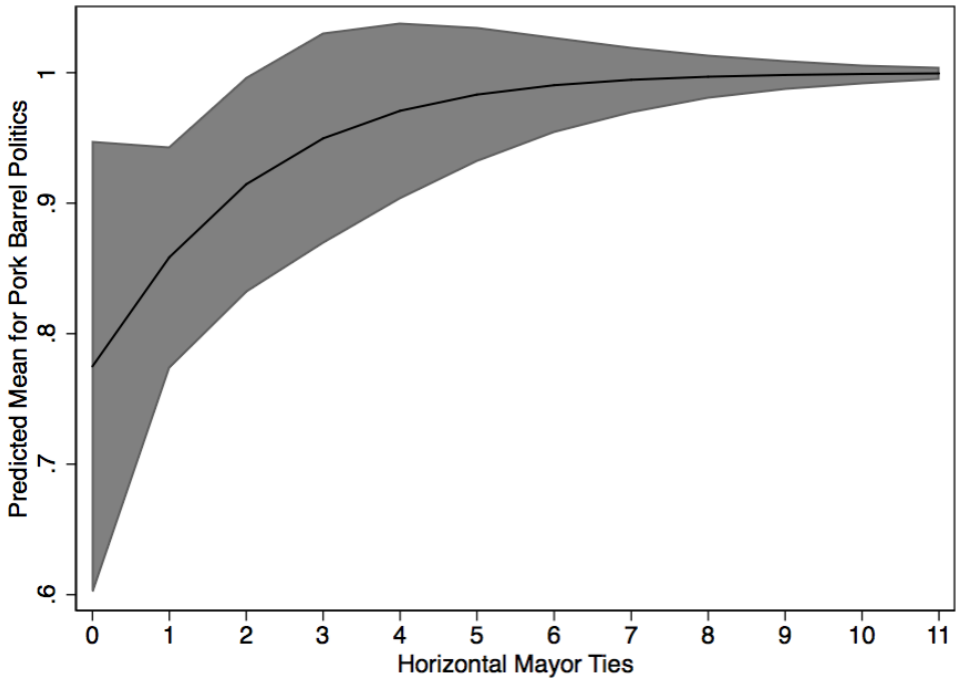

Figure 2.4: Horizontal Ties and Pork Barrel Politics

Table 2.6: Mayor Social Networks and Vote Buying

	(1)	(2)	(3)	(4)
Horizontal Mayor Ties	-0.0221**	-0.0265***	-0.397*	-0.621***
	(0.00879)	(0.00896)	(0.222)	(0.237)
Vertical Mayor Ties	0.00294	0.0233	0.0339	0.185
	(0.0368)	(0.0421)	(0.230)	(0.264)
Avg. margin of victory		-0.0272		-0.290
		(0.0975)		(0.591)
Mayor education		-0.0792*		-0.506***
		(0.0384)		(0.182)
Income Class		-0.00271		-0.0983
		(0.0209)		(0.115)
Constant	0.195***	0.657**	-1.367***	1.853
	(0.0632)	(0.267)	(0.394)	(1.350)
Observations	30	30	30	30
R^2	0.069	0.220		

Models 1-2: OLS. Models 3-4: GLM with logit link.

Standard errors in parentheses. * p < .1 ** p < .05 *** p < .01

Table 2.7: Mayor Social Networks and Patronage

	(1)	(2)	(3)	(4)
Horizontal Mayor Ties	-0.0277***	-0.0342***	-0.148***	-0.190***
	(0.00886)	(0.00774)	(0.0502)	(0.0449)
Vertical Mayor Ties	0.0810**	0.0861**	0.390**	0.447**
	(0.0380)	(0.0388)	(0.181)	(0.184)
Avg. margin of victory		0.131		0.568*
		(0.0796)		(0.320)
Mayor education		-0.0801**		-0.389***
		(0.0349)		(0.144)
Income Class		-0.0231		-0.119
		(0.0266)		(0.112)
Constant	0.197***	0.704***	-1.357***	1.076
	(0.0501)	(0.208)	(0.270)	(0.840)
Observations	30	30	30	30
R^2	0.185	0.416		

Models 1-2: OLS. Models 3-4: GLM with logit link.

Standard errors in parentheses. * p < .1 ** p < .05 *** p < .01

Table 2.8: Mayor Social Networks and Pork Barrel Politics

	(1)	(2)	(3)	(4)
Horizontal Mayor Ties	0.0502***	0.0459***	0.817*	0.788*
	(0.0179)	(0.0121)	(0.484)	(0.430)
Vertical Mayor Ties	-0.139**	-0.0896	-0.895**	-0.659
	(0.0615)	(0.0611)	(0.426)	(0.429)
Avg. margin of victory		-0.583***		-2.824***
		(0.184)		(1.074)
Mayor education		0.00755		0.0541
		(0.0512)		(0.424)
Income Class		0.00606		0.146
		(0.0365)		(0.237)
Constant	0.955***	0.997***	2.402***	2.234
	(0.0771)	(0.305)	(0.751)	(2.352)
Observations	30	30	30	30
R^2	0.152	0.347		

Models 1-2: OLS. Models 3-4: GLM with logit link.
Standard errors in parentheses. * p < .1 ** p < .05 *** p < .01

Table 2.9: Mayor Social Networks and Strategies for Political Exchange

	Seemingly Unrelated Regressions		
	Vote Buying	Patronage	Pork Barrel
Horizontal Mayor Ties	-0.0265*	-0.0342***	0.0459*
	(0.0149)	(0.0131)	(0.0266)
Vertical Mayor Ties	0.0233	0.0861***	-0.0896
	(0.0351)	(0.0309)	(0.0628)
Avg. margin of victory	-0.0272	0.131	-0.583***
	(0.109)	(0.0960)	(0.195)
Mayor education	-0.0792**	-0.0801***	0.00755
	(0.0336)	(0.0296)	(0.0601)
Income Class	-0.00271	-0.0231	0.00606
	(0.0216)	(0.0190)	(0.0386)
Constant	0.657***	0.704***	0.997***
	(0.202)	(0.178)	(0.362)
Observations	30		
R^2	0.220	0.416	0.347

OLS with robust standard errors; standard errors in parentheses; * p < .1 ** p < .05 *** p < .01

Chapter 3

Social Networks and the Targeting of Vote Buying

Illegal electoral strategies are unfortunately prevalent in many consolidating democracies. Among these strategies is vote buying, which is a form of contingent political exchange targeted to voters during the pre-election period. In contrast to clientelism, which refers to long-standing relationships of contingent political exchange (Stokes, 2005; Kitschelt and Wilkinson, 2007), how voters are targeted for vote buying is not well understood. This paper shows that the costs of acquiring information and monitoring voters are key considerations for a politician's choice of individuals to target, and that social networks are important indicators of such costs. Even when politicians are not directly linked to voters in a clientelist system, politicians can still use voter social networks to identify and obtain access to voters and monitor them once they have been targeted.

There is a longstanding debate about how politicians target areas for re-election efforts. Theories used to explain politics in developed countries have often been adapted to explain clientelist targeting in the developing world. Within this broader literature, there have also been studies focusing on social networks as a means of targeting, but these have been limited to politician networks and direct voter ties to politicians.[1] Furthermore, theories

[1] See, e.g., Fafchamps and Labonne (2012), Calvo and Murillo (2004).

specify the importance of monitoring for vote buying when the ballot is secret, but no studies have shown how politicians do this. This study extends the current literature in two ways. First, I show that there are important features of social networks at the individual level, beyond connections to the politicians or the political machine. Second, I demonstrate that politicians use social networks for indirect monitoring, by exploiting differences in vote secrecy to show that the relationship between social networks and targeting changes depending on the need for monitoring.

To explore these issues, I designed and implemented a survey of 864 households and 50 politicians in Isabela Province, Philippines during the 2010 elections.[2] The survey was specifically designed to reduce social desirability bias associated with sensitive political questions and differentiate between socially unconnected and socially connected individuals. Using these data, findings show that individuals with more friends and family ties are disproportionately targeted for vote buying.

In addition, in order to demonstrate that social networks affect the targeting of illegal electoral strategies by providing information and facilitating monitoring, I compare cases that vary in terms of the need for information and monitoring. Although both social networks and monitoring have been highlighted as important for understanding contingent political exchange, the literature has not been able to show how they matter. To do this, I use a new approach separating the sample by vote secrecy,[3] based on the rationale that information and monitoring are only of concern in cases where the vote is perceived to be secret. This approach demonstrates that politicians use social ties for targeting only when monitoring is necessary.

The first section of this paper discusses the targeting of electoral strategies. The second section presents a framework for understanding the incentives of politicians to target voters for vote buying. Social networks can affect targeting strategies because of their effects on the costs of monitoring

[2]The survey was funded by a National Science Foundation Grant.

[3]Violations of vote secrecy used in this study refer to illegally acquired lists of voters and vote choice that politicians publicize to voters.

and enforcement. The third section discusses the research design and describes the survey data used for the study. The fourth section presents and discusses the empirical results.

3.1 Vote Buying

Vote buying is a form of political exchange in which politicians give gifts or money to individuals in return for electoral support (Schaffer and Schedler, 2007; Stokes, 2005). Vote buying is prevalent in new democracies, because of the tendency to choose the short run benefits of clientelist mechanisms for credibility, at the expense of long term development of institutional mechanisms for credibility, such as political parties (Keefer and Vlaicu, 2008). As a result, electoral systems with weakly institutionalized parties encourage candidates to cultivate a personal vote rather than working towards party goals, giving rise to strategies based on contingent political exchange (Hicken, 2007). Vote buying differs from other forms of contingent political exchange in two important ways. First, in contrast to pork barrel politics, vote buying involves private benefits that accrue directly to the individual targeted (Lehoucq, 2007). Second, vote buying involves a one-time transaction between the politician and voter (Nichter, 2013). This is in contrast to the longstanding relationships that characterize patron-client exchange.

As a result, the successful exercise of vote buying requires that politicians are able to identify voters for the delivery of benefits and ensure that the targets vote accordingly. Implicit in any form of political exchange is the ability to identify and access voters for the delivery of benefits and monitor that the voters are fulfilling their end of the bargain. The ability to identify and access voters is an extension of the debate in the literature on the targeting of "core" vs. "swing" voters. Under Cox and McCubbins (1986)'s "core voter" model, politicians target their supporting constituencies.[4] By contrast,

[4]For example, Diaz-Cayeros, Magaloni and Weingast (2003) find that dominant parties in Mexico sustain their position using the strategic disbursement of central government funds to supporting municipalities. Burgess et al. (2013) find that, in a non-democratic context, more

Lindbeck and Weibull (1987) argue that parties target "swing" voters, which rewards undecided or unmobilized voters.[5] Dixit and Londregan (1996) find that the presence of informational advantages affects the strategies parties use when targeting groups for redistribution. In other words, parties target moderates for redistribution only when there are no informational advantages within their core constituency; otherwise, parties target their core constituency.

Monitoring is an important component of vote buying in the context of a secret ballot. Once voters accept the money or gifts, there is nothing preventing them from voting against the candidate once in the voting booth (Nichter, 2008; Brusco, Nazareno and Stokes, 2004). Furthermore, because the transaction is illegal, there are no formal mechanisms for enforcement or recourse. Candidates can hardly complain to the authorities that they have been cheated, for example. As a result, vote buying is associated with substantial monitoring and verification costs. Monitoring costs can include monitoring turnout, monitoring vote choice directly, or doing both (Nichter, 2008). Szwarcberg (2011) finds that politicians strategically choose which voters to monitor, based on both candidate and voter characteristics. For example, in many countries, the strong norms governing the acceptance of gifts work in favor of vote buying by creating a sense of obligation for voters to cast their ballot accordingly, reducing the need for monitoring (Lehoucq, 2007). In a study of Paraguay, Finan and Schechter (2012) find that individuals demonstrating reciprocity are disproportionately targeted for vote buying.

Social network analysis is useful for understanding the targeting of vote buying because of the importance of networks for providing information. Social networks transmit political information and political cues, and different configurations of social networks are associated with changes in the costs for

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funding for roads goes to districts that share the ethnicity of the president. Similarly, Barkan and Chege (1989) show that during the 1980s, funding for road construction in Kenya was targeted to areas that supported President Daniel Arap Moi.

[5] In India, for example, Khemani (2003) finds that central government resources are strategically targeted to areas where the party can potentially win additional seats rather than to their core bases of support. Schady (2000) also finds that allocations from the Peruvian Social Fund FONCODES were targeted to provinces where the increased funds were expected to have the greatest electoral effect.

monitoring and enforcement of political exchange.

In addition, social network analysis is particularly relevant for understanding political exchange because political networks are necessary for the identification of clients and the delivery of benefits. Calvo and Murillo (2009) demonstrate that clientelist politics requires different types of political network structures than programmatic politics: clientelist countries have large, heterogeneous, vertically integrated parties, while programmatic countries have smaller, homogenous, horizontally integrated parties. Networks allow politicians to have direct means of access to voters while retaining the ability to monitor and control political brokers at each level (Kitschelt and Wilkinson, 2007).

At the same time, the literature on social networks and electoral strategies has tended to focus on either social ties to politicians and political actors (see, e.g., Fafchamps and Labonne, 2012) or the role of social networks for the functioning of the political machine (see, e.g., Hidalgo and Nichter, 2012; Calvo and Murillo, 2004, 2009). Although some studies have described the importance of voter social networks (see, e.g., Lehoucq, 2007), little is known about the effect of these voter networks. In this context, this study starts with the premise that *the individual's social network*–and not just the connections to politicians or a political machine–is important to determine vulnerability to vote buying, and uses new techniques for identifying the mechanisms behind the relationship.

3.1.1 Voter Social Networks and the Targeting of Vote Buying

Vote buying is most commonly understood as a form of political exchange in which politicians give gifts or money to individuals in exchange for electoral support (Schaffer and Schedler, 2007). Vote buying has been described in the literature as comprising everything from advance payments in the context of a clientelistic relationship, wages for election monitoring and other services, and gifts with no explicit agreement regarding vote obligations (Schaffer and Schedler, 2007). The simplest case for politicians are efforts to

target individuals who are already part of their clientelist networks, using Nichter (2008)'s "turnout buying." Turnout buying rewards unmobilized supporters for going to the polls, but does not require monitoring of vote choice. This strategy targets voters who are already part of politician networks. Politicians need only to identify these supporters and there is no need to monitor their vote choice (Nichter, 2008), making turnout buying compatible with clientelism.

Following Hicken (2011) and Nichter (2013), I differentiate between the various forms of clientelism and gift-giving from vote buying. In this framework, vote buying is defined as a one-time contract between the politician and the voter to provide payment in exchange for the vote. Unlike clientelism, vote buying can work even with voters that are not already part of the politician's network. In these cases, individual level social network attributes become important for targeting. In particular, the degree to which individuals are well-connected within their social networks matters.

This paper presents a framework for understanding vote buying that hinges on the costs associated with obtaining access to voters and monitoring and enforcing political exchange. Voter social networks are important indicators of these costs and determine who gets targeted for these strategies. This framework distinguishes between different types of networks with implications for the targeting of political strategies. The most commonly studied networks are politician networks. These include connections between politicians and links from politicians to their core bases of electoral support. The role of these types of networks for the targeting of vote buying and patronage is well-established in the literature (see, e.g., Fafchamps and Labonne, 2012; Hidalgo and Nichter, 2012; Calvo and Murillo, 2004, 2009). Voters that are part of the incumbent's network will be targeted with patronage, in the context of a patron-client relationship (Fafchamps and Labonne, 2012). These arrangements are credible because of the longstanding relationships of political exchange. These are analogous to Collier and Vicente (2012)'s "hard core supporters," that cannot be bought or coerced by the

opponent.[6]

However, such ties are hardly the only politically relevant type of networks. This paper demonstrates that voter social networks, which refer to friendship and family ties among voters, are just as important for explaining the targeting of vote buying. The choice of which voters to target depends on the cost of monitoring the subsequent political exchange, which in turn is indicated by the connectedness of the individual, defined by the number of social ties.

Socially connected voters are those with many family members and friends, and whose relationships are characterized by regular contact and interactions. These are individuals who are active in their communities. They also tend to exhibit more behaviors associated with reciprocity, especially volunteering in their communities and helping each other in emergencies.

Well-connected voters are attractive targets for vote buying for two reasons. First, they are easier to identify and locate. The logistical demands associated with vote buying require face-to-face contact with voters (Wang and Kurzman, 2007). This is easier to accomplish when voters are organized into social networks. Examples of logistical advantages include politicians buying votes from churchgoers after services or attending a civic association meeting to buy votes from members. Politicians can also use word-of-mouth to disseminate information about political rallies and other vote buying opportunities.

Second, social networks can decrease the costs of monitoring voters. Given that voters can accept money without necessarily voting for the politician that offered the money, it is reasonable to expect that politicians will focus vote buying efforts on people that they can monitor. Connectedness makes it more likely that others will know how the individual voted, and

[6]Collier and Vicente (2012) use the example of ethnic voting, but clientelism can also create incentives for a similarly core base of support. Voters will vote for their candidate when there is a sense that their interests are tied up in his electoral success, so this framework will include all the workers employed in the incumbent's family business or all the tenants in the incumbent's landholdings. For example, Baland and Robinson (2008) find evidence that employers were able to exert considerable influence over voters in Chile before the secret ballot was established.

reduce the costs for politicians of monitoring voting behavior. This is not necessarily the result of illegal means of violating ballot secrecy; to the contrary, most violations of vote secrecy involve legal means for politicians to find out how voters voted. Common examples of how politicians can find out how voters voted indirectly include voters telling other people, displaying a campaign poster or other materials, or attending a rally or other event where others can observe those present (Brusco, Nazareno and Stokes, 2004). For example, Brusco et. al. (2004) point to the importance of indirect monitoring of the vote by political operatives, by observing whether individuals voted, attended rallies, or arrived at the polling station using candidate-sponsored transport.

In addition, more social ties allow politicians to use group monitoring–on the rationale that closely knit groups of friends, family, and neighbors are likely to vote together. Rueda (2013) presents a model to show how politicians can use vote tallies at the precinct level to monitor groups of voters for vote buying. In his model, politicians and brokers can ensure cooperation by conditioning future bribes on threshold levels of votes within the group.

As a result, candidates tend to allocate their resources to strategically buy *socially connected* voters instead of focusing their efforts on voters with certain individual level characteristics. As a result, the more socially connected individuals will be disproportionately targeted for vote buying compared to the less connected. Targeting vote buying to the socially connected enables indirect methods of monitoring and create incentives for individuals to comply with vote buying arrangements.

Hypothesis 5. *For individuals, more social ties increases the likelihood of being targeted for vote buying.*

Furthermore, an approach focusing on the connectedness of voters can also reconcile the different empirical findings on how individuals are targeted for vote buying. Finan and Schechter (2012) find that politicians target vote buying efforts to voters exhibiting higher degrees of reciprocity. One possible

alternative explanation for these findings is that Finan and Schechter (2012) are explaining targeting in political environments where political brokers are directly connected to voters. Finan and Schechter (2012) identified individuals as reciprocal by having respondents play trust games in an experimental setting. They find that the middlemen or brokers are able to not only identify reciprocal individuals, but they also know an astounding amount about these individuals: political leanings, education levels, land ownership, and other characteristics. Anthropological studies suggest that strong and identifiable party affiliations contribute to these linkages and long-standing relationships between brokers and voters (Hicks, 1967). Similarly, Schaffer and Schedler (2007) identified reciprocity as most important in the context of longstanding relationships between politicians and voters.

At the same time, existing theories of reciprocity do not necessarily address how voters are identified as reciprocal, nor how these transactions would be expected to operate in countries where the ties between politicians and voters are more tenuous. A social networks-based approach can provide a more general framework for understanding vote buying in different political contexts. Even in political contexts where we would expect reciprocity to be more salient, such as countries where the vote buying is part of longstanding relationships with politicians or where party affiliations are well known and meaningful, a social networks approach can still contribute by demonstrating how politicians identify voters as reciprocal. Finan and Schechter (2012) demonstrate that political brokers are able to correctly identify voters as reciprocal because of longstanding ties to voters. In the absence of close ties between brokers and voters, I argue that social connectedness plays an important role in allowing politicians to identify these individuals for targeting in the first place.

As a result, it is important to understand the specific mechanisms driving the relationship between social networks and vote buying. In this framework, social networks are important because they enable indirect monitoring, and allow politicians to reduce the information and monitoring

costs associated with vote buying, even when accounting for reciprocity.[7]

The perception of vote secrecy can be used to directly test the mechanism behind the relationship between social networks and vote buying because the very nature of illegal electoral strategies implies that there are no external or institutional means of enforcement. In the presence of a secret ballot there is nothing stopping voters from accepting money from politicians and voting their conscience once inside the voting booth. Politicians can hardly complain to the authorities, for example, if they make illegal agreements with voters and the voters do not keep their end of the bargain.

One way to demonstrate that social network ties matter because of information and monitoring is to exploit differences in the perception of vote secrecy in order to compare the sample in cases where we expect monitoring to be necessary–because the vote is secret–and cases where monitoring is unnecessary–because the vote is not secret. One possibility is that the longstanding ties between political brokers and voters in Paraguay may imply that Finan and Schechter (2012) are operating in a political context where voters perceive that their vote is not secret.[8]

Hypothesis 6. *The relationship between social networks and vote buying will hold only in cases where monitoring is necessary (i.e., where individuals perceive that the vote is secret).*

[7] By contrast, Finan and Schechter (2012) control for social networks on the rationale that buying the vote of a well-connected individual may influence others into voting for the candidate as well. I also test for this possibility by controlling for social and political influence.

[8] When asked whether someone could figure out how a person voted, 54% of respondents in their survey said yes. When reframed to ask whether votes are secret, 84% of respondents said yes. This suggests that even if respondents believe that the vote is nominally secret, political operatives may still be able to guess how they voted. By contrast, my survey allows me to distinguish between different types of ballot secrecy violations: wholesale violations of vote secrecy, such as bribing elections officials for lists of voters; ballot secrecy violations through direct observation; intentional ballot secrecy violations, such as revealing how you voted; and indirectly guessing how people voted. This allows the analysis to focus only on vote secrecy violations that are unrelated to social ties or vote buying.

Vote Buying in the Philippine Context

In most rural centers in the Philippines, vote buying is prevalent, and journalists working closely with the Philippines Commission on Elections report that the going rate for votes in the 2007 elections ranged from P50 to P1500, approximately $1.11-$33.42. According to politicians and journalists, at least in the national capital region, vote buying in the 2010 elections increased from P500 to an astonishing P5000 per household, approximately $11.14-$111.40.[9] Preliminary indications suggest that the average price per vote increased in most areas during the 2013 elections.[10]

Vote buying in the Philippines is a relatively straightforward activity. Where innovation occurs, it is usually in the development of new methods for monitoring and verification. Following the discussion in the theory section, the main issue for vote buying is to ensure that people cast their ballots as promised after receiving money for their vote. Politicians incur a substantial cost in monitoring, which has inspired attempts to reduce these costs, through techniques either for individuals to prove to politicians that they voted accordingly or for removing the discretion of voters. For example, before the 2010 elections, when ballots were cast and counted by hand, carbon paper was a popular method of allowing voters to record their vote choice and present it as proof to the politician. When electronic voting machines were used in the 2010 elections, issuing pre-filled ballots was the preferred method of guaranteeing vote buying.

According to interviews with both politicians and political operatives, however, these direct methods are not the ideal means of verification. As one mayor told me in the interviews, using carbon paper or other methods of direct verification of the vote are "for amateurs and politicians with more money than sense."[11] In their view, vote buying works best when it is possible to take advantage of norms of reciprocity, group monitoring, or build on existing relationships between politicians and citizens.

[9]Author interviews, May 2010
[10]Author interviews, May 2013
[11]Author interviews, Isabela Province, April 2010

3.2 Research Design

This study uses a two-pronged approach to explore the link between social networks and electoral strategies: 1) testing the hypotheses that social networks matter for the targeting of vote buying; and 2) confirming that networks matter because they solve the monitoring problem associated with vote buying.

The surveys designed and implemented for this project cover 4 municipalities in Isabela province, covering 36 households per *barangay* (village), 6 barangays per municipality, for a total household sample of 864. In addition to the household surveys, this project included surveys of politicians and government officials in each municipality.[12]

This survey builds on data collected from a 1200 household survey of local service delivery and policy environment in Isabela. This survey was funded by the World Bank and administered with the assistance of the University of the Philippines, Los Baños (covering 30 municipalities out of the total 35 in Isabela province, 2 *barangays* per municipality and 20 households per *barangay*). Data from this previous survey is used as a baseline for relevant variables before the 2010 election, providing baseline data on vote buying, electoral violence, and social networks for comparison.

The survey for this project is a more in-depth analysis of *barangays* (villages) and includes an extensive social networks module. The four municipalities were randomly selected from the 30 municipalities from the baseline World Bank survey. Within each municipality, the survey covered the two *barangays* from the baseline World Bank survey for comparison, and four *barangays* chosen using sampling with probability proportional to size (PPS). PPS sampling means that the probability of selecting a *barangay* (the sampling unit) is proportional to the size of its population. This ensures that households in populous *barangays* have an equal probability of being included in the

[12] Officials interviewed include the mayor, the Municipal Accountant/Treasurer, the Municipal Planning and Development Officer, the Municipal Engineer, the Municipal Health Officer, and barangay captains (locally elected village heads).

sample as households in smaller *barangays*. This sampling method is well-suited to studies in which the administrative units vary in size.[13]

3.2.1 Dependent Variables

The dependent variables in this study are difficult to measure for a number of reasons. The most daunting are issues of sensitivity and social desirability bias (Gonzalez-Ocantos et al., 2012). Vote buying is illegal, even if the laws that forbid it are not always enforced in the Philippines. As a result, the survey used a variety of techniques to mitigate these problems, including shielded response techniques and list experiments to address sensitivity issues and multiple measures of the same concept (including measures at different levels).

The vote buying variable is a dummy variable that takes the value of one if the respondent reported accepting money for his/her vote and 0 otherwise. All in all, 204 (24%) of the 855 respondents who agreed to answer the question reported accepting money for their vote. Again, although vote buying is a sensitive question, results (reported in table 3.5 in the appendix) hold using the less sensitive version of this question asking whether they were offered money for their vote. For that formulation of the question, 277 (32%) of the total 858 respondents reported being offered money for their vote.[14]

In addition, I used an unmatched count technique to estimate the rate of under-reporting of vote buying at the village level. The unmatched count method presents respondents with a set of statements that could have potentially happened to them during the 2010 municipal elections and respondents are asked only to report the number of items that happened to them, not which items happened to them. Treatment and control groups are

[13] By contrast, the World Bank survey uses an unusual sampling strategy of selecting only from the poorest *barangays*, on the rationale that the survey results were intended to design projects for the poorest villages. For this project, however, a more conventional sampling design was chosen.

[14] In addition, following the suggestions in Nichter (2013), I also re-ran the estimations using a version of the survey question in which gifts or other non-monetary benefits were included in the definition of vote buying.

assigned randomly, and the control group receives a set of control statements that are largely neutral and infrequent, while the treatment group receives the same set of control statements, plus the additional statement: "Someone offered me money or gifts for my vote." Because the groups are randomly assigned, I can estimate the prevalence of vote buying in the village by merely comparing the means of the treatment and control groups, on the rationale that any additional increase in the average number of items reported can be attributed to vote buying. The results from the unmatched count technique indicate no significant under-reporting of vote buying.[15]

3.2.2 Independent Variables

The social network variables used in this analysis measure the size and characteristics of the individual's social network, particularly the number of close friends, friends that discuss politics, and the number of family ties in the village. Close friends are defined as friends that see each other at least 2-3 times a month. Respondents were asked to name all of their family and friends living in the village. For each person that the respondent named, they were asked follow-up questions about the strength of the social ties, including how often they interacted with the person and whether they discussed politics.[16]

This detailed module on social networks is used to generate two types of out-degree measures. Out-degree captures the approximate size of the individual's social network and is generated simply by summing the number of relevant social ties reported by the individual. For operationalizing social connectedness, I count the number of close friends and family. Results are robust to measuring both friend and family ties as well as restricting the measures to only friends. Furthermore, results are robust to using in-degree

[15]This is not to suggest a lack of social desirability bias, just that the use of the multi-question module (in which respondents were asked increasingly direct forms of the question at each stage and given the option to stop at any point) may have been sufficient for respondents to feel comfortable reporting vote buying directly. For example, Gonzalez-Ocantos et al. (2012) find that there are significant levels of social desirability bias in Nicaragua.

[16]These indicators are important because of the possibility that people in some areas may be acquainted with all the other residents.

measures or other measures of the size of social networks as an alternative.[17]

The main control variables identified in the literature on vote buying and violence are income and level of education. Poorer and less-educated voters may be more inclined to exchange their vote for money or gifts or may be more susceptible to coercion. For example, when describing the targets for vote buying, one mayor mentioned that the municipality where the university was located was one area where neither side would buy votes, because the people there are wealthier, more educated and "can't be bought."[18] Poverty is measured using the responses to the household survey question on whether the household experienced hunger at any point in the past three months but was unable to purchase food to eat. The education control variable measures the highest level of education completed by the respondent.

Two more control variables are included to get at the logistical costs associated with the different electoral strategies. The first is access, measured by the travel time to the urban center using the most common mode of transportation available to the household. This variable is expected to have a negative effect on electoral strategies requiring on-the-ground presence, such as vote buying. In order to buy votes, politicians need to have people in the villages to distribute the cash, and politicians may concentrate their efforts on more easily accessible areas. The other variable that can affect the logistics of different electoral strategies is the time lived in the area. The less time that respondents have lived in the barangay, the greater the need for short-term strategies such as buying votes directly or engaging in violence or intimidation, instead of more long-term strategies such as building clientelist relationships. For example, a mayor in Laguna province interviewed for the pilot surveys cited vote buying by his opponent as his biggest electoral challenge for the 2010 elections because there have been more migrants to his municipality in recent years and these new arrivals do not know of him or the

[17] Although results are robust to other measures of the size of social networks, I chose to use the simpler out-degree measures. The advantage of using out-degree is that it is more readily replicated for surveys in other countries, because it requires asking individuals only for the numbers of friends in various categories, instead of requiring the names of the individuals.

[18] Author interviews, Laguna, Philippines (November 2009)

services that he has provided to the people in the municipality over the years.[19] The length of residence of voters is measured using the number of years that respondents reported living in the village.

In addition, I use controls for other aspects of social networks to determine whether the social ties themselves exercise an independent effect on the targeting for illegal electoral strategies. I control for religion, using a dummy variable that takes the value of one if the respondent attends some form of religious service or activity at least once a month. Being part of a church is expected to affect the number of social ties an individual has, and as a result, it is important to understand whether the ties themselves are important or whether its participation in the religious activity. This is especially important in the Philippines because of the prominent role that religion has traditionally played in politics, from helping orchestrate the "People Power" revolution that ousted then-dictator Ferdinand Marcos to participating in "People Power II" to force then-President Estrada from power.

I also control for volunteer community activities (*bayanihan*), to distinguish between the effects of social networks on information and monitoring on the targeting for electoral strategies and the effects of reciprocity and collective action. Finan and Schechter (2012) find that politicians target vote buying efforts to voters that exhibit higher degrees of reciprocity. The concept of *bayanihan* began with the tradition of helping families move; in this case, the entire village would literally carry the house (typically on bamboo poles) to its new location. *Bayanihan* is strongly engrained in Philippine culture and predates the colonial period. These days, *bayanihan* refers to community-driven volunteer efforts. Examples include community efforts to build an irrigation system, clearing brush, sprucing up the public school or cleaning up trash around the neighborhood. Following Labonne and Chase (2008), I use *bayanihan* as a proxy for reciprocity and collective action.

In addition, because this framework distinguishes between politician

[19]Author interviews, Laguna, Philippines (November 2009)

networks and voter networks, I control for direct ties to politicians in the full models, measured using the number of relatives that currently hold or have held office. I use alternative measures of ties to politicians, such as counting only close relatives, members of the household, or connections to specific types of politicians or levels of government.

Last, I also ran models controlling for electoral competitiveness of the municipality (not reported), measured by the margin of victory in the previous 2007 elections. Results were robust to controlling for electoral competitiveness. Even though competitiveness is likely to affect political strategies, one possibility is that it primarily affects the intensity of politician efforts, but not necessarily the choice of strategy. For example, in terms of vote buying, it is reasonable to expect that competitive elections may lead to a higher price per vote compared to districts with less competitive elections, but may not necessarily determine which individuals politicians will choose to target.

Table 3.1: Summary Statistics

	mean	sd	min	max
Accepted Money for Vote	.239	.426	0	1
Offered Money for Vote	.323	.468	0	1
Social Ties	7.353	2.620	0	15
Friends Ties	3.044	1.930	0	10
Friends that Discuss Politics	1.086	1.811	0	10
Volunteering	.513	.500	0	1
Attends Religious Services	.486	.500	0	1
Relative held any office	1.171	1.598	0	8
Number of Village Official Relatives	.520	.758	0	4
Related to Village Official	.381	.486	0	1
Years lived in the barangay	20.346	13.188	.25	66
Travel Time to Urban Center	43.286	40.784	2	240
Experienced Hunger	.138	.345	0	1
Education	3.389	1.653	1	6
Margin of Victory 2007	.138	.074	.015	.203
Observations	864			

Model Specification

I estimate the following using logistic regression with standard errors clustered by village:

$$Pr(Strategies_{ij} = 1|X_{ij}) = P(\beta_1(SocialTies_{ij}) + \beta_2(Controls_{ij}) + \gamma_j + \epsilon_{ij} > 0)$$

where $Strategies_{ij}$ refers to the set of dependent variables for vote buying for household i in district j during the 2010 elections. $SocialTies_{ij}$ is a set of variables indicating social ties: number of friends and family and the number of friends.[20] $Controls_{ij}$ represents a vector of household-level control variables that are expected to affect the targeting of vote buying, namely poverty, education, travel time to the urban center, length of residence, and religious activity. Municipal fixed effects are represented by γ_j and captures characteristics that are shared across households in the same municipality, and ϵ_{ij} is the error term.

The main results are robust to alternative estimation methods, including OLS and rare events logit (King and Zeng, 2001), as well as the inclusion of village fixed effects.

All tables report odds ratios, which refer to the ratio of the odds that a voter is targeted for vote buying to the odds that a voter is not targeted, adjusted for the simultaneous effect of the other explanatory variables. Odds ratios greater than one imply a positive relationship in that increases in the independent variable increase the probability of being targeted. Odds ratios less than one imply a negative relationship in that increases in the variable reduce the probability of being targeted.

3.3 Empirical Results and Discussion

Table 3.2 presents the results for the two social network measures and vote buying. As expected, the number of friends is positively associated with

[20] Additional specifications also use in-degree measures, another measure of the size of the individual's social network. However, because results were robust to alternative operationalizations, I chose to use the simplest measures for ease of replicability.

vote buying. Again, these are the odds ratios reported, which implies that a one unit change in the number of social ties increases the odds of being targeted for vote buying by a factor of 1.28. In terms of probabilities, going from having no friends and family in the village to having 15 friends and family increases the likelihood of being targeted for vote buying from less than 10% to over 37% (see figure **??** in the appendix). This result lends support to the hypothesis that being part of a social network makes it easier for politicians and political operatives to target voters for vote buying. This result is robust to alternative ways of specifying social ties, such as counting only friend ties (table 3.6 in the appendix).

A number of control variables are also found to be important determinants of vote buying. *Bayanihan*, or community-based volunteer work, is positively associated with vote buying, indicating that politicians may disproportionately target those that are more involved in the community. This is consistent with the findings in the literature regarding reciprocity (Finan and Schechter, 2012). By contrast, direct voters ties to politicians are not significantly related to vote buying, even when different measures of relatives in politics are used (i.e. individuals distantly related to politicians).

In contrast to the expectations from the literature, hunger is negatively related to vote buying[21] This suggests that politicians are not necessarily targeting vulnerable voters or voters with incentives to accept the compensation associated with the vote buying arrangement. These results hold even when using different measures of income.

As expected, lack of access negatively affects vote buying, as indicated by the odds ratio of less than one for travel time to the urban center. Vote buying requires resources on the ground and political operatives are needed to reach the households to distribute the cash.

[21] Again, these are odds ratios reported: values below 1 indicate a negative relationship.

Table 3.2: Social Network Ties and Targeting for Vote Buying

	Accepted Money for Vote		
	Bivariate	Main Model	Additional Controls
Social Ties	1.129***	1.128***	1.123***
	(0.0264)	(0.0263)	(0.0257)
Attends Religious Services			0.938
			(0.179)
Volunteering			1.606**
			(0.267)
Relative held any office			1.031
			(0.0505)
Years Residence		0.990	0.990
		(0.00729)	(0.00728)
Experienced Hunger		0.397**	0.401**
		(0.114)	(0.116)
Education		0.913	0.912
		(0.0790)	(0.0795)
Travel Time to Town		0.995	0.994+
		(0.00325)	(0.00316)
Municipality Fixed Effects	Yes	Yes	Yes
Observations	855	855	853

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

3.3.1 Testing the mechanism: vote secrecy

One issue when studying social networks is that they can be associated with a number of similar concepts with different implications for politics: social capital, collective action, and information, to name a few. This analysis tests the underlying mechanism behind the relationship between social networks and political strategies with a new approach using the perception of vote secrecy. I argue that social networks affect the choice of political strategy because of the role that social networks play in making it easier for politicians to monitor voter behavior and enforce agreements.

One way to test whether this is happening is to compare cases where the vote is secret (and hence monitoring and verification are needed) with cases where the vote is not secret (which implies that monitoring and verification are unnecessary). In these specifications, the expectation is that electoral strategies that do not require monitoring and verification will have the same results as the full sample, while the strategies that do require monitoring and verification, such as vote buying, will have significant results only when the vote is secret.

Following Ferree and Long (2013), vote secrecy is measured using a module in the household surveys on whether the respondent thinks that politicians or political parties can find out how he or she voted. If the respondent answers "yes," a follow-up question asks how they think the politicians can find out.[22] For this analysis, I used only incidences of ballot secrecy violations where voters report that politicians have access to a list of all the voters and how they voted.[23] This is by far the most common response given for this follow-up question, and is necessary for two reasons: 1) to exclude situations where ballot secrecy is directly related to either social networks or vote buying[24]; and 2) to exclude ballot secrecy violations that are

[22]Because there might be differences among people in terms of the willingness to report or perceive vote secrecy, I also re-ran specifications using village-level vote secrecy variables–coding villages as not having vote secrecy based on the number of respondents indicating that their ballot secrecy was violated. Results were identical (not reported).

[23]Results using other criteria for vote secrecy are available in Table 3.9.

[24]An example of ballot secrecy violations related to social networks includes voters believing

unrelated to politician strategies, such as voters unintentionally revealing how they voted.

An advantage to using surveys to measure strategic use of ballot secrecy violations is that politicians have strong incentives to disclose these capabilities, because they want voters to know that the vote is not secret. One respondent described how allies of one mayor went around to all of the villages before the election to show that they had access to such a list.[25] Although voters might not necessarily be correct (i.e., the lists may be fake or the assertions that politicians know how they voted may be untrue), the important part of this dynamic is whether the voters believe that the vote is secret.[26] As one mayor in the pilot surveys explained to us, "it doesn't really matter" whether he can really find out how people voted, "what matters is that [my constituents] believe that I can."[27] In other words, once voters believe that the mayor can find out how they voted, he no longer needs to resort to costly means of monitoring vote choice for vote buying.[28]

The use of social networks as mechanisms of verification and monitoring is confirmed by examining the results for vote buying. Table 3.3 shows that politicians use social networks for vote buying in cases where the vote is perceived to be secret.[29] These results are in line with the high monitoring and verification requirements associated with vote buying. When politicians have access to direct information about vote choice, it removes the need to use social networks as shortcuts for information for group monitoring and verification. Graphs comparing the predicted probabilities are available in figure 3.2 for the split sample and figure 3.3 for the interaction in the appendix.

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their vote is not secret because they told their friends and family. Similarly, ballot secrecy violations can be related to vote buying if voters believe their vote is not secret because the politician purchased their vote. These types of ballot secrecy violations were excluded from this analysis.

[25] Author interviews, May 2010

[26] Results are robust to considering only those villages where political operatives confirm that the lists are real.

[27] Author interviews, April 2010

[28] This follows the logic of Simpser (2013)'s framework in which certain types of electoral fraud can signal political capabilities.

[29] The partial F-test (Chow test) indicates that the coefficients are different between the sam-

Table 3.3: Social Ties and Targeting for Vote Buying, Split Sample and Interaction between Ties and Vote Secrecy

	Secret	Not Secret	Interaction
Social Ties	1.168***	0.891+	1.166***
	(0.0334)	(0.0599)	(0.0325)
Not Secret			7.681***
			(4.317)
Ties * Not Secret			0.774***
			(0.0552)
Volunteering	1.613**	1.713	1.645**
	(0.292)	(0.761)	(0.272)
Years Residence	0.992	0.974	0.990
	(0.00732)	(0.0177)	(0.00705)
Experienced Hunger	0.354***	0.636	0.406**
	(0.0699)	(0.503)	(0.113)
Education	0.932	0.866	0.918
	(0.0886)	(0.122)	(0.0805)
Travel Time to Town	0.996	0.991	0.995
	(0.00286)	(0.00682)	(0.00315)
Municipality Fixed Effects	Yes	Yes	Yes
Observations	714	139	853

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

One concern with this approach is the possibility that the perception of vote secrecy is itself determined by social networks. While there are arguably some forms of vote secrecy perception that may be related to social networks (for example, perceiving that the vote is not secret because the voter told friends and family how he/she voted), restricting this analysis to only cases where voters reported politicians having access to a list of voters and vote choice reduces this concern. Furthermore, none of the social network variables are a significant determinant of perceiving that the vote is not secret because politicians have access to a list of voters and vote choice (table 3.10 in the appendix).

Another concern is that people who perceive that the vote is not secret

ples: $chi^2(2) = 13.36$; p > $chi^2 = .0013$

because politicians have access to a list of voters are fundamentally different in other respects as well. In other words, splitting the sample may capture other differences and not only the differences in the perception of vote secrecy. Although it is possible that there are unobserved factors that give rise to differences in vote secrecy, balance tables (figure 3.4 in the appendix) indicate that there are no significant differences between the two groups of individuals in terms of the variables of interest in this study.

Furthermore, if unobserved factors are driving the difference in the split sample, then we would expect that these factors would exercise the same influence on other electoral strategies, including those that we would not expect to be affected by vote secrecy. To demonstrate that this is not the case, I compare the above results with assistance from politicians, which is also a strategy politicians use to shore up electoral support, but is *not* expected to be affected by vote secrecy. Patronage operates within the context of longstanding ties between politicians and voters in a clientelistic arrangement, and is based on reciprocity and shared interests. These are analogous to "core" supporters in Nichter's (2013) framework that need only to be encouraged to turn out, but do not need to be monitored. Table 3.4 indicates that while social ties are a significant determinant of assistance from politicians, as expected, there is no difference between individuals that differ on the perception of vote secrecy. This reduces the concern that the monitoring mechanism for social ties and illegal electoral strategies is driven by some unobserved factor.

Table 3.4: Social Ties and Targeting for Patronage, Split Sample by Vote Secrecy

	Received Help from Mayor	
	Vote is Secret	Vote is Not Secret
Friend and Family Ties	1.074^{+}	1.183^{+}
	(0.0453)	(0.107)
Controls, Municipal FE	Yes	Yes
Observations	718	140

Exponentiated Coefficients (odds ratios); standard errors in parentheses.
Control variables and municipality fixed effects included but not reported.

3.3.2 Robustness and Identification

In addition to the control variables in the main tables above, I also ran models controlling for other potentially relevant variables. First, I control for political influence and knowledge. One possibility is that social connectedness matters because of influence, and that politicians target connected individuals in order to spread the effects of vote buying more broadly. I use two variables, the number of friends with whom the respondent discusses politics and the individual's score on a political knowledge question. Table 3.7 shows that the main finding holds for all the specifications, and neither political influence nor political knowledge were significant.

Second, I control for whether individuals are related to *barangay* (village) or municipal politicians. Vote buying is often done through village-level brokers (see, e.g., Finan and Schechter, 2012; Brusco, Nazareno and Stokes, 2004). In the Philippines, these brokers tend to be *barangay* captains (village heads) or other village officials. The literature has emphasized the importance of direct ties to politicians and the political machine. As a result, it is important to confirm that voter social ties are important even when taking ties to politicians into account and that voter connectedness is not merely a proxy for these types of ties. Table 3.8 shows that the main finding also holds even when controlling for politician ties. Consistent with the literature on the role of brokers for vote buying, results also show that ties to barangay-level officials are significant determinants of being targeted for vote buying.

Similarly, because vote buying is often done through brokers at the village level, I re-ran the models with village fixed effects. One possibility is that it is particular villages that matter for targeting and that the relationship between social ties and targeting is driven by the selection of brokers with certain network characteristics or villages with certain social structures. Table 3.11 including village fixed effects confirms the main results.

For identification, I used a comparison with the 2007 data from the World Bank survey to show that social network variables are largely the same,

even when there was significant variation in the extent and amounts of vote buying. While this is certainly not the last word on identification, it suggests that: 1) it is unlikely that underlying factors are driving both social ties and vote buying; and 2) social network ties are not responsive to changes in vote buying. There are two caveats here. First, although the 2007 data covered more villages, we were not allowed to keep contact information from our respondents, which precluded a true panel. Second, the available social network measures for the 2007 study were limited, and so I had to use proxies for the social network variables (using variables on social capital, community involvement, and social safety nets).

3.4 Conclusion

There is a well-established literature on targeting voters as part of an electoral strategy. Numerous studies have attempted to explain whether the targeting of political strategies in developing countries follows a "core voter" model (Cox and McCubbins, 1986) or "swing voter" model (Lindbeck and Weibull, 1987), as well as explaining patterns of pork barrel allocations. But pork barrel allocations and public goods provision are hardly the only forms of electioneering available to candidates. Although limited in established democracies, politicians in many consolidating democracies use a much broader menu of political strategies, including everything from vote buying to electoral fraud and violence and intimidation. Compared to the literature on campaigning and pork barrel spending, relatively little is known about how politicians choose the targets of illegal methods of electioneering.

Electoral strategies in consolidating democracies are largely driven by the inability of politicians to make credible policy commitments to voters. This fundamental problem of political commitment precludes the use of policy-oriented strategies, such as cohesive party platforms or campaign promises (Keefer and Vlaicu, 2008). This gives rise to non-programmatic and illegal electoral strategies, such as vote buying. In these political settings, the

costs of monitoring and enforcement are key determinants of the politician's choice to target voters for these strategies, and social networks are important indicators of such costs.

Politicians can take advantage of such network ties to engage in electoral strategies that subvert democratic processes. The same types of network structures that encourage political participation and cooperation in established democracies also make it easier for politicians in consolidating democracies to identify and monitor voters as part of illegal electoral strategies. This allows politicians to bypass democratic processes of accountability. Understanding these mechanisms can help policymakers and local NGOs design more effective voter education initiatives and better address the needs of groups that are vulnerable to these practices.

3.5 Appendix

Table 3.5: Comparing Other Measures of Vote Buying

	Offered Money for Vote	Accepted Money for Vote
Social Ties	1.090***	1.128***
	(0.0260)	(0.0263)
Years Residence	0.995	0.990
	(0.00660)	(0.00729)
Experienced Hunger	0.700	0.397**
	(0.181)	(0.114)
Education	0.986	0.913
	(0.0716)	(0.0790)
Travel Time to Town	0.992*	0.995
	(0.00330)	(0.00325)
Municipality Fixed Effects	Yes	Yes
Observations	858	855

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

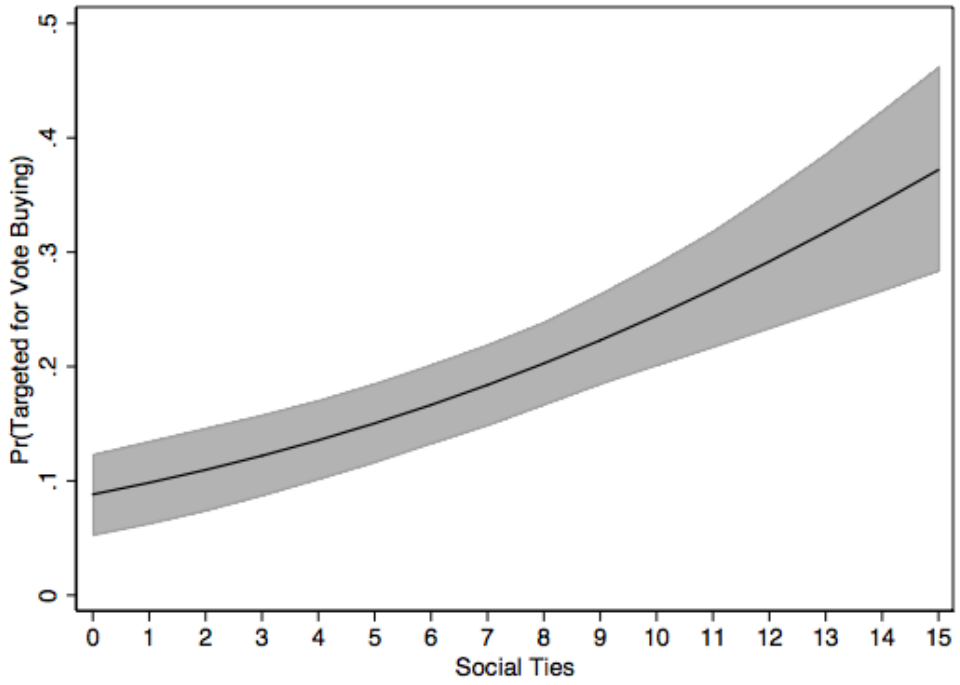

Figure 3.1: Social Ties and the Targeting for Vote Buying

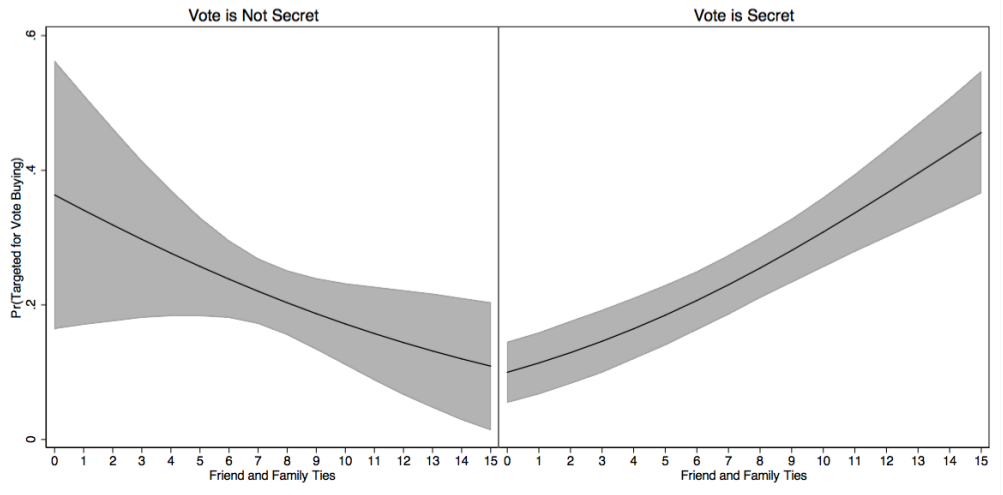

Figure 3.2: Vote Buying and Social Ties, Split Sample by Vote Secrecy

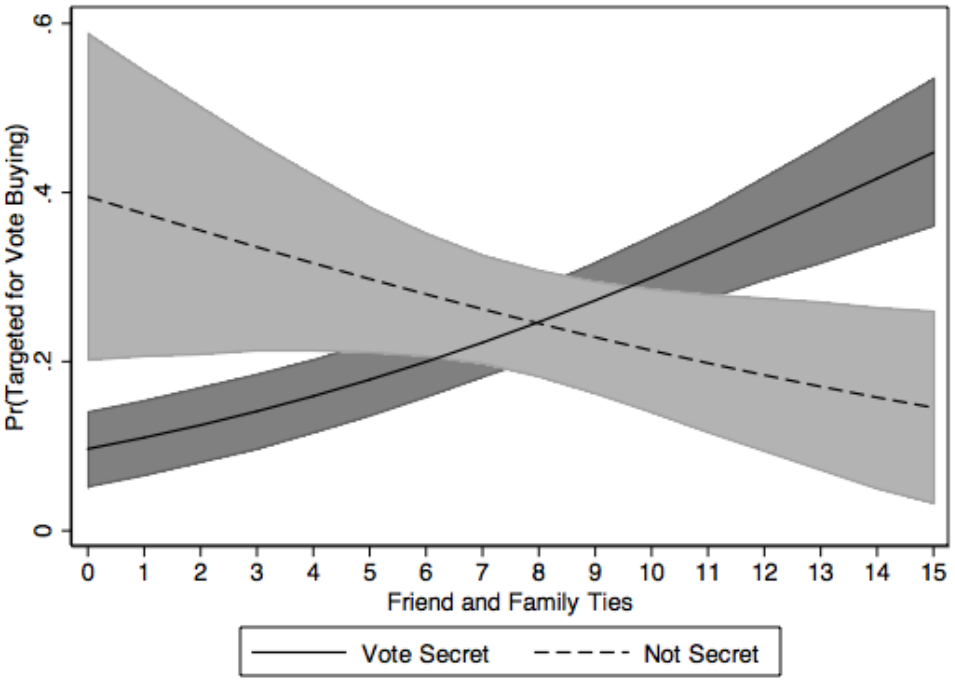

Figure 3.3: Vote Buying and Social Ties, Interaction

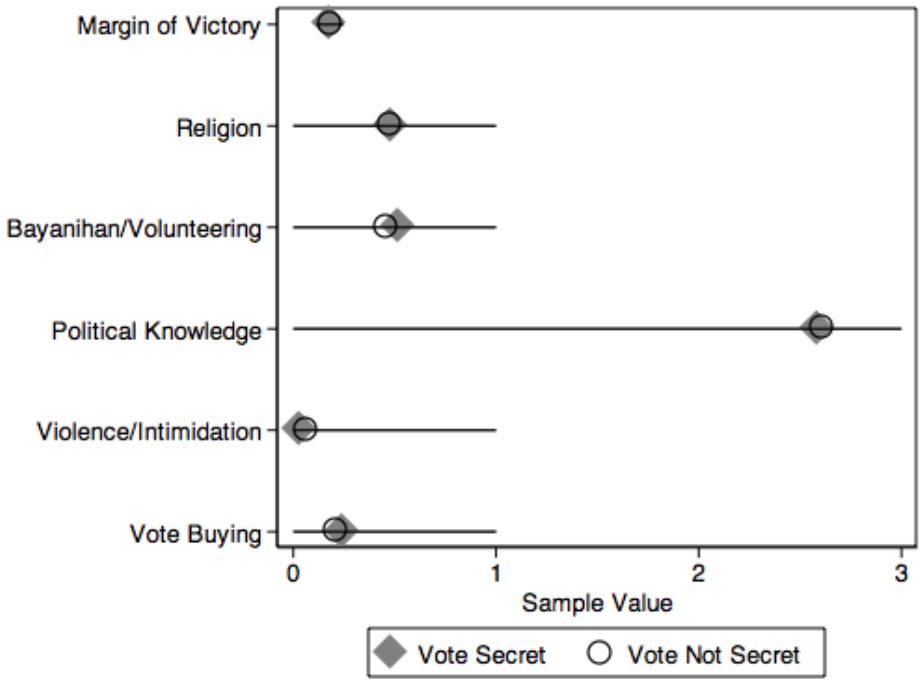

Figure 3.4: Balance Table for the Vote Secrecy Split Sample

Table 3.6: Using Friends as a Measure of Social Ties

	Accepted Money for Vote		
Friend Ties	1.158***	1.152***	1.156***
	(0.0470)	(0.0468)	(0.0436)
Attends Religious Services			0.959
			(0.184)
Bayanihan (Volunteering)			1.683**
			(0.279)
Relative held any office			1.032
			(0.0515)
Years lived in the barangay		0.991	0.990
		(0.00716)	(0.00719)
Experienced Hunger		0.403**	0.409**
		(0.116)	(0.119)
Education		0.906	0.903
		(0.0774)	(0.0784)
Travel Time to Urban Center		0.995	0.994+
		(0.00335)	(0.00325)
Municipality Fixed Effects	Yes	Yes	Yes
Observations	855	855	853

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

Table 3.7: Controlling for Political Influence and Knowledge

	Accepted Money for Vote			
	Political Influence		Political Knowledge	
Social Ties	1.126***	1.121***	1.125***	1.120***
	(0.0344)	(0.0327)	(0.0257)	(0.0248)
Ties that Discuss Politics	1.008	1.006		
	(0.0544)	(0.0557)		
Political Knowledge			1.159	1.158
			(0.126)	(0.133)
Attends Religious Services		0.938		0.948
		(0.178)		(0.185)
Volunteering		1.606**		1.614**
		(0.267)		(0.266)
Relative held any office		1.030		1.028
		(0.0504)		(0.0505)
Years Residence	0.990	0.990	0.990	0.989
	(0.00720)	(0.00721)	(0.00723)	(0.00725)
Experienced Hunger	0.397**	0.401**	0.426**	0.431**
	(0.114)	(0.116)	(0.114)	(0.117)
Education	0.914	0.912	0.906	0.904
	(0.0787)	(0.0790)	(0.0784)	(0.0794)
Travel Time to Town	0.995	0.994+	0.995	0.995+
	(0.00325)	(0.00315)	(0.00331)	(0.00322)
Municipality Fixed Effects	Yes	Yes	Yes	Yes
Observations	855	853	855	853

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

Table 3.8: Controlling for Relationship with Village Officials (Village Brokers)

	Accepted Money for Vote			
Social Ties	1.125***	1.125***	1.128***	1.126***
	(0.0257)	(0.0257)	(0.0258)	(0.0260)
Related to Village Official	1.503**			
	(0.209)			
Total Village Official Relatives		1.216*		
		(0.114)		
Related to Municipal Official			0.416	
			(0.256)	
Total Muni. Official Relatives				0.102*
				(0.112)
Years Residence	0.989	0.989	0.991	0.991
	(0.00703)	(0.00716)	(0.00732)	(0.00721)
Experienced Hunger	0.406**	0.404**	0.393***	0.392***
	(0.120)	(0.118)	(0.111)	(0.109)
Education	0.909	0.909	0.925	0.929
	(0.0760)	(0.0769)	(0.0763)	(0.0752)
Travel Time to Town	0.994+	0.995+	0.994+	0.994+
	(0.00327)	(0.00328)	(0.00321)	(0.00319)
Municipality Fixed Effects	Yes	Yes	Yes	Yes
Observations	855	855	855	855

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

Table 3.9: Alternative Ways of Conceptualizing Ballot Secrecy Violations

	Accepted Money for Vote		
	Secrecy	Secrecy†	Secrecy‡
Social Ties	1.166***	1.181***	1.169***
	(0.0325)	(0.0421)	(0.0338)
Not Secret	7.681***		
	(4.317)		
Ties * Not Secret	0.774***		
	(0.0552)		
Not Secret †		5.774**	
		(3.338)	
Ties * Not Secret †		0.822*	
		(0.0655)	
Not Secret ‡			6.500***
			(3.384)
Ties * Not Secret ‡			0.792***
			(0.0520)
Volunteering	1.645**	1.633**	1.649**
	(0.272)	(0.270)	(0.278)
Years Residence	0.990	0.989	0.990
	(0.00705)	(0.00709)	(0.00713)
Experienced Hunger	0.406**	0.396***	0.400***
	(0.113)	(0.107)	(0.110)
Education	0.918	0.906	0.912
	(0.0805)	(0.0805)	(0.0806)
Travel Time to Town	0.995	0.994+	0.995
	(0.00315)	(0.00324)	(0.00320)
Municipality Fixed Effects	Yes	Yes	Yes
Observations	853	853	853

† Politicians know how people vote (includes answers that don't specify how they know)
‡ Politicians know or "can guess" how people vote (list of voters or direct verification)

Table 3.10: Social Networks and the Perception of Vote Secrecy

	Vote Secrecy: Politicians have voter list	
	Bivariate	Main Model
Social Ties	1.019	1.017
	(0.0312)	(0.0314)
Attends Religious Services		
Volunteering		
Relative held any office		
Years Residence		1.006
		(0.00598)
Experienced Hunger		1.274
		(0.450)
Education		1.024
		(0.0666)
Travel Time to Town		1.003
		(0.00190)
Municipality Fixed Effects	Yes	Yes
Observations	864	864

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

Table 3.11: Social Ties and Targeting for Vote Buying, Village Fixed Effects

	Accepted Money for Vote		
	Bivariate	Main Model	Other Controls
Friend and Family Ties	1.109**	1.108**	1.104**
	(0.0394)	(0.0397)	(0.0399)
Attends Religious Services			0.907
			(0.171)
Bayanihan (Volunteering)			1.490*
			(0.277)
Relative held any office			1.010
			(0.0584)
Years residence		0.993	0.992
		(0.00690)	(0.00700)
Experienced Hunger		0.356**	0.360**
		(0.119)	(0.121)
Education		0.994	0.997
		(0.0646)	(0.0659)
Travel Time to Urban Center		0.989+	0.990+
		(0.00569)	(0.00565)
Village Fixed Effects	Yes	Yes	Yes
Observations	819	819	817

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Robust standard errors in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

Chapter 4

Social Networks and the Targeting of Electoral Violence and Coercion

Illegal electoral strategies are unfortunately prevalent in many consolidating democracies. Among these illegal means of electioneering are coercive strategies, which refer to acts of violence and intimidation that are intended to affect the outcome of elections. The literature on elections-related violence tends to point to systemic features of the political environment that allow such practices to flourish, rather than identifying which individuals are more vulnerable to violence and coercion. By contrast, this project focuses on elections-related violence that is targeted directly to voters, in order to explain how position in the social network affects which individuals are more vulnerable to coercion. Understanding vulnerability to these strategies is important because the individual likelihood for being targeted for coercion can vary greatly.

To explore these issues, I designed and implemented a survey of 864 households and 50 politicians in Isabela Province, Philippines during the 2010 elections.[1] The survey was specifically designed to reduce social desirability bias associated with sensitive political questions and differentiate between socially unconnected, socially connected, and politically influential

[1] The survey was funded by a National Science Foundation Dissertation Research Improvement Grant.

individuals. Using these data, I find that individuals who discuss politics with their social network are disproportionately targeted for electoral violence and intimidation.

The first section of this chapter presents a review of the literature on electoral violence. The second section presents a framework for understanding the incentives of politicians to target voters for coercion. The third section discusses the research design and describes the survey data used for the study. The fourth section presents and discusses the empirical results.

4.1 Coercive Electoral Strategies

There are two main strands in the literature on electoral violence. The first tends to focus on the systemic factors that give rise to violence (Brancati and Snyder, 2011; Dunning, 2011; Laakso, 2007; Hoglund, 2009; Collier and Rohner, 2008). For example, Collier and Rohner (2008) find that democracy can have an ambiguous effect on coercive electoral strategies, and that below a threshold level of income, democracy actually increases the likelihood of violence. The second strand focuses primarily on the consequences of violence (Hoglund and Piyarathne, 2009; Bratton, 2008). This literature focuses on the effect of electoral violence on development and other outcomes.

This project extends the literature by focusing on the targeting of electoral coercion to voters. There is broad consensus that electoral violence is strategic. Hafner-Burton, Hyde and Jablonski (2012) find that institutional constraints on the decision making powers of incumbents and the risk of being removed from office are important determinants of the decision to use electoral violence. Using data on Hindu-Muslim riots in India, Wilkinson (2006) finds that even ethnic riots can be strategically suppressed or incited by politicians for electoral purposes. Wilkinson and Haid (2009) consider ethnic violence as analogous to campaign expenditures. Studies of violence in African countries have indicated that electoral violence is often targeted to certain ethnic groups (Ashforth, 2009; Chege, 2008).

At the same time, unlike the literature on the targeting of clientelism, pork barrel politics, or other electoral politics, there is very little on the targeting of electoral violence to individuals. Most of the work in this area has been formal. For example, Collier and Vicente (2012) find that violence is most effectively targeted towards swing voters. Similarly, Robinson and Torvik (2009) find that swing voters are targeted for repression and violence. The empirical literature has focused on broad factors that increase vulnerability to electoral violence, such as poverty (Bratton, 2008).

In this context, social network analysis is useful for understanding how position and influence in the social network can affect the targeting of electoral violence. Social networks transmit political information and political cues, and different configurations of social networks are associated with changes in the costs for monitoring and enforcement of political exchange and coercion. For example, using laboratory experiments in India,Breza, Chandrasekhar and Larreguy (2013) find that adding the ability to punish in a joint investment game improves outcomes, but only when the person with the ability to punish is central in the social network. This suggests that position in the network affects the ability to effectively threaten and punish.

This chapter focuses on coercive electoral strategies that are specifically targeted to voters in the pre-election period. Electoral violence and intimidation refer to acts of coercion towards voters that are intended to influence or interfere with the electoral process. This definition encompasses both acts of violence and intimidation, and acts committed by both the incumbents and opposition candidates.[2]

[2]Some studies differentiate between the specific types of acts or between the actors committing the violence. For example, Hafner-Burton, Hyde and Jablonski (2012) focus specifically on government-sponsored violence. This study refers to electoral violence perpetrated by candidates for local office.

4.2 Social Networks and the Targeting of Coercion

In close races or areas where voter allegiances clearly favor one candidate over another, candidates sometimes resort to coercion by using violence and intimidation to suppress voter turnout in areas controlled by their opponent. Collier and Vicente (2012) show in a formal model that weak challengers have the largest incentive to use electoral violence and that incumbents have an advantage when it comes to pursuing alternative strategies such as vote buying. Although targeting rival candidates is the type of election violence that makes headlines and attracts national attention, the use of coercion against voters is much more common. Very few politicians have the means and political connections to be able to coerce rival candidates without consequences, either in the form of prosecution by government authorities or retaliation by rivals. As a result, most exercises of coercion are less public and less blatant acts of intimidation against voters.

There are differences in the costs of coercion both across areas and across individual politicians. The main factor driving costs in different areas is the degree to which coercion is prosecuted–pursuing these strategies is difficult in areas where government capacity and willingness to prosecute are high. Even within the same areas, politicians can also have different costs of coercion. Put simply, some politicians have a comparative advantage in pursuing coercive strategies, typically because these politicians have previously used coercion in non-political contexts. Examples include warlords who consolidated power through force or strongmen who formed private armies to defend rent-seeking activities. Once the politician incurs the initial cost of forming and arming goons and private armies, the marginal cost of using them to coerce voters is small. At the same time, even for politicians with existing armed groups in areas with lax enforcement, there are still costs in the risk of retaliation. After all, lax enforcement can cut both ways and make coercive politicians a relatively easier target. As a result, politicians tend to use coercion only as a last resort, when vote buying or other strategies are not available.

In this context, this chapter presents a framework for electoral violence that hinges on the risks associated with pursuing coercive strategies and the need to maximize the effects of intimidation. Voter social networks are important indicators of these trade-offs and determine who gets targeted for coercion.

In contrast to the analysis in the previous chapter, politicians target socially influential voters for coercion instead of the socially connected. The main characteristic of socially influential voters is that others in their network respect their opinions with regard to politics. These people are difficult for politicians to buy because they have strong beliefs about politics that make them unwilling to support a candidate for a token amount. They also occupy a prominent position in the community partly because of their political influence, which makes them less likely to sell their vote at any price. To these individuals, their influence within the community is valuable. For politicians, this is not a problem if these individuals are already supporting them or if the politicians have enough other votes that their influence will not affect the results. However, if that is not the case, then politicians will target these individuals with coercion.

Individuals with politically-relevant ties are attractive targets for coercion during the election period because they are both influential within their villages and vulnerable to targeting in that they are not as prominent as rival candidates or political brokers. These are individuals who tend to discuss politics with others and whose opinions tend to be well-respected within the community, but might not necessarily have run for office or gotten formally involved with politics previously. To extend the example above, these are individuals who not only volunteer to help with neighborhood activities, but they often are the ones who initiate the activities to begin with and they are the ones who participate in neighborhood assemblies. Like the well-connected, they also spend time talking with friends, but their conversations tend to focus more on politics.

These influential individuals may be more important for understanding

the targeting of coercion than the political elites. The literature on social networks indicates that social ties are sources of information and determinants of political participation (Nickerson, 2008; Huckfeldt and Lake, 1998; Huckfeldt and Sprague, 1995; McClurg, 2003). In low-information political environments such as consolidating democracies, social connectedness may even be the primary source for political information, especially at the local level. Similarly, those influential voters who discuss politics with their network may be more important for understanding influence than political elites or politicians themselves. In their work on social influence, Katz and Lazarsfeld (1955) found that face-to-face interactions were more influential than messages from the media or elites, and that the individuals were most influenced by peers of similar social status.

As a result, candidates using coercion will want to target their efforts to these individuals in order to spread the effects of intimidation. Collier and Vicente (2008) have shown that the effect of anti-violence campaigns can spread through social networks. Fafchamps and Vicente (2009) confirm that this spread of information is due to both a diffusion and reinforcement effect. In this model, just as the positive anti-violence message can spread through social networks, so can the negative message of intimidation.

The monitoring requirements of coercion are different than for vote buying. Without longstanding ties to voters, as in Baland and Robinson's (2008) framework, coercion is limited to suppressing turnout. Politicians can assess the effectiveness of coercion as a strategy merely by monitoring turnout. The more difficult task for coercive politicians is monitoring voters to ensure that they do not report coercion to the authorities. Successfully targeting the socially influential with coercion allows politicians to neutralize the individuals who are most likely to report coercive strategies to the authorities.

Figure 4.1 illustrates the importance of position in the social network for the demonstration effect of coercive political strategies. The black dots indicate suffering elections-related violence, and as can be seen in the figure, the black dots tend to not only more centrally located in the network, but also

serve as the links between different parts of the network. By contrast, although white dots are also found in central positions, for the most part, they are in the periphery of the network.[3] The gray dots are those individuals who reported that fear of reprisal from politicians influenced their vote choice. Individuals are much more likely to report feeling intimidated when they have close ties to an individual who was targeted for violence.

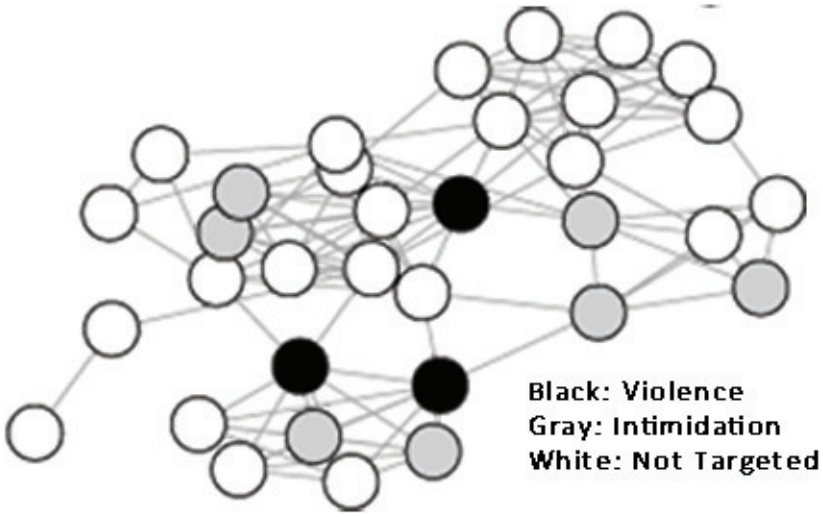

Figure 4.1: Networks and Coercion in One Village

Demonstrating coercive ability allows politicians to show that they can credibly use force to prevent opposition voters from casting their ballots. As a result, politicians target voters that are influential within village social networks in order to maximize the demonstration effect of acts of coercion.

Hypothesis 7. *Individuals with more politically relevant social ties are more likely to be targeted for electoral violence or intimidation.*

4.2.1 Electoral Violence in the Philippine Context

In the Philippines, electoral violence and intimidation tend to be associated with what Sidel (2004) terms "bossism," and refers to the

[3]This figure is the network for a real village, and not a stylized example. At the same time, this is for illustrative purposes only; the spread of intimidation and other outcomes is discussed and analyzed in a different paper.

phenomenon of local strongmen dominating electoral politics absent traditional patterns of clientelist political exchange. Bossism tends to go hand-in-hand with exploitative or illegal economic activities, such as economy monopolies, natural resource extraction, or illegal gambling and drugs. To protect their business interests, bosses establish and maintain private armies and goons. Although these private armed groups are established for enforcing economic exchange, once these groups are in existence the marginal cost of using them for political purposes is negligible.

According to Comelec, there was an increase in elections-related violence in the 2010 Philippine elections (Comelec 2010). The Philippine National Police reports that 567 out of the 1600 municipalities in the Philippines experienced some form of elections-related violence. However, even these reports do not tell the whole story. As discussed in the theory section, the most successful exercise of coercive strategies are in areas where people are so intimidated that the mere threat of violence is sufficient for compliance. According to one political operative, the most successful coercive strongmen are the ones that never have to resort to violence in the first place.[4] Another political operative put it in these terms: the best arrangement for coercion is "having a lot of guns, but using very few bullets."[5] This is not only because guns and goons are expensive to acquire and maintain, but also because of the risks of prosecution and retaliation for actual acts of violence.

In the Philippines, although the political violence that makes the headlines are targeted to rival candidates and politicians, (Coronel et al., 2004), the coercion of voters in order to suppress turnout may have more widespread effects. One example of such coercion from the 2007 elections in the Philippines was an incident in Barangay Tanza in Negros Occidental. Armed men entered four farms to put indelible ink on the fingers of all the farm workers so they were unable to vote.

[4]Author interviews. May 2010
[5]Author interviews. May 2010

4.3 Research Design

The surveys I designed and implemented for this project cover 4 municipalities in Isabela province, covering 36 households per barangay, 6 barangays per municipality, for a total household sample of 864. In addition to the household surveys, this project included surveys of politicians and government officials in each municipality.[6]

This survey builds on data collected from a 1200 household survey of local service delivery and policy environment in Isabela that I also helped design and implement. This survey was funded by the World Bank and administered with the assistance of the University of the Philippines, Los Baños (covering 30 municipalities out of the total 35 in Isabela province, 2 barangays per municipality and 20 households per barangay). I use the data from this previous survey as a baseline for relevant variables before the 2010 election, including data on vote buying, electoral violence, and social networks.

The survey for this project is a more in-depth analysis of barangays and includes an extensive social networks module. The four municipalities were randomly selected from the 30 municipalities from the baseline World Bank survey. Within each municipality, the survey covered the two barangays from the baseline World Bank survey for comparison, and four barangays chosen using sampling with probability proportional to size (PPS). PPS sampling means that the probability of selecting a barangay (the sampling unit) is proportional to the size of its population. This ensures that households in populous barangays have an equal probability of being included in the sample as households in smaller barangays. This sampling method is well-suited to studies in which the administrative units vary in size.[7]

[6] Officials interviewed include the mayor, the Municipal Accountant/Treasurer, the Municipal Planning and Development Officer, the Municipal Engineer, the Municipal Health Officer, and barangay captains (locally elected village heads).

[7] By contrast, the World Bank survey uses an unusual sampling strategy of selecting only from the poorest barangays, on the rationale that the survey results were intended to design projects for the poorest villages. For this project, however, a more conventional sampling design was chosen.

4.3.1 Dependent Variables

The dependent variables in this study are difficult to measure for a number of reasons. The most daunting are issues of sensitivity and social desirability bias (Gonzalez-Ocantos et al., 2012). Coercion and all forms of electoral violence are all illegal, even if the laws that forbid them are not always enforced in the Philippines. As a result, I designed the survey to use a variety of techniques to mitigate these problems, including shielded response techniques and list experiments to address sensitivity issues and multiple measures of the same concept (including measures at different levels).

For electoral violence, respondents were asked whether they were targeted or witnessed an act of electoral violence or intimidation. As can be expected, there are very few people who reported being targeted or witnessing electoral violence or intimidation: only 30 (3.5%) people out of a total sample of 864. I used media reports and key informant interviews at the barangay level to check and confirm the numbers. Even if these methods of cross-checking are limited in that they still do not allow for verifying individual level responses, comparing the responses to the aggregate reports allow me to ensure that there are no suspicious patterns in the rates of under-reporting that may be related to the variables of interest.

In addition, results hold even when using a less sensitive way of assessing intimidation using a module on voting influences (reported in table 3.5 in the appendix). Individuals were shown flash cards with factors that can potentially influence their vote.[8] Respondents are characterized as intimidated if they report "fear of reprisal from candidates" as one of their top three voting influences.[9]

[8]Examples include: the opinion of friends and family, campaign promises and speeches, performance record of the candidates, and even gifts or money given by candidates before the election.

[9]Results are robust to alternative ways of determining the priority of intimidation relative to the other factors.

4.3.2 Independent Variables

As argued previously, politically-relevant and influential individuals may be more important for understanding influence in their communities than the elites (see, e.g. Katz and Lazarsfeld (1955)).

The social network variables used in this analysis measure the political influence of the individual within the village social network. In addition to asking respondents about their friend and family ties in the village, used in the previous chapter, the module on networks also asks respondents to indicate which of their friends they discuss politics with. They were also asked to name individuals in the village whose opinions they respected when it comes to politics.

This detailed module on social networks is used to generate a simple out-degree measure of social influence. This measure is generated simply by summing the number of politically-relevant social ties reported by the individual, operationalized by the number of friends with whom the respondent reports discussing politics.[10] Results are robust to using measures of individuals whose opinions are respected in the community or measures of the position in the social network (centrality) as an alternative.[11]

The two different measures used in the previous chapter and this chapter are necessary because of the different implications for illegal electoral strategies. For vote buying, the theory focuses on the role of social networks for facilitating group monitoring, and the main consideration is the number of social ties, measured simply by the number of close friends that the respondent reports having. For violence, the theory identifies politically

[10] By contrast, the measures of social connectedness used in chapter 3 are the number of close friends and family.

[11] The detailed survey module on social networks allows me to identify the individual's position in the social network using measures of centrality, which essentially weights ties depending on whether the individuals the respondent is connected to are themselves well-connected. Although results are also robust to other measures of influence, because the number of politically-relevant ties is sufficient to capture the effect, I chose to use the simpler out-degree measures. One advantage of using the simpler measure is that it poses less risk to respondents and is more readily replicated for surveys in other countries, because it requires asking individuals only for the numbers of friends in various categories, instead of requiring the names of the individuals.

influential individuals as the primary targets. As a result, what matters is not the number of friends, but the number of friends with whom the respondent discusses politics.

4.3.3 Controls

The main control variables identified in the literature on violence are income and level of education. Poorer and less-educated voters may be more susceptible to coercion and economic conditions in general may affect the level of violence in an area (for example, Berman, Shapiro and Felter (2011) find that improved service provision reduced insurgent violence in Iraq). Poverty is measured using the responses to the household survey question on whether the household experienced hunger at any point in the past three months but was unable to purchase food to eat. The education control variable measures the highest level of education completed by the respondent.

Two more control variables are included to get at the logistical costs associated with the different electoral strategies. The first is access, measured by the travel time to the urban center using the most common mode of transportation available to the household. This variable is expected to have a negative effect on electoral strategies requiring on-the-ground presence, which includes coercion. In order to successfully coerce individuals, politicians need to have a credible presence on the ground. For example, when describing his electoral strategy, one politician in the pilot surveys mentioned that it was important to "remind voters" that they exercised authority in the area.[12]

The other variable that can affect the logistics of different electoral strategies is the time lived in the area. The less time that respondents have lived in the barangay, the greater the need for short-term strategies such as buying votes directly or engaging in violence or intimidation, instead of more long-term strategies such as building clientelist relationships. For example, a mayor in Laguna province interviewed for the pilot surveys cited vote buying by his opponent as his biggest electoral challenge for the 2010 elections

[12] Author interviews (November 2009)

because there have been more migrants to his municipality in recent years and these new arrivals do not know of him or the services that he has provided to the people in the municipality over the years.[13] The length of residence of voters is measured using the number of years that respondents reported living in the barangay.

In addition, I use controls for other aspects of social networks, to determine whether the social ties themselves exercise an independent effect on the targeting for illegal electoral strategies. I control for religion, using a dummy variable that takes the value of one if the respondent attends some form of religious service or activity at least once a month. Being part of a church is expected to affect the number of social ties an individual has, and as a result, it is important to understand whether the ties themselves are important or whether its participation in the religious activity. This is especially important in the Philippines because of the prominent role that religion has traditionally played in politics, from helping orchestrate the "People Power" revolution that ousted then-dictator Ferdinand Marcos to participating in "People Power II" to force then-President Estrada from power.

I also control for volunteer community activities (bayanihan), to distinguish between the effects of social networks on information and monitoring on the targeting for electoral strategies and the effects of reciprocity and collective action. Finan and Schechter (2012) find that politicians target vote buying efforts to voters that exhibit higher degrees of reciprocity. The concept of bayanihan began with the tradition of helping families move; in this case, the entire village would literally carry the house (typically on bamboo poles) to its new location. Bayanihan is strongly engrained in Philippine culture and predates the colonial period. These days, bayanihan refers to community-driven volunteer efforts. Examples include community efforts to build an irrigation system, clearing brush, sprucing up the public school or cleaning up trash around the barangay. Following Labonne and Chase (2008), I use bayanihan as a proxy for collective action.

[13] Author interviews, Laguna, Philippines (November 2009)

In addition, because my theory distinguishes between politician networks and voter networks, I control for direct ties to politicians in the full models, measured using the number of relatives that currently hold or have held office. I use alternative measures of ties to politicians, such as counting only close relatives, members of the household, or connections to specific types of politicians or levels of government.

Last, I also ran models controlling for electoral competitiveness (not reported), measured by the margin of victory in the previous 2007 elections, taken from data on electoral results by municipality. Electoral competitiveness is expected to affect politician strategies. At the same time, it is possible that electoral competitiveness primarily affects the intensity of politician efforts, but not necessarily the choice of political strategy. For example, in terms of vote buying, it is reasonable to expect that competitive elections will lead to a higher price per vote compared to districts with less competitive elections, but will not determine which individuals politicians will choose to target. Similarly, for coercion, it may be that competitive elections lead politicians to divert more resources to demonstrating control over an area, but would not be expected to affect which individuals would be chosen for targeting.

4.3.4 Model Specification

I estimate the following equation using logistic regression with standard errors clustered by barangay:

$$Pr(Coercion_{ij} = 1|X_{ij}) = P(\beta_1(SocialTies_{ij}) + \beta_2(Controls_{ij}) + \gamma_j + \epsilon_{ij} > 0)$$

where $Coercion_{ij}$ refers to the indicator for whether a member of household i in district j experienced electoral violence or intimidation during the 2010 elections. $SocialNetworks_{ij}$ is a set of variables indicating social ties: number of friends and the number of friends with whom the respondent discusses politics.[14] $Controls_{ij}$ represents a vector of household-level control

[14]Additional specifications also use centrality, another measure of the individual's position in the social network. But because results were robust to alternative operationalizations of the social ties variables, I chose to use the simplest measures.

variables that are expected to affect the targeting of violence, namely poverty, education, travel time to the urban center, length of residence, and religious activity. Municipal fixed effects are represented by γ_j and captures characteristics that are shared across households in the same municipality, and ϵ_{ij} is the error term.

The main results are robust to alternative estimation methods, including OLS and rare events logit (King and Zeng, 2001). Results are also robust to using a multi-level (hierarchical) model with variables corresponding to municipal and barangay-level effects (not reported).

All tables report odds ratios, which refer to the ratio of the odds that a voter is targeted for coercion to the odds that a voter is not targeted, adjusted for the simultaneous effect of the other explanatory variables. Odds ratios greater than one imply a positive relationship in that increases in the independent variable increase the probability of being targeted. Odds ratios less than one imply a negative relationship in that increases in the variable reduce the probability of being targeted.

4.4 Empirical Results and Discussion

Table 4.1 presents the results for the social network measures and electoral violence and intimidation. Here, the number of friends with whom the respondent discusses politics is positively and significantly related to being targeted or witnessing electoral violence. Each friend that the respondent discusses politics with is associated with an increase in likelihood of being targeted or witnessing violence or intimidation by a factor of 1.16. In terms of probabilities, going from no friends that you discuss politics with to ten friends increases the probability of witnessing or being targeted with violence or intimidation from almost 2% to over 7% (graphs are available in the appendix).[15] Similar to the results in the previous chapter for vote buying, this

[15]Note that the relatively smaller number of incidents of violence and intimidation gives us much larger confidence intervals, and affects our ability to make accurate predictions at each progressive level of politically relevant ties.

result is robust to including both measures of social ties in the models (table **??** in the appendix).

Table 4.1: Political Influence and Targeting for Coercion

	Electoral Violence or Intimidation		
	Bivariate	Main Model	Additional Controls
Friends that Discuss Politics	1.161*	1.163*	1.162*
	(0.0736)	(0.0708)	(0.0708)
Attends Religious Services			0.954
			(0.350)
Bayanihan (Volunteering)			1.423
			(0.503)
Relative held any office			1.020
			(0.222)
Years lived in the barangay		1.004	1.003
		(0.0147)	(0.0196)
Experienced Hunger		2.027	2.019
		(1.172)	(1.294)
Education		1.275*	1.281*
		(0.142)	(0.137)
Travel Time to Urban Center		0.983	0.984
		(0.0109)	(0.0101)
Municipality Fixed Effects	Yes	Yes	Yes
Observations	864	864	862

Logistic regression with exponentiated coefficients (odds ratios) displayed.
Standard errors (clustered by village) in parentheses. + < .1 * p < .05 ** p < .01 *** p < .001

As for the control variables, one consistent result is education: level of education is positively related to being targeted or witnessing violence or intimidation across all specifications. This suggests that the focus in the literature on vulnerable and marginalized individuals are not capturing the whole story, and that it is the influential individuals within villages that are targeted for violence and intimidation.

4.4.1 Robustness and Identification

One potential problem with logistic regression is the tendency to underestimate the probability of rare events (King and Zeng, 2001). As a

result, I re-ran all of the specifications using rare events logit, using software developed by King and Zeng (2001). This method produces bias-corrected coefficients instead of logit coefficients, and generates relative risks instead of probabilities. I find that the results are largely the same (reported in table 4.2 in the appendix), which, according to King and Zeng (2001) suggest that the original specifications were already appropriate. Rare events logit produces better estimates only when the estimates from logistic regression are biased; otherwise, the results are the same (King and Zeng, 2001).

For an additional robustness check, I re-ran similar specifications at the barangay-level, to demonstrate that the individual-level findings also hold at the barangay level. The social network variable used at the barangay level is the density of social ties, which is the number of social ties as a share of the total potential social ties in the barangay. The barangay-level specifications confirmed the results for vote buying, but were inconclusive for violence, likely because of the much smaller sample. Because the study was limited to 24 barangays, precluding more in-depth analysis, the barangay-level results are intended only as a robustness check (results not reported).

For identification, I used a comparison with the 2007 data from the World Bank survey that I designed and implemented to show that social network variables are largely the same, even when there was significant variation in the electoral strategies. While this is certainly not the last word on identification, it suggests that: 1) it is unlikely that underlying factors are driving both social ties and coercion; and 2) social network ties and position in the network are not responsive to changes in coercive electoral strategies. There are two caveats here. First, although the 2007 data covered more villages, we were not allowed to keep contact information from our respondents, which precluded a true panel. Second, the available social network measures for the 2007 study were limited, and so I had to use proxies for the social network variables (using variables on social capital, community involvement, and social safety nets).

4.5 Conclusion

Although limited in established democracies, politicians in many consolidating democracies use a much broader menu of political strategies, including everything from vote buying and pork barrel spending to violence and intimidation. Compared to the literature on the various mechanisms of political exchange such as clientelism and pork barrel politics, relatively little is known about how politicians choose the targets of coercive methods of electioneering.

Even though the news media tends to focus on assassinations of prominent politicians, in terms of voters, coercive electoral strategies are much more complicated than just eliminating rivals. First, beatings and intimidation are far more common than assassinations. Although there have been incidences of voters being killed by politicians, it is far more likely that the targets for assassinations are rival politicians or political operatives.

Second, coercion tends to be used to suppress turnout . Fear and terror are quite effective for getting people to stay home, while it?s much harder to use fear to get people to go out and campaign and vote for a coercive politician. Coercive politicians need to think carefully about a level of violence that will be effective enough for their ends, but will not attract the attention of the authorities or the media. In this context, the choice of which voters to target for coercion depends on whether the target can generate a sufficient demonstration effect for intimidating other voters, balanced by the risks of retaliation and prosecution.

As a result, the targeting of coercive electoral strategies follows a different logic than the targeting of political exchange, necessitating a focus on the *position* and *political influence* of the voter in the village social network. Political influence can be indicated by the position of the voter in the social network. Politically influential individuals are those whose opinions are well respected in the neighborhood and are considered to be important sources of information within the community.

Initiatives aimed at addressing elections-related violence tend to focus

on events that happen on election day, as well as large scale incidents and violence targeted to politicians and political operatives. By contrast, this chapter uses social network analysis to understand how *voters* are targeted for coercion and the implications for politics in consolidating democracies. Understanding these processes is important for the design of better government initiatives for addressing elections-related violence targeted to voters.

4.6 Appendix

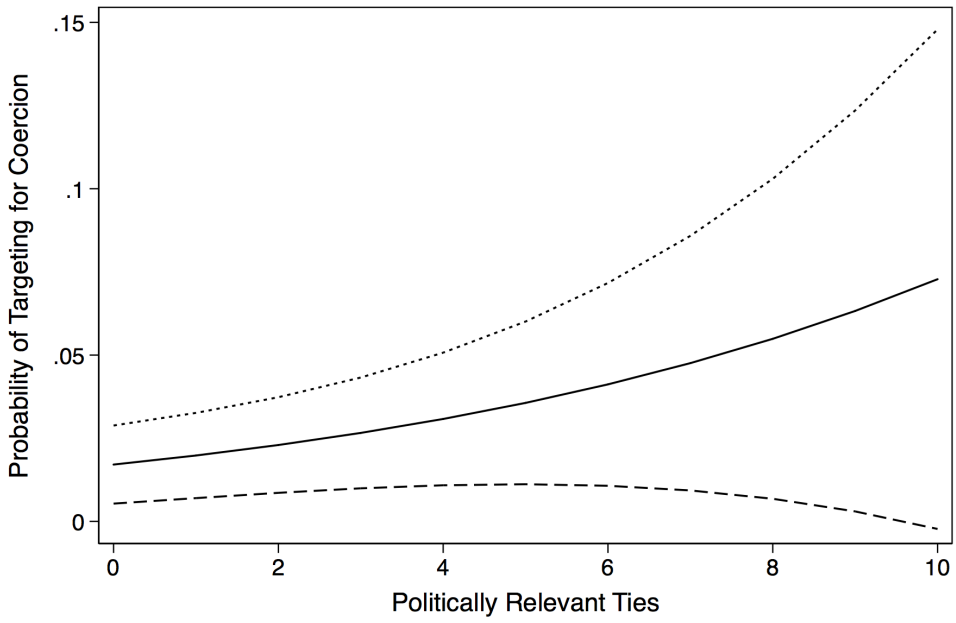

Figure 4.2: Politically Relevant Ties and the Targeting for Coercion

Rare Events Logit

Table 4.2: Social Network Ties and Electoral Violence and Intimidation, Rare Events Logit Regression

	Electoral Violence and Intimidation
Friends that Discuss Politics	1.163**
	(0.0753)
Bayanihan	1.389
	(0.434)
Attends Religious Services	0.980
	(0.325)
Years lived in the barangay	1.003
	(0.0147)
Travel Time to Urban Center	0.979**
	(0.00891)
Experienced Hunger	2.192
	(1.235)
Education	1.286**
	(0.137)
District Fixed Effects	Yes
Observations	862

Rare events logit with exponentiated coefficients (odds ratios); standard errors in parentheses.

Chapter 5

Electoral Strategies and Economic Outcomes

Illegal and quasi-legal electoral strategies such as coercion, vote buying, clientelism, and patronage are significant challenges to democratic accountability. However, relatively little is known about the trade-offs that politicians face when choosing among these different strategies. Additionally, studies tend to take for granted that these strategies have negative effects on economic welfare, without considering whether there are differences in the economic implications of these strategies. This chapter extends the literature by comparing the effects of each of the different electoral strategies and makes the case for a more nuanced perspective in understanding the implications of political strategies for economic development.

The decentralized context of the Philippines allows for a unique opportunity to test the equilibrium relationships between electoral strategies and economic outcomes by focusing on the strategies of mayors. First, conducting the analysis on municipalities within a single country holds the institutional and cultural context constant. Second, the fact that mayors have a great deal of discretion over policies in municipalities makes this a useful case. Local governments in the Philippines are characterized by strong mayors (Lande, 1964; Sidel, 1999), and the Local Government Code of 1991 devolved a number of important service delivery functions to the municipalities.

I develop a framework for linking problems of political commitment with economic outcomes. Using data from two household, village, and municipal level surveys of Isabela Province, Philippines, in 2007 and 2010, I show that the electoral strategies have different implications for the delivery of public services. Vote buying and coercion are associated with decreased performance on public service delivery after the elections, while clientelism and pork barrel politics are associated with improved post-election performance.

5.1 Service Delivery in Consolidating Democracies

Public services are best conceptualized as those services that are subject to under-provision by the market.[1] Public services are classic examples of the need for government institutions to centrally coordinate the provision of services and guarantee access rights. Public service delivery is undoubtedly important for economic development. Ensuring access to public services, including education, health care, water and sanitation, and energy infrastructure, are included in the Millennium Development Goals and are a key focus of efforts of international development organizations such as the United Nations Development Program and the World Bank.

There is also widespread agreement in the literature that political factors are important determinants of the quality of public services. The literature on constitutional arrangements and economic growth have identified a number of electoral rules and institutional design features that are conducive to delivering public services to a broader group of citizens. Milesi-Ferretti, Perotti and Rostagno (2002) find that legislators represent broader socioeconomic groups when constituencies are large, and focus on narrower geographic areas when districts are small. Similarly, Persson and Tabellini (2003) find that large districts and proportional representation create

[1] Although public services may also exhibit various degrees of non-excludability and non-rivalry in consumption, these characteristics are not required, making public services analytically distinct from public goods.

incentives for public goods provision, while small districts and plurality tend towards targeted programs. Shugart et. al. (2004) find that weak parties are associated with personalistic politics and clientelism, which tend to produce particularistic policy at the expense of providing public goods.

State capacity and the quality of the bureaucracy are also important factors for public service delivery. Besley and Persson (2010) explain the persistence of weak states by linking state capacity to outcomes for welfare and economic growth. Cruz and Keefer (2013) argue that because politicians organized in programmatic parties have greater incentives to provide broadly-targeted services, they have similar incentives to improve the quality of the bureaucracy for the delivery of these services.

The other strand of literature on political institutions and public service delivery focuses on decentralization. The standard argument for decentralization is that it better aligns the provision of public services with the preferences of citizens, and improves accountability by creating competition for revenues among different jurisdictions (Tiebout, 1956). In addition, decentralization allows for public goods to be provided at a local level, with better regard for the needs of the specific region (Filippov, Ordeshook and Shvetsova, 2004). Similarly, the political rationale for decentralization focuses on increased accountability of local politicians and empowerment of individuals by giving a measure of local control over certain policy areas (Bardhan, 2002).

In a developing country context, however, devolving service delivery to local governments will not necessarily lead to these outcomes, especially when existing social and political structures limit mechanisms for accountability (Treisman, 1999; Bardhan, 2002). For example, Blanchard and Shleifer (2000) find that provincial governments in Russia were more prone to capture by state-owned enterprises than the central government. Similarly, Fan, Lin and Treisman (2009) find that increasing levels of policymaking leads to increased corruption, especially for governments with lower revenues. Even fiscal decentralization can be associated with greater inefficiencies. Using

subnational data for Tanzania and Zambia, Gibson and Hoffman (2006) find that districts receiving larger shares of their funds from the central government or external aid organizations allocate a larger share of the budget to administrative costs and a smaller share to service delivery. Furthermore, Bardhan and Mookherjee (2006, 2000) claim that many of these studies are underestimating the problem, and that when quasi-legal forms of political corruption are included (such as pork barrel projects or preferential treatment for firms), any decline in bribery observed at the national level is offset by substantial increases in elite capture at the local level.

At the same time, despite the progress in identifying the institutional determinants of public goods provision, considerably less progress has been made in understanding how politician incentives matter for the provision of public goods. Politician incentives are especially salient for explaining differences in public goods provision among localities within the same country. In addition to explaining this puzzle, an approach focusing on politician incentives can also extend the broader literature on growth by identifying the limits of these theories. For example, Keefer (2005) finds that young democracies are more corrupt and have less efficient bureaucracies than long-standing democracies. This effect holds even when controlling for differences in education levels of voters, political and electoral institutions, and the fact that young democracies tend to have more polarized societies. According to Keefer and Vlaicu (2008), "nearly all young democracies exhibit similar institutional checks and balances as old democracies; what may differ are the incentives of veto players to engage in expropriation in the first place."

As a result, understanding the pattern of political incentives is important for explaining differences in the provision of public goods (Keefer and Khemani, 2008; Keefer, 2004). In particular, the problem of insufficient or perverse political incentives is what Keefer terms "political market failures," and refers to features of the policymaking environment that hamper the processes for translating voter preferences into policy (Keefer, 2004). Additionally, Keefer and Khemani (2008) identify three broad types of

political market imperfections that are important for understanding accountability: 1) lack of information about the performance of politicians; 2) social polarization among voters that hampers the representation of interests; and 3) the inability to make credible political promises.

In this context, the prevalence of illegal electoral strategies has clear economic implications. In environments where informal or illegal political interactions dominate formal rules, elections do not function as accountability mechanisms. Politicians have little incentives to make good policies, because poorly functioning institutions and bureaucracies make the link between politician choices and economic outcomes more tenuous.

One notable exception is the recent paper using the same 2007 survey data, by Khemani (2011), showing that vote buying is linked to lower public goods provision. In Khemani (2011)'s framework, the association between the two stems from clientelist political competition and the increased emphasis on private benefits at the expense of public goods. By contrast, this paper distinguishes between the ex ante electoral strategies of vote buying with the long-standing relationships that characterize traditional patron-client relationships in order to explore the mechanisms underlying the correlation between vote buying and decreased service delivery.

Furthermore, this paper also takes into account that there are other political strategies, and compares outcomes not only from vote buying and clientelist strategies, but also outcomes from coercion and pork barrel politics. Coercion is especially problematic from the standpoint of long-term economic welfare. Using qualitative evidence from Sri Lanka, Hoglund and Piyarathne (2009) argue that the effects of electoral violence persist long after the end of elections. Violence caused partisans in Sri Lanka to restrict their economic activities, by shopping only in stores controlled by co-partisans, for example. At the same time, despite the increasing focus on electoral violence in the literature (see, e.g., Brancati and Snyder, 2011; Dunning, 2011; Laakso, 2007; Hoglund, 2009; Collier and Rohner, 2008; Hafner-Burton, Hyde and Jablonski, 2012), there have been no studies demonstrating the empirical link between

coercion targeted to voters and reduced public service delivery after the election.

Pork barrel politics is another common electoral strategy both in developing countries such as the Philippines (Labonne, 2013*b*; Schaffer, 2002; Cruz and Schneider, 2014), Brazil (Ames, 2000), and India (Khemani, 2003), and even in developed democracies. In fact, the use of the term comes from the literature on American politics. Pork barrel politics refers to the targeting of public funds or projects to a politician's district for political purposes. Infrastructure spending is a particularly popular form of pork barrel politics because of the ease of geographic targeting (Keefer, 2005). Construction projects are also visible and high-profile, which encourages incumbents to increase spending on such projects during election years (Drazen and Eslava, 2005*b*; Labonne, 2013*b*).

Pork barrel funding can be targeted either to supporters or to electorally competitive areas. Under (Cox and McCubbins, 1986)'s "core voter" model, politicians target their supporting constituencies in order to reward them. For example, Diaz-Cayeros, Magaloni and Weingast (2003) find that dominant parties in Mexico sustain their position using the strategic disbursement of central government funds to supporting municipalities. Burgess et al. (2013) also find that, in a non-democratic context, more funding for roads goes to districts that share the ethnicity of the president. Similarly, Barkan and Chege (1989) show that during the 1980s, funding for road construction in Kenya was targeted to areas that supported President Daniel Arap Moi.

By contrast, Lindbeck and Weibull (1987) argue that parties target "swing" voters, in an attempt to win over undecided or unmobilized voters. In India, for example, Khemani (2003) finds that central government resources are strategically targeted to areas where the party can potentially win additional seats rather than to their core bases of support. Schady (2000) also finds that allocations from the Peruvian Social Fund FONCODES were targeted to provinces where the increased funds were expected to have the greatest electoral effect.

5.2 Electoral Strategies and Economic Outcomes

The problem of political commitment refers to the fact that exchange and interactions between actors are hampered by the inability of actors to credibly guarantee that they will not act opportunistically (Milgrom, North and Weingast, 1990; North and Weingast, 1989). Illegal and quasi-legal electoral strategies such as clientelism, coercion, vote buying, and pork barrel politics thrive in policy environments where politicians cannot credibly commit to campaign promises and party platforms. Where political market imperfections prevent elections from functioning as accountability mechanisms, electoral strategies are dominated by coercion and political exchange.

Keefer and Vlaicu (2008) identify the lack of institutionalized mechanisms for credible commitment, such as parties, as the reason why new democracies tend to rely on patron-client networks instead of engaging in programmatic politics. In their framework, politicians have two options for building credibility: 1) establishing a reputation through parties; and 2) relying on intermediaries in a clientelist system. The costs associated with the former lead many new democracies to rely on clientelism instead. This creates a trade off: new democracies choose the short run benefits of clientelism at the expense of the development of institutionalized party systems (Keefer and Vlaicu, 2008).

Arguably, this choice has important implications for economic outcomes. The literature has identified a number of institutional arrangements that link programmatic politics and large constituencies to public goods provision. According to Shugart et. al. (2004), weak party institutions favor personalistic politics and clientelism, which tend to produce narrowly-targeted economic policy at the expense of providing public goods. Similarly, Persson and Tabellini (2010) find that large districts and proportional representation are associated with broadly targeted public policy, while small districts and plurality foster narrowly targeted policies.

However, clientelism and programmatic politics are not the only

electoral strategies used by politicians. With the notable exception of Khemani (2011)'s work linking vote buying to lower public goods provision, there has been considerably less progress on understanding the economic outcomes associated with these different strategies. I argue that the strategies all have different implications not only for the democratic process but also for economic outcomes.

Among these illegal and quasi-legal electoral strategies, strategies that encourage reputational mechanisms for credibility tend to be more compatible with public goods provision. Solving the problem of political commitment by establishing a "brand name" or developing long-term relationships between voters and politicians–even at the individual politician level–creates more incentives for performance than solving commitment problems through other means.

Building political support through long-term interactions between politicians and voters is analogous to Olson's (1993) concept of "stationary bandits." In his model, stationary bandits are preferable to "roving bandits," because stationary bandits set limits on their expropriation in order to establish a long-term monopoly of institutionalized extraction (Olson, 1993). By contrast, roving bandits compete with each other to steal as much as possible, which removes incentives for the populace to invest and produce more wealth that can be extracted later.

As a result, I hypothesize that coercion and vote buying, the two strategies that do not foster long-term ties between politicians and voters, will be negatively related to public goods provision after the election. Although the tendency in the literature is to classify vote buying as a type of clientelism, the recent literature on vote buying and clientelism emphasize important conceptual differences between the two (see, e.g., Nichter, 2013).

However, in many ways, the more important parallels are between vote buying and coercion. Both involve ex ante direct voter interventions and do not depend on reputation mechanisms for political commitment. For example, Gonzalez-Ocantos et al. (2013) treat the two strategies as two sides of the same

coin, using the analogy of "carrots and sticks." More importantly, these strategies can be administered as one-time political transactions between voters and politicians and do not require long-term relationships for successful implementation. As a result, both vote buying and coercion are consistent with the notion of "roving bandits" in that these electoral strategies do not require or facilitate the development of long-term ties between voters and politicians.

Hypothesis 8. *Coercion is negatively related to public goods provision.*

Hypothesis 9. *Vote buying is negatively related to public goods provision.*

By contrast, the electoral strategies that require long-term reputational mechanisms for solving political commitment problems foster incentives for improved public service delivery. When electoral strategies are contingent on long-term relationships between voters and politicians, it creates incentives for sustained engagement even after the elections are over. Examples of these types of electoral strategies include patronage and pork barrel politics, which are arguably most effective when building on repeated interactions between voters and politicians over time. These strategies are consistent with Olson's notion of "stationary bandits" and explains the viability of these electoral strategies.

This type of argument also underscores the literature attempting to distinguish between different implications of elite involvement in politics. For example, both Mansuri and Rao (2004) and Powis (2007) find that some benevolent forms of elite domination can promote positive development outcomes, and that these dynamics differ from other types of elite capture. At the same time, these findings are limited to a very specific context: explaining the inconsistent outcomes associated with community-driven development aid projects. More studies are needed in order to explore these issues in a broader context.

Patronage and pork barrel politics generate incentives for public service delivery after the election because of the specific type of political exchange involved with these strategies. First, the delivery of these strategies involves

long-standing relationships between voters and politicians. Second, the political exchange cannot be provided as a one-time spot transaction or even limited to the pre-election period. As a result, these strategies tend to be more consistent with incentives to improve service delivery after the election.

Hypothesis 10. *Patronage is positively related to public goods provision.*

Hypothesis 11. *Pork barrel politics is positively related to public goods provision.*

5.2.1 Electoral Strategies in the Philippine Context

Patronage in the Philippines involves longstanding relationships between politicians and voters. In most areas of the Philippines, patrons come from large landowning families that have held power in the area for generations (Sidel, 1999; Querubin, 2010; Hutchcroft and Rocamora, 2003). Their longstanding ties to the community gives them the ability to make credible commitments to voters. In this sense, the family dynasty has the same "brand name" effect as a party, albeit with the goal of expanding influence rather than achieving particular policy goals or objectives. This also explains why there are high barriers to entry for becoming a patron: because these are family dynasties, the reputation of the power broker's "brand name" doesn't necessarily carry over to a rising challenger. In other words, a competing political actor (such as a rival family dynasty) would still need to establish its own reputation in the area, even if it were able to seize control of the area. As a result, competing families tend to divide up geographical areas of control instead of competing for influence in the same area. Even if there were competition within the same family, frequent turnover of influence will also erode the family's credibility and diminish their ability to function as an intermediary. Querubin (2010) finds that not only are political dynasties longstanding, but non-dynastic politicians who manage to win office are disproportionately more likely to establish their own dynasty.

Key to the maintenance of these political dynasties is the ability to provide patronage. There is even a commonly used Tagalog phrase that refers

to patronage: *kasal*, *binyag*, *libing*, which literally means "weddings, baptisms, funerals." This well-known phrase refers to the fact that politicians are typically expected to support their constituents throughout their whole lives, including everything from serving as godfathers for baptisms and weddings, providing jobs and other assistance, and contributing towards funeral costs.

Previously, vote buying was a strategy that went hand-in-hand with clientelism, in that patrons would offer a small gift on election day, in addition to the long-term exchange relationships. However, vote buying has taken an increasingly different form in which politicians bypass power brokers and target voters directly with one-time payments or gifts at the time of the elections. This is in contrast to the long-term relationships that characterize traditional patron-client exchange (Stokes, 2005).

Contingent political exchange targeted to groups takes the form of pork barrel politics. One important source of pork barrel funds are discretionary funds allotted to congressmen and senators called the "Priority Development Assistance Funds" or PDAFs. The PDAFs are intended to support small-scale local infrastructure or development projects and fill in the gaps left by larger national initiatives.[2] For comparability, this study focuses on pork barrel projects funded and initiated by mayors.

Last, electoral violence in the Philippines tends to be associated with what Sidel (2004) terms "bossism," and refers to the phenomenon of local strongmen dominating electoral politics absent traditional patterns of clientelist political exchange. Bossism tends to go hand-in-hand with exploitative or illegal economic activities, such as economy monopolies, natural resource extraction, or illegal gambling and drugs. To protect their business interests, bosses establish and maintain private armies and goons.

[2]Each member of the House of Representatives is elected in a single district and allotted a P70 million PDAF, while senators have a single national constituency and are allotted P200 million each. There is evidence that politician networks largely determine the allocation of government funds in the Philippines. For example, a study conducted by the Philippine Center for Investigative Journalism found that many legislators allocated more than half of their discretionary funds to municipalities where their child, parent, or sibling was the mayor (Coronel et al., 2004). In some cases, these allocations to municipalities controlled by relatives comprised the entire share of the legislator's PDAF.

Although these private armed groups are established for enforcing economic exchange, once these groups are in existence the marginal cost of using them for political purposes is negligible. According to the Philippines Elections commission, there was an increase in elections-related violence in the 2010 Philippine elections (Comelec 2010). The Philippine National Police reports that 567 out of the 1600 municipalities in the Philippines experienced some form of elections-related violence. However, even these reports do not tell the whole story. Although the political violence that makes the headlines are targeted to rival candidates and politicians, (Coronel et al., 2004), the coercion of voters in order to suppress turnout may have more widespread effects. One example of such coercion from the 2007 elections in the Philippines was an incident in Barangay Tanza in Negros Occidental. Armed men entered four farms to put indelible ink on the fingers of all the farm workers so they were unable to vote.

5.3 Research Design

One problem in the literature is the fact that politician motivations are difficult to observe directly. As a result, this research design focuses on measurable objective indicators of child and maternal health outcomes, a policy area that is under the responsibility and control of the municipal government. The Local Government Code of 1991 devolved both fiscal and administrative responsibility for health care from the national agencies to the municipalities (Llanto, 2009). Local governments have control over personnel decisions and paying salaries, using funds from the national government (Azfar et al., 2000; Llanto, 2009). The activities, equipment, and staff of barangay health stations originate from the municipalities (Azfar et al., 2000). The fact that mayors have discretion over the allocation of funds at the municipality level makes them a reasonable indicator of politician incentives to provide public goods.

5.3.1 Dependent Variables

The dependent variables used in this study are the availability of medicines and equipment for child, prenatal, and maternal health at the barangay level. I chose to use the availability of medicines and equipment instead of other indicators because the timing of the provision of services is clearly defined: the electoral strategies all occurred before or during the elections, while the availability of medicine and equipment is assessed after the elections. Furthermore, the availability of medicine and equipment is easily observed by enumerators and does not rely on subjective assessments of the quality of health services.

Child and maternal health outcomes are useful operationalizations of public goods provision for a number of reasons. First, the bulk of provision of child and maternal health care is devolved to the municipalities, which implies that mayors have a degree of control of the quality of services provided. By contrast, for example, initiatives for infectious diseases such as tuberculosis are primarily handled through national agencies.

Second, child and maternal health issues are not a "hot-button" issue for electioneering. This is partly because of the nature of public services and the difficulty of excluding individuals from availing themselves of these services based on how they voted. Mostly, however, child and maternal health is not as politicized even compared to other public goods, such as roads, because of the lack of opportunities for kick-backs or patronage. Labonne (2013*b*) finds that politicians engage in construction projects in the pre-election period. By contrast, there is no evidence that the supply of child and maternal health medicine and equipment in barangay clinics follows a similar election cycle. Similarly, in a study of the same province, Khemani (2011) finds that there is no correlation between electoral competitiveness and the provision of health services.

The dependent variables are constructed from a module of variables indicating whether medicines or equipment are in stock. These are split up into four categories: child health, prenatal health, healthcare equipment, and

child and maternal health. Child health includes the availability of an infant weighing scale, oral rehydration salts, deworming medicine, vitamin A, and vaccinations for HEPA, DPT, and polio. Women's health includes the availability of prenatal vitamins, iron supplements, vaccinations for pregnancy, and contraceptives. Health equipment includes materials for intravenous therapy for dehydration, sterile syringes, first aid kit, and an infant weighing scale.

Alternative indices were also constructed without including vaccinations. This is because the immunization program is a national-level initiative funded by the central government and vaccines themselves are sourced from WHO/UNICEF. However, in practice, delays and misappropriation of vaccines is common because providing the vaccinations still requires equipment and other supplies (syringes, e.g.) that are purchased at the local level (Azfar et al., 2000). Furthermore, in some cases, local governments purchase their own vaccines with local funding (Azfar et al., 2000).

Contraceptives are also removed in some specifications, because of the possibility that there are other political factors that determine the provision of contraceptives (such as opposition from "pro-life" local executives or the Catholic Church in the area). At least two of the mayors in the study indicated that opposition from religious groups affected the ability of the municipality to effectively provide contraception.[3].

5.3.2 Independent Variables

The patronage variable is the proportion of respondents in the barangay who reported receiving direct assistance from the mayor. Forms of assistance include money, both as a gift and as a loan, non-monetary gifts, jobs, or other non-monetary assistance (endorsement letters, assistance with paperwork, etc.). This variable ranges from no respondents in the barangay reporting having received assistance to over 85% of respondents reporting having

[3]Author interviews

received at least some help from the mayor or municipal government. The most common form of assistance is receiving money, either as a gift or a loan.

The pork barrel variable is the percentage of barangays with road construction projects, taken from a survey of 30 municipal engineers in the province. Road projects were chosen because these projects are specific to certain localities, have high visibility for elections, and provides employment through construction jobs, making them attractive pork barrel projects for politicians (Drazen and Eslava, 2005*b*; Labonne, 2013*b*). The measures used exclude road projects funded by national or provincial politicians or development agencies.[4] These also include the construction of pathways and bridges, and maintenance and repaving activities. This variable ranges from no road construction projects in any barangay to municipalities in which every barangay has at least one project. The main results are robust to using barangay-level counts of projects using data from the accounting office, but these tend to be less accurate than the figures from the municipal engineering office.[5]

The vote buying and coercion variables are the most difficult to measure because of social desirability bias. Both coercion and vote buying are illegal, even if the laws that forbid these practices are not always consistently enforced in the Philippines. As a result, I designed the survey to mitigate these problems, using list experiments to address sensitivity issues and multiple measures of the same concept (including measures at different levels) to address the issues.

The coercion variable is the logged respondents in the barangay who report that "fear of reprisal" from politicians ("*takot na babalikan*" in Tagalog) was a significant determinant of their vote choice.

The main vote buying variable is the proportion of respondents in the barangay who reported being offered money for their vote. The average among

[4]Although provinces and municipalities are responsible for provincial and municipal road networks, respectively, congressmen can also fund these projects using their discretionary funds (Manasan and Villanueva, 2006; Llanto, 2008).

[5]For example, discrepancies could arise when money is allocated for a project, but no construction activity took place.

the 30 municipalities is a vote buying rate of 20%, ranging from zero respondents reporting vote buying to 67% of respondents reporting vote buying. Again, although vote buying is a sensitive question, the structure of the question reduces the sensitivity (i.e. asking whether they were offered money for their vote vs. asking if they sold their vote). Results are robust to using the percentage of respondents reporting that there is vote buying in their barangay (a less sensitive formulation of the question) or the percentage of respondents reporting that they accepted money for their vote (a more sensitive formulation of the question).

In addition, I used an unmatched count technique to estimate the rate of under-reporting of vote buying at the barangay level. The unmatched count method presents respondents with a set of statements that could have potentially happened to them in the most recent 2007 municipal elections and respondents are asked only to report the number of items that happened to them, and not which items happened to them. Treatment and control groups are assigned randomly, and the control group receive a set of control statements that are largely neutral and infrequent, while the treatment group receives the same set of control statements, plus the additional statement: "Someone offered me money or gifts for my vote." Because the groups are randomly assigned, I can estimate the prevalence of vote buying in the barangay by merely comparing the means of the treatment and control groups, on the rationale that any additional increase in the average number of items reported can be attributed to vote buying. The results from the unmatched count technique indicate no significant under-reporting of vote buying at the barangay level.

Similarly, coercion is measured a number of different ways. In addition to asking respondents about whether they experienced or witness acts of violence or intimidation, the survey also asks respondents about the degree to which fear or intimidation affects their vote choice. It is this latter version of the question that is used in this analysis. To further decrease the sensitivity of the question, respondents were presented with a number of potential voting

influences on picture flashcards (examples include "preferences of friends and family" or "campaign promises") and were asked to order the cards according to the factors that were most important to them.

5.3.3 Controls

An indicator for income is the rate of child malnutrition in the barangay. Although alternative measures of poverty are available,[6], I use child malnutrition because it is a more direct indicator of baseline conditions of child and maternal health. In addition, using child malnutrition can also rule out the possibility that these health services are merely going to areas where they are most needed.[7]

I control for electoral competitiveness using a variable for the percentage of respondents that voted against the mayor. The survey literature suggests a tendency for over-reporting votes in support of the incumbent. As a result, I took several measures to reduce the social desirability bias related to the question. Respondents were guaranteed confidentiality and enumerators were trained to explain the measures that would be taken to ensure confidentiality at all stages in the process–from data collection and encoding to data storage and analysis. In addition, respondents were given ballots with only ID codes corresponding to the survey instrument, and the ballots were opened only at the data encoding stage. As a result, there were no individuals on the enumerator teams or encoding teams that would have access to both the names and the ballot results, which prevents anyone from being able to match individuals to their votes. Fifteen municipalities reported 100% support for the incumbent, 27 reported at least 75% support for the incumbent, 16 reported between 50-75% support, while 2 reported less than 50% support for the incumbent.

[6] Alternative measures of income used in the robustness checks include percentage of households experiencing hunger, income class category of the municipality, or small area poverty estimates calculated by the World Bank.

[7] Although there is little evidence to suggest that allocation of funding for public services are determined by need. Results from road projects in the same province suggest the opposite: that roads do not tend to go to areas that have the greatest need of them.

Last, I control for factors that might affect the level of services for logistical reasons. I control for distance to the nearest urban center, because municipalities can have difficulty distributing medicine and equipment to remote barangays. I also control for barangay population, on the rationale that larger areas may have more resources simply because of their size. The average barangay in the sample has a population of just under 2000 individuals. The smallest barangay has a population of 328, while the largest has over 5000.

5.3.4 Model Specification

I estimated two sets of models. The first are regressions for each political strategy using OLS with standard errors clustered by municipality.

$$PublicServices = \alpha + \beta_1(STRATEGY) + \beta_2(C) + \epsilon$$

Where $PublicServices$ refers to the vector of variables indicating the effectiveness of public service delivery in the municipality, measured using the availability of medications and equipment for child and maternal health; $STRATEGY$ is the set of electoral strategies: vote buying, coercion, fraud, patronage, and pork barrel politics; and C is the vector of control variables.

In order to generate more applicable predicted values, I also used a generalized linear model (GLM) with a logit link and binomial distribution family, following the recommendations of Papke and Wooldridge (1996). A GLM with logit link is appropriate in this context because the measures of public goods can be conceptualized as proportions, aggregated from indicator variables, which means that they range only from 0 to 1. Consequently, predicted values are more appropriate if they are also bounded by this range (McDowell and Cox, 2013).

All of the GLM tables report exponentiated coefficients or odds ratios, which refer to the ratio of the odds that medicines or equipment is available in the village clinics after the election, adjusted for the simultaneous effect of the other explanatory variables. Odds ratios greater than one imply a positive

relationship in that increases in the independent variable increase the probability of availability of medicines and equipment. Odds ratios less than one imply a negative relationship in that increases in the variable reduce the probability that medicines and equipment are available.

The second model includes all of the political strategies, and is also estimated using GLM with a logic link (binomial distribution family). As in the first model, the standard errors are clustered by municipality.

$$PublicServices = \beta_1(VoteBuy) + \beta_2(Coerce) + \beta_3(Patronage) + \beta_4(Pork) + \beta_5(C) + \epsilon$$

5.4 Results and Discussion

Consistent with the hypotheses linking one-time pre-election strategies with lower levels of public service delivery, table 5.1 indicates that vote buying is associated with reduced availability of medicine for child and maternal health and availability of medical equipment. In terms of probabilities, the results from the GLM (odds ratios are reported in table 5.2, and the values less than one indicate a negative relationship) indicate that going from having no money offered to voters in a barangay to offering money to 80% of the voters is associated with a significant decrease in the average availability of medicine, vaccine, and equipment. For vaccine and medicine for child health, this decrease is from 46% to 8%. Health equipment availability decreases from 52% to 17%, while vaccines and medicine for child and maternal health decrease from 42% to 7%.

Table 5.1: Vote Buying and Public Service Delivery

	Children	Women	Equipment	Child/Maternal
Vote Buying	-2.575***	-0.585	-2.042**	-3.160**
	(0.901)	(0.650)	(0.915)	(1.389)
Population	0.000850***	0.000479**	0.000262	0.00133***
	(0.000234)	(0.000196)	(0.000193)	(0.000398)
Travel to City	0.00156	-0.00140	0.00647	0.000160
	(0.00674)	(0.00326)	(0.00391)	(0.00970)
Malnourished	0.0744	-0.0417	0.0262	0.0326
	(0.643)	(0.316)	(0.398)	(0.925)
Competition	-1.615*	-1.025**	0.380	-2.641**
	(0.944)	(0.424)	(0.749)	(1.248)
Constant	0.933	0.226	1.125	1.159
	(1.603)	(0.908)	(0.830)	(2.372)
Observations	58	58	58	58
R^2	0.230	0.196	0.220	0.241

OLS with standard errors clustered by municipality; * p < .1 ** p < .05 *** p < .01

Table 5.2: Vote Buying and Public Service Delivery, GLM

	Children	Women	Equipment	Child/Maternal
Vote Buying	0.0351***	0.560	0.0900**	0.0393**
	(0.0378)	(0.927)	(0.108)	(0.0498)
Population	1.000**	1.001**	1.000	1.000**
	(0.000178)	(0.000430)	(0.000202)	(0.000203)
Travel to City	0.996	0.993	1.007	0.994
	(0.00542)	(0.0103)	(0.00421)	(0.00609)
Malnourished	1.149	0.631	1.056	1.164
	(0.639)	(0.491)	(0.441)	(0.674)
Competition	0.165**	0.0302**	1.499	0.0881***
	(0.134)	(0.0473)	(1.189)	(0.0802)
Observations	58	53	58	58

GLM with logit link (binomial family), standard errors clustered by municipality
* p < .1 ** p < .05 *** p < .01

In addition, table 5.3 shows that coercion is also linked to lower levels of public service delivery, using the same dependent variables. The results from the GLM indicate that villages where "fear of reprisal" from politicians was reported by all voters as the least important determinant of vote choice to villages where "fear of reprisal" was ranked 2.5 items higher on average (out of a total of 6 choices) is associated with significant reductions in the average availability of medicine and equipment. The increased prominence of fear of reprisal for voters is associated with a decrease in availability of medicine for child health from 77% to 18%. For women's health medicine, the decrease is from 80% to 8%, and for child and maternal health, the decrease is from 80% to 14%.

Table 5.3: Coercion and Public Service Delivery

	Children	Women	Equipment	Child/Maternal
Coercion	-0.953	-0.744**	-0.396	-1.697*
	(0.614)	(0.352)	(0.454)	(0.879)
Population	0.000966***	0.000643***	0.000362*	0.00161***
	(0.000225)	(0.000197)	(0.000201)	(0.000372)
Travel to City	0.00386	-0.000182	0.00800*	0.00368
	(0.00679)	(0.00375)	(0.00402)	(0.0103)
Malnourished	-0.277	-0.159	-0.146	-0.436
	(0.674)	(0.352)	(0.413)	(0.983)
Competition	-1.059	-1.094*	0.688	-2.153
	(0.943)	(0.549)	(0.819)	(1.417)
Constant	2.501	1.477	1.517	3.978
	(2.331)	(1.405)	(1.417)	(3.453)
Observations	58	58	58	58
R^2	0.202	0.243	0.135	0.237

OLS with standard errors clustered by municipality; * p < .1 ** p < .05 *** p < .01

Table 5.4: Coercion and Public Service Delivery, GLM

	Children	Women	Equipment	Child/Maternal
Coercion	0.338**	0.220***	0.656	0.285***
	(0.154)	(0.125)	(0.301)	(0.123)
Population	1.001**	1.001**	1.000*	1.001***
	(0.000208)	(0.000347)	(0.000218)	(0.000221)
Travel to City	0.999	0.997	1.008*	0.997
	(0.00585)	(0.00864)	(0.00436)	(0.00644)
Malnourished	0.751	0.523	0.852	0.733
	(0.443)	(0.348)	(0.372)	(0.436)
Competition	0.380	0.0585**	2.048	0.242*
	(0.265)	(0.0806)	(1.679)	(0.183)
Observations	58	53	58	58

GLM with logit link (binomial family), standard errors clustered by municipality
* p < .1 ** p < .05 *** p < .01

By contrast, consistent with the hypotheses linking long-term electoral strategies to improved service delivery, table 5.5 shows that patronage is positively associated with public goods provision. The results from the GLM indicate that going from villages where no voters report receiving assistance

from the mayor to villages where 85% of voters report receiving assistance from the mayor increases the availability of medicines for child health from 23% to 50%, and availability of medicines for child and maternal health from 20% to 49%.

Table 5.5: Patronage and Public Service Delivery

	Children	Women	Equipment	Child/Maternal
Patronage	0.948	0.599	0.335	1.547
	(1.399)	(1.037)	(0.819)	(2.297)
Population	0.00102***	0.000529**	0.000381*	0.00154***
	(0.000246)	(0.000200)	(0.000203)	(0.000412)
Travel to City	0.00259	-0.00137	0.00751*	0.00122
	(0.00690)	(0.00331)	(0.00416)	(0.00988)
Malnourished	-0.0923	-0.118	-0.0639	-0.211
	(0.618)	(0.286)	(0.407)	(0.862)
Competition	-1.228	-0.863*	0.607	-2.091
	(1.043)	(0.466)	(0.728)	(1.389)
Constant	0.109	-0.0170	0.532	0.0922
	(1.541)	(0.935)	(0.826)	(2.324)
Observations	58	58	58	58
R^2	0.187	0.197	0.126	0.214

OLS with standard errors clustered by municipality; * p < .1 ** p < .05 *** p < .01

Table 5.6: Patronage and Public Service Delivery, GLM

	Children	Women	Equipment	Child/Maternal
Patronage	5.185*	17.92	1.425	6.135*
	(4.632)	(40.66)	(1.167)	(6.082)
Population	1.001***	1.001**	1.000*	1.001***
	(0.000200)	(0.000490)	(0.000216)	(0.000220)
Travel to City	0.997	0.992	1.008*	0.996
	(0.00553)	(0.00995)	(0.00451)	(0.00612)
Malnourished	0.859	0.451	0.932	0.857
	(0.471)	(0.320)	(0.397)	(0.477)
Competition	0.327	0.0350**	1.889	0.187**
	(0.259)	(0.0595)	(1.366)	(0.159)
Observations	58	53	58	58

GLM with logit link (binomial family), standard errors clustered by municipality
* p < .1 ** p < .05 *** p < .01

Similarly, pork barrel politics as an electoral strategy is also associated with public service delivery (table 5.7). The GLM results indicate that compared to villages with no pork barrel projects in the previous term, villages with at least one project demonstrate significant increases in availability of medicines for child and maternal health, as well as medical equipment. Having a pork barrel project is associated with an increase in average availability of medicine for children from 27% to 50%, an increase of average availability of medicine for child and maternal health from 24% to 47%, and an increase in average availability of health equipment from 34% to 59%. At the same time, these results are not robust to OLS, requiring a more conservative interpretation.

Table 5.7: Pork Barrel Politics and Public Service Delivery

	Children	Women	Equipment	Child/Maternal
Pork Barrel	4.110*	1.855	2.638***	7.624*
	(2.890)	(0.809)	(0.837)	(7.745)
Population	1.001***	1.000*	1.000	1.001***
	(0.000243)	(0.000215)	(0.000193)	(0.000423)
Travel to City	1.004	0.999	1.008*	1.003
	(0.00675)	(0.00299)	(0.00397)	(0.00939)
Malnourished	1.521	1.132	1.291	1.722
	(0.843)	(0.287)	(0.480)	(1.330)
Competition	0.293	0.407*	1.949	0.119
	(0.273)	(0.185)	(1.107)	(0.150)
Observations	58	58	58	58
R^2	0.260	0.239	0.239	0.284

OLS with standard errors clustered by municipality; * p < .1 ** p < .05 *** p < .01

Table 5.8: Pork Barrel Politics and Public Service Delivery, GLM

	Children	Women	Equipment	Child/Maternal
Pork Barrel	2.771*	3.596	2.810***	2.740*
	(1.543)	(3.225)	(0.932)	(1.556)
Population	1.000**	1.001*	1.000	1.000**
	(0.000203)	(0.000460)	(0.000212)	(0.000224)
Travel to City	0.998	0.994	1.009**	0.997
	(0.00574)	(0.0103)	(0.00435)	(0.00635)
Malnourished	1.450	1.043	1.360	1.481
	(0.827)	(0.863)	(0.566)	(0.902)
Competition	0.247	0.0181**	2.127	0.128**
	(0.218)	(0.0350)	(1.257)	(0.127)
Observations	58	53	58	58

GLM with logit link (binomial family), standard errors clustered by municipality
* p < .1 ** p < .05 *** p < .01

Last, table 5.9 presents the results for GLM including all of the different strategies in the specification. Again, this table presents odds ratios, and values below one indicate a negative relationship while values above one indicate a positive relationship. These results largely confirm the results in the estimations in which the strategies were considered separately. Vote buying is associated with decreases in service delivery across all the categories. Coercion is associated with decreases in the availability of medicines for child health, women's health, and child and maternal health. Patronage is associated with increases in the availability of medicines for child health, women's health, and child and maternal health (although the coefficients are not stable across the different specifications, requiring caution in interpreting the results too broadly). Last, pork barrel politics is associated with improved service delivery in all categories except for women's health.

Table 5.9: Electoral Strategies and Public Service Delivery

	Children	Women	Equipment	Child/Maternal
Vote Buying	0.00634***	0.0353*	0.0476**	0.00580***
	(0.00659)	(0.0697)	(0.0719)	(0.00746)
Coercion	0.156***	0.142***	0.413	0.128***
	(0.0806)	(0.0756)	(0.242)	(0.0593)
Patronage	5.805*	23.53*	1.490	6.715*
	(5.280)	(44.68)	(1.262)	(6.992)
Pork Barrel	2.207*	2.888	2.537**	2.087*
	(0.943)	(2.103)	(0.981)	(0.918)
Population	1.000	1.001*	1.000	1.000*
	(0.000183)	(0.000439)	(0.000197)	(0.000211)
Travel to City	0.997	0.993	1.007*	0.996
	(0.00474)	(0.00780)	(0.00380)	(0.00522)
Malnourished	0.755	0.630	1.084	0.700
	(0.346)	(0.446)	(0.376)	(0.334)
Competition	0.395	0.0297*	2.545	0.226*
	(0.295)	(0.0562)	(2.234)	(0.173)
Observations	58	53	58	58

GLM with logit link (binomial family), standard errors clustered by municipality

* p < .1 ** p < .05 *** p < .01

5.5 Conclusion

There is no doubt that non-programmatic electoral strategies are harmful for democratic accountability, but there is considerable less consensus on the economic implications of such strategies. There is a tendency to conflate the various strategies in the literature (see, e.g. Nichter (2013) or Hicken (2011) for an explanation of the differences between vote buying and clientelism), and subsequently make it difficult to establish that these strategies have different implications for economic outcomes. In this framework, strategies that rely on long-term solutions to political commitment problems are associated with public service delivery after the elections, while strategies that are limited to pre-election period interactions with voters are associated with lower levels of public service delivery after the elections.

In terms of policy implications, one problem is that policy reforms often focus on one strategy at a time, without consideration for how these strategies can substitute for each other and the subsequent implications for overall welfare. An approach that focuses on illegal and non-programmatic electoral strategies as a menu of options for politicians can aid with the design of initiatives for addressing these strategies. For example, moving to electronic voting may successfully reduce electoral fraud and bribing of election commission officials, but it may also have the unintended effect of increasing illegal electoral strategies targeted directly at voters. In fact, according to many political operatives in the Philippines, the change to electronic voting in the 2010 elections increased the reliance on vote buying and coercion.

Furthermore, understanding the different implications of these strategies highlights the need to prioritize efforts to address the most harmful strategies. There has been a recent movement in the Philippines to get rid of pork barrel politics by abolishing the practice of giving legislators discretionary funds (PDAF). This is in response to a recent corruption scandal involving a businesswoman who coordinated the theft of an estimated P10 billion from discretionary funds, diverting the money to her personal accounts

and to those of politicians involved.[8]. At the same time, despite the understandable outrage, the results put forward in this paper suggest caution in proceeding with the plan. Reducing the ability of politicians to run on pork barrel politics would be beneficial to society if the alternative to pork barrel politics is programmatic politics. However, there is no indication that this would be the case. More research is needed to understand not only the economic implications of these strategies, but also the potential policy implications of addressing one undesirable electoral strategy without regard for the potential alternative strategies. In the case of eliminating pork barrel politics in the Philippines, for example, one possibility is that politicians would merely switch to vote buying and coercion.

As a result, policy interventions are better directed towards facilitating mechanisms for addressing problems of political commitment and fostering long-term relationships between politicians and voters. This includes government initiatives to support and strengthen political party institutions and voter education programs to provide voters with the information needed to be able to make meaningful political choices and hold politicians accountable.

[8]Carvajal, Nancy C. (July 12, 2013). "NBI probes P10-B scam". *Philippine Daily Inquirer*. Retrieved September 1, 2013

Bibliography

Ames, Barry. 2000. *The Deadlock of Democracy in Brazil*. Ann Arbor: University of Michigan Press.

Apicella, Coren, Frank Marlowe, James Fowler and Nicholas Christakis. 2012. "Social Networks and Cooperation in Hunter-Gatherers." *Nature* 477:497–501.

Ashforth, Adam. 2009. "Ethnic Violence and the Prospects for Democracy in the Aftermath of the 2007 Kenyan Elections." *Public Culture* 21(1):9–19.

Azfar, Omar, Tugrul Gurgur, Satu Kahkonen, Anthony Lanyi and Patrick Meagher. 2000. "Decentralization and Governance: An Empirical Investigation of Public Service Delivery in the Philippines.".

Baland, Jean-Marie and James A. Robinson. 2008. "Land and Power: Theory and Evidence from Chile." *American Economic Review* 98(5):1737–65.

Bardhan, Pranab. 2002. "Decentralization and Governance in Development." *Journal of Economic Perspectives* 16(4).

Bardhan, Pranab and Dilip Mookherjee. 2000. "Capture and Governance at Local and National Level." *American Economic Review* 90(2):135–139.

Bardhan, Pranab and Dilip Mookherjee. 2006. "Decentralisation and Accountability in Infrastructure Delivery in Developing Countries." *The Economic Journal* 116(January):101–127.

Barkan, Joel and Michael Chege. 1989. "Decentralising the State: District Focus and the Politics of Reallocation in Kenya." *The Journal of Modern African Studies* 27:431–453.

Baum, Matthew A. and David A. Lake. 2003. "The Political Economy of Growth: Democracy and Human Capital." *American Journal of Political Science* 47(2):333–347.

Berman, Eli, Jacob Shapiro and Joseph Felter. 2011. "Can Hearts and Minds Be Bought? The Economics of Counterinsurgency in Iraq." *Journal of Political Economy* 119(4):766–819.

Besley, Timothy and Torsten Persson. 2010. "State Capacity, Conflict, and Development." *Econometrica* 78(1):1–34.

Bowler, Shaun, David Farrell and Richard Katz. 1999. Party Cohesion, Party Discipline, and Parliaments. In *Party Discipline and Parliamentary Government*, ed. S. Bowler, D.M. Farrell and R.S. Katz. Columbus: Ohio State University Press.

Brancati, Dawn and J.L. Snyder. 2011. "Rushing to the Polls: The Causes of Premature Postconflict Elections." *Journal of Conflict Resolution* 55(3):469–492.

Bratton, Michael. 2008. "Vote buying and violence in Nigerian election campaigns." *Electoral studies* 27(4):621–632.

Breza, Emily, Arun Chandrasekhar and Horacio Larreguy. 2013. "Mobilizing Investment Through Social Networks: Evidence from a Lab Experiment in the Field.".

Brusco, Valeria, Marcelo Nazareno and Susan C. Stokes. 2004. "Vote Buying in Argentina." *Latin American Research Review* 39(2):66–88.

Bueno de Mesquita, Bruce, Alistair Smith, Randolph Siverson and James Morrow. 2003. *The Logic of Political Survival*. Cambridge: MIT Press.

Burgess, Robin, Remi Jedwab, Edward Miguel, Ameet Morjaria and Gerard Padro i Miguel. 2013. "The Value of Democracy: Evidence from Road Building in Kenya.".

Calvo, Ernesto and Maria Victoria Murillo. 2004. "Who Delivers? Partisan Clients in the Argentine Electoral Market." *American Journal of Political Science* 48(4):742–757.

Calvo, Ernesto and Maria Victoria Murillo. 2009. "Selecting Clients: Partisan Networks and Electoral Benefits of Targeted Distribution.".

Campos, Jose Edgardo and Joel S. Hellman. 2005. Governance Gone Local: Does Decentralization Improve Accountability? In *East Asia Decentralizes: Making local government work in East Asia*. Washington, D.C.: The International Bank for Reconstruction and Development / The World Bank.

Chege, Michael. 2008. "Kenya: back from the brink?" *Journal of Democracy* 19(4):125–139.

Collier, P. and D. Rohner. 2008. "Democracy, Development, and Conflict." *Journal of the European Economic Association* 6(2):531–540.

Collier, P. and Pedro Vicente. 2008. "Votes and Violence: Evidence from a Field Experiment in Nigeria." *Center for the Study of African Economies Working Paper* .

Collier, Paul and Pedro Vicente. 2012. "Violence, bribery, and fraud: the political economy of elections in Sub-Saharan Africa." *Public Choice* 153(1):117–147.

Coronel, Sheila S., Yvonne T. Chua, Luz Rimban and Booma Cruz. 2004. *The Rulemakers: How the wealthy and well-born dominate Congress*. Manila: Philippine Center for Investigative Journalism.

Cox, Gary W. and Mathew D. McCubbins. 1986. "Electoral Politics as a Redistributive Game." *The Journal of Politics* 48(2):370–389.

Cox, G.W. and M.D. McCubbins. 1993. *Legislative Leviathan: Party Government in the House*. California series on social choice and political economy University of California Press.

Cruz, Cesi and Christina Schneider. 2014. "The Politics of (Undeserved) Credit-Claiming in Poor Quality Information Environments.".

Cruz, Cesi and Philip Keefer. 2013. "The Organization of Political Parties and the Politics of Bureaucratic Reform.".

Desposato, Scott. 2007. How does vote buying shape the legislative arena? In *Elections for Sale: The Causes and Consequences of Vote Buying*, ed. Frederic Schaffer. Boulder, Colorado: Lynn Rienner.

Diaz-Cayeros, Alberto, Beatriz Magaloni and Barry Weingast. 2003. "Tragic Brilliance: Equilibrium Hegemony and Democratization in Mexico.".

Dixit, Avinash and John Londregan. 1996. "The Determinants of Success of Special Interests in Redistributive Politics." *Journal of Politics* 58(4):1132–1155.

Drazen, Allan and Marcela Eslava. 2005*a*. "Electoral Manipulation via Expenditure Composition: Theory and Evidence." NBER Working Paper No. W11085.

Drazen, Allan and Marcela Eslava. 2005*b*. "Electoral Manipulation via Voter-Friendly Spending: Theory and Evidence." *Journal of Development Economics* 92(1):39–52.

Dunning, Thad. 2011. "Fighting and Voting: Violent Conflict and Electoral Politics." *Journal of Peace Research* 55(3):327–339.

Fafchamps, M. and Pedro Vicente. 2009. "Political Violence and Social Networks: Experimental Evidence from a Nigerian Election." *Center for the Study of African Economies Working Paper* .

Fafchamps, Marcel and Julien Labonne. 2012. "Do Politicians' Relatives Get Better Jobs? Evidence from Municipal Elections in the Philippines.".

Fan, C Simon, Chen Lin and Daniel Treisman. 2009. "Political decentralization and corruption: evidence from around the world." *Journal of Public Economics* 93(1):14–34.

Ferree, Karen and James Long. 2013. "Violating the Secret Ballot: The Political Logic of Fraud in Ghana's 2008 Elections.".

Filippov, Mikhail, Peter C. Ordeshook and Olga Shvetsova. 2004. *Designing Federalism: A Theory of Self-Sustainable Federal Institutions*. Cambridge: Cambridge University Press.

Finan, Frederico and Laura Schechter. 2012. "Vote Buying and Reciprocity." *Econometrica* 80(2):863–881.

Fowler, James and Nicholas Christakis. 2010. "Cooperative Behavior Cascades in Human Social Networks." *PNAS* 107(12):5334–5338.

Gibson, Clark and Barak Hoffman. 2006. "Fiscal Governance and Public Services: Evidence from Tanzania and Zambia.".

Gonzalez-Ocantos, Ezequiel, Chad Kiewiet de Jonge, Carlos Melendez, Javier Osorio and David W Nickerson. 2012. "Vote buying and social desirability bias: Experimental evidence from Nicaragua." *American Journal of Political Science* 56(1):202–217.

Gonzalez-Ocantos, Ezequiel, Chad Kiewiet de Jonge, Carlos Melendez, Javier Osorio and David W Nickerson. 2013. "Carrots and Sticks: Experimental Evidence of Vote Buying and Voter Intimidation in Guatemala.".

Granovetter, Mark S. 1973. "The Strength of Weak Ties." *The American Journal of Sociology* 78(6):1360–1380.

Hafner-Burton, Emilie, Susan Hyde and Ryan Jablonski. 2012. "When Do Governments Resort to Election Violence?" *British Journal of Political Science* .

Hasnain, Zahid and Yasuhiko Matsuda. 2011. "The Politics of Power: The Political Economy of Rent-Seeking in Electric Cooperatives in the Philippines.".

Hicken, A. 2007. How Do Rules and Institutions Encourage Vote Buying? In *Elections for Sale: The Causes and Consequences of Vote Buying*, ed. Frederic Schaffer. Boulder, Colorado: Lynn Rienner.

Hicken, Allen. 2011. "Clientelism." *Annual Review of Political Science* 14(1):289–310.

Hicks, Frederic. 1967. "Politics, Power, and the Role of the Village Priest in Paraguay." *Journal of Inter-American Studies* 9(2):273–282.

Hidalgo, Daniel and Simeon Nichter. 2012. "Voter Buying: Shaping the Electorate through Clientelism.".

Hoglund, K. 2009. "Electoral Violence in Conflict-Ridden Societies: Concepts, Causes, and Consequences." *Terrorism and Political Violence* 21(3).

Hoglund, K. and A. Piyarathne. 2009. "Paying the Price for Patronage: Electoral Violence in Sri Lanka." *Commonwealth and Comparative Politics* 47(3):287–307.

Huckfeldt, Robert and John Sprague. 1995. *Citizens, Politics, and Social Communication: Information and Influence in an Election Campaign*. New York: Cambridge University Press.

Huckfeldt, Robert and Ronald La Due Lake. 1998. "Social Networks, Social Capital, and Political Participation." *Political Psychology* 19:567–584.

Hutchcroft, Paul and Joel Rocamora. 2003. "Strong Demands and Weak Institutions: The Origins and Evolution of the Democratic Deficit in the Philippines." *Journal of East Asian Studies* 3:259–292.

Katz, Elihu and Paul F. Lazarsfeld. 1955. *Personal Influence, the Part Played by People in the Flow of Mass Communications*. New York: Free Press.

Keefer, Philip. 2004. "A Review of the Political Economy of Governance: From Property Rights to Vote." *World Bank Policy Research* Working Paper 3315.

Keefer, Philip. 2005. "Democratization and Clientelism: Why are Young Democracies Badly Governed?".

Keefer, Philip and Razvan Vlaicu. 2008. "Democracy, Credibility, and Clientelism." *Journal of Law, Economics, and Organization* 24(2):371–406.

Keefer, Philip and Stuti Khemani. 2008. "When Do Legislators Pass on "Pork"? The Role of Political Parties in Determining Legislator Effort?".

Khemani, Stuti. 2003. "Partisan politics and intergovernmental transfers in India.".

Khemani, Stuti. 2011. "Buying Votes Vs. Supplying Public Goods: Micro-evidence on the Implications of Political Clientelism.".

King, Gary and Langche Zeng. 2001. "Logistic Regression in Rare Events Data." *Political Analysis* 9:137–163.

Kitschelt, Herbert and Steven Wilkinson. 2007. *Patrons, Clients, and Policies*. Cambridge: Cambridge University Press.

Laakso, Liisa. 2007. Insights into Electoral Violence in Africa. In *Votes, Money and Violence: Political Parties and Elections in Sub-Saharan Africa*, ed. A. Mehler, G. Erdmann and M. Basedau. Elanders Gotab.

Labonne, Julien. 2013*a*. "The local electoral impacts of conditional cash transfers: Evidence from a field experiment." *Journal of Development Economics* 104(0):73 – 88.

Labonne, Julien. 2013*b*. "Local Political Business Cycles: Evidence from Philippine Municipalities.".

Labonne, Julien and Robert Chase. 2008. "Do Community-Driven Development Projects Enhance Social Capital? Evidence from the Philippines." *Policy Research Working Paper, The World Bank* 4678.

Lande, Carl H. 1964. *Leaders, Factions, and Parties: the Structure of Philippine Politics*. New Haven: Yale University Press.

Lande, Carl H. 1996. *Post-Marcos Politics : A Geographical and Statistical Analysis of the 1992 Presidential Election*. Institute of Southeast Asian Studies New York: St. Martin's Press.

Larreguy, Horacio. 2012. "Monitoring Political Brokers: Evidence from Clientelistic Networks in Mexico." *EPSA 2013 Annual General Conference Paper 655* .

Lehoucq, Fabrice. 2007. When Does a Market for Votes Emerge? In *Elections for Sale: The Causes and Consequences of Vote Buying*, ed. Frederic Schaffer. Boulder, Colorado: Lynn Rienner.

Lindbeck, Assar and Jorgen Weibull. 1987. "Balanced-budget Redistribution as the Outcome of Political Competition." *Public Choice* 52(3).

Llanto, Gilberto. 2008. "A Review of Build-Operate-Transfer for Infrastructure Development: Some Lessons for Policy Reform.".

Llanto, Gilberto. 2009. "Fiscal Decentralization and Local Finance Reforms in the Philippines.".

Manasan, Rosario and Eden Villanueva. 2006. "Gems in LGU Fiscal Management: a Compilation of Good Practices.".

Mansuri, Ghazala and Vijayendra Rao. 2004. "Community-Based and -Driven Development: A Critical Review." *The World Bank Research Observer* 19(1).

McClurg, Scott. 2003. "Social Networks and Political Participation: The Role of Social Interaction in Explaining Political Participation." *Political Research Quarterly* 56(December):448–64.

McDowell, Allen and Nicholas Cox. 2013. "Stata FAQ: How does one do regression when the dependent variable is a proportion?".
URL: *http://www.ats.ucla.edu/stat/stata/faq/proportion.htm*

Milesi-Ferretti, Gian Maria, Roberto Perotti and Massimo Rostagno. 2002. "Electoral Systems and Public Spending." *The Quarterly Journal of Economics* 117(2):609–657.

Milgrom, Paul, Douglass North and Barry Weingast. 1990. "The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs." *Economics & Politics* 2(1):1–23.

Nichter, Simeon. 2008. "Vote Buying or Turnout Buying? Machine Politics and the Secret Ballot." *American Political Science Review* 102(1):19–31.

Nichter, Simeon. 2013. "Conceptualizing Vote Buying.".

Nickerson, David W. 2008. "Is Voting Contagious? Evidence from Two Field Experiments." *American Political Science Review* 102:49–57.

North, Douglass C. and Barry R. Weingast. 1989. "Constitutions and Commitment: The Evolution of Institutional Governing Public Choice in Seventeenth-Century England." *The Journal of Economic History* 49(4):803–832.

Olson, Mancur. 1993. "Dictatorship, Democracy, and Development." *American Political Science Review* 87(3):567–576.

Oribe, Romel. 2004. "Election as Price War.".

Papke, L.E. and J. Wooldridge. 1996. "Econometric methods for fractional response variables with an application to 401(k) plan participation rates." *Journal of Applied Econometrics* 11:619–632.

Persson, Torsten and Guido Tabellini. 2003. *The Economic Effect of Constitutions*. Cambridge: MIT Press.

Platteau, Jean-Philippe and Anita Abraham. 2002. "Participatory Development in the Presence of Endogenous Community Imperfections." *Journal of Development Studies* 39(2):104–136.

Popkin, Samuel. 2007. "Changing Media and Changing Political Organization: Delegation, Representation, and News." *Japanese Journal of Political Science* 8(1).

Powis, Benjamin. 2007. "Systems of Capture: Reassessing the Threat of Local Elites." *World Bank Social Development Papers: South Asia Series* (109).

Putnam, Robert. 2000. *Bowling Alone*. New York: Simon and Schuster.

Querubin, Pablo. 2010. "Family and Politics: Dynastic Persistence in the Philippines.".

Robinson, James A and Ragnar Torvik. 2009. The real swing voter's curse. Technical report National Bureau of Economic Research.

Rueda, Miguel. 2013. "Buying Votes with Imperfect Local Knowledge and a Secret Ballot.".

Saiegh, Sebastian. 2009. "Recovering a Basic Space from Elite Surveys: Evidence from Latin America." *Legislative Studies Quarterly* 34(1).

Schady, Norbert. 2000. "The Political Economy of Expenditures by the Peruvian Social Fund (FONCODES), 1991-95." *The American Political Science Review* 94(2):289–304.

Schaffer, Frederic. 2002. "Disciplinary Reactions: Alienation and the Reform of Vote Buying in the Philippines.".

Schaffer, Frederic and Andreas Schedler. 2007. What is Vote Buying. In *Elections for Sale: The Causes and Consequences of Vote Buying*, ed. Frederic Schaffer. Boulder, Colorado: Lynn Rienner.

Sidel, John. 2004. Bossism and democracy in the Philippines, Thailand, and Indonesia: towards an alternative framework for the study of 'local strongmen'. In *Politicising democracy: the new local politics of democratisation*, ed. John Harriss, Kristin Stokke and Olle Tornquist. Basingstoke, UK: Palgrave Macmillan pp. 51–74.

Sidel, J.T. 1999. *Capital, Coercion, and Crime: Bossism in the Philippines*. Contemporary issues in Asia and the Pacific Stanford University Press.

Simpser, A. 2013. *Why Governments and Parties Manipulate Elections: Theory, Practice, and Implications*. Political Economy of Institutions and Decisions Cambridge University Press.

Stokes, Susan C. 2005. "Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina." *The American Political Science Review* 99(3):315–325.

Szwarcberg, Mariela. 2011. "Who Monitors? Clientelism and Democratic Representation in Argentine Municipalities.".

Teehankee, Julio. 2006. Electoral Campaigning in the Philippines. In *Election Campaigning in East and Southeast Asia: Globalization of Political Marketing*, ed. Christian Schafferer. Hampshire: Ashgate Publishing Limited.

Tiebout, Charles M. 1956. "A Pure Theory of Local Expenditures." *The Journal of Political Economy* 64(5):416–424. Article type: Full Length Article / Full publication date: Oct., 1956 (195610). / Languages: EN / Copyright 1956 The University of Chicago Press.

Treisman, Daniel. 1999. "Political Decentralization and Economic Reform: A Game-Theoretic Analysis." *American Journal of Political Science* 43(2):488–517.

Vicente, Pedro and Leonard Wantchekon. 2009. "Clientelism and Vote Buying: Lessons from Field Experiments in African Elections." *Oxford Review of Economic Policy* 25(2):292–305.

Wang, Chin-Shou and Charles Kurzman. 2007. The Logistics: How to Buy Votes. In *Elections for Sale: The Causes and Consequences of Vote Buying*, ed. Frederic Schaffer. Boulder, Colorado: Lynn Rienner.

Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. Cambridge: Cambridge University Press.

Wilkinson, S.I. and C.J. Haid. 2009. "Ethnic Violence as Campaign Expenditures: Riots, Competition, and Vote Swings in India." *Working Paper, Department of Political Science, Yale University* .

Wilkinson, Steven. 2006. *Votes and violence: Electoral competition and ethnic riots in India*. Cambridge University Press.

World Bank. 2011. Curbing Fraud, Corruption, and Collusion in the Roads Sector. Technical report World Bank.

Zellner, Arnold. 1962. "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias." *Journal of the American Statistical Association* 57(298):348–368.