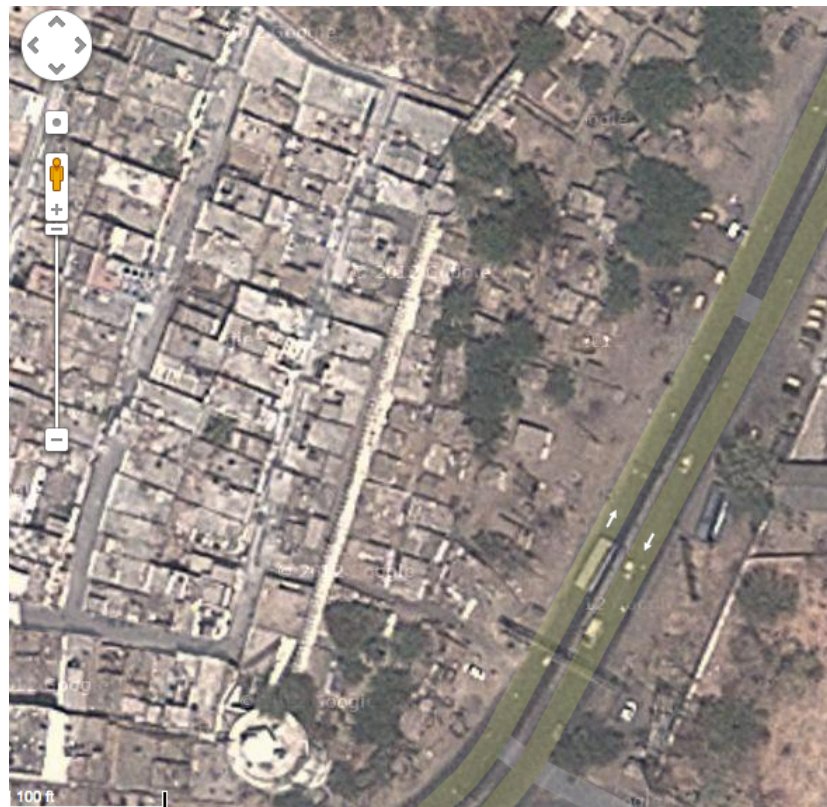


Note to workshop participants:

This is the first paper from a large, multi-year research project on politics and property rights in Indian slums. The project involves research in Udaipur, India where Rojo and Wibbels have recently completed a third wave of household surveys across 30 slums. This paper aside, those surveys inform Rojo's ongoing dissertation work. A larger branch of the project is located in Bangalore and involves myself, Anirudh Krishna (Duke), M.S. Sriram (IIM-Bangalore), and the Jana Urban Foundation. Entitled "[Pathways to Prosperity](#)" that research has so far conducted 130 neighborhood surveys and household surveys in 36 slums. Above and beyond basic neighborhood information, the neighborhood surveys have also geocoded slum boundaries. We are finalizing a MOU with the India Space Research Organisation, which will use the geo-referenced boundaries and neighborhood characteristics to automate the process of identify slums using high-resolution satellite imagery. All of this work is aimed at: a) categorizing slums according to their physical and legal status; b) tracking their physical evolution through time via satellite imagery, which shows upgrades in household investments (as indicated by roof composition and building height) and public infrastructure (through electrical lines, street paving, etc.); and c) understanding the causal process whereby some slums achieve legal recognition and public services, while many others do not. This branch of the project will conduct another round of household surveys in 32 slums in April-June. In the future, we will rely on remote-sensed evidence of slum upgrading to trigger smaller household surveys to better understand the politics underpinning neighborhood change.

Finally, though we couldn't work it into the paper, the satellite image below presents a motivating puzzle for this paper. The two "slums" on each side of the old city wall were settled by untouchables at the same time about 35 years ago. As the image shows, the left side of the wall has concrete roads and structures; everyone has access to water, and most families send their children to a nearby school. On the right-hand side of the wall, homes are tiny and made of mud brick; there is one small water spigot located at the bottom of the image, and almost no parents send their kids to school.



Political Networks, Clientelism and Public Goods: Evidence from Slums in Udaipur, India
(Draft 1.0)

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Abstract

We develop an argument linking the social density of neighborhoods to their ability to exchange votes for basic public services. We begin with resource-constrained politicians who allocate public investments to those neighborhoods where they have strong “vote banks”; we argue that slum-level social and political networks condition the capacity of local voters to coordinate on campaign and electoral behavior that define whether or not they can function as successful vote banks. We also provide evidence that many of the key assumptions underpinning standard, aspatial models of distributive politics do not hold. Our evidence comes from two rounds of surveys in 30 slums in Udaipur, India.

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1. Introduction

Rapid urbanization in the developing world has produced a boom in the population of slums in and around cities. Yet access to basic public services—water, sewage, and the like—varies hugely across slums, even in the same city. In this paper, we argue that the spatial proximity of poor voters in slums has important implications for urban politics and suggests the need for a revision to the standard model of clientelism that emphasizes individual, one-off exchange of private goods for votes. We argue that the spatial concentration of the poor in slums accentuates the importance of local public goods in voters' electoral behavior and obviates the need for individual-level monitoring of clientelistic exchanges, this latter of which has been central to much recent empirical work. We explain variation in slum-level access to public services with reference to resource-constrained politicians who allocate public investments to those neighborhoods where they have strong “vote banks”; we argue that slum-level social and political networks condition the capacity of local voters to coordinate on campaign and electoral behavior that define whether or not they can function as successful vote banks.

The typical model of clientelism suggests that politicians provide private material benefits to (usually poor) voters in exchange for their vote; these exchanges are one-shot and occur *de novo* with each election. This basic vision of clientelism pervades the literature (see, for instance, Levitsky 2003, Calvo and Murillo 2004, Stokes et al 2004, Kitschelt and Wilkinson 2007, Remmer 2007, Nichter 2010), even as important recent revisions suggest that exchanges are iterative (Stokes 2005), that there is an important principal-agent problem between parties and vote brokers (Stokes et al. 2013), and that partisan networks shape the information available to vote brokers (Cruz 2014; Calvo and Murillo 2013). All of these represent important insights, but much of the focus remains on private exchange rather than the public goods like access to water, public toilets, or a health clinic that loom large in the lives of the urban poor.

We argue that studying social networks in slums helps explain why a great deal of political exchange involves neighborhood, or club, goods rather than individual-level material benefits. Local political brokers control more than bags of rice and beans; they also oftentimes control access to electricity, a water main, the provision of a local health clinic, and the like. We expect access to these local public goods plays a crucial role in political exchange, both in incentivizing members of neighborhood social networks to monitor each other and in ensuring that slum-level electoral support is sufficiently strong to warrant access to neighborhood-level benefits. That the case, residents in localities have incentives to coordinate as a group and support the same candidate so that their community will be rewarded with local public goods.

We test our ideas with reference to two waves of surveys in 28 slums in Udaipur, India. The first round of surveys was conducted in June of 2013 and covered all of the households in four slums. While most surveys involve sampling a population, network research necessarily requires a complete picture of the relevant network.¹ The only way to get such a picture in any given slum is to survey all of the households in the community. The survey asked a series of questions that identify the social and political networks of respondents. The second round of surveys relied on traditional household sampling, took place during the state elections of November 2013, and ask questions bearing on the election, electoral behavior and slum-level social and political activism. Our findings are preliminary, but they suggest that formal politicians, vote monitoring, and the exchange of private benefits for individual votes represent minor issues for most of our respondents; on the other hand, slum-level characteristics, including the social and political density of slum networks have important

¹ Research on social networks suggests that network characteristics can be severely mischaracterized in the presence of sampling.

implications for how the urban political process targets both private and public goods. Our argument and findings are broadly consistent with Auerbach (2014), who also draws his evidence from Indian slums. Yet while Auerbach focuses on partisan networks and how poor citizens articulate with them, we emphasize the role of local social networks in defining the capacity of parties to mobilize citizens.

We organize the paper as follows: In the following section we review the state-of-the-art on electoral clientelism and provide some descriptive evidence suggesting that key ingredients of traditional clientelistic exchange are absent in Udaipur's slums; thereafter, we develop our argument linking slum-level political networks to access to public services; in the fourth section, we describe our research design and surveys; in the fifth section we present results before concluding with broader implications for the study of politics and public goods.

2. Clientelism and the Politics of the Poor

Studies on clientelism emphasize the direct exchange of material benefits for political support between voters and politicians (Auyero 1999; Auyero 2000; Brusco, Nazareno and Stokes 2004; Calvo and Murillo 2004; Chandra 2004; Kitschelt 2000; Kitschelt and Wilkinson 2007; Krishna 2007; Levitsky 2003; Magaloni and Estevez 2007; Nichter 2008; Remmer 2007; Stokes 2005, among many other authors). Initially, scholars modeled clientelistic exchange as single-shot exchanges on a spot market and underscored the exploitative aspect of the asymmetric relationship between voters and politicians. Auyero (1999) helped draw attention to the mutually beneficial side of clientelism, and subsequent work has modeled clientelism as a repeated game in which voters provide political support and participation in rallies in exchange for handouts, access to subsidies, welfare programs, health assistance, etc. These linkages are part of a problem-solving network, and the ongoing nature of the relationship serves to resolve crucial information problems inherent to clientelistic exchange². In this account, clientelistic relations are ongoing, durable and "relational" (Nichter 2010).

Extant work also offers insight into *which* voters will be targeted by clientelistic machines. Building on Dixit and Londregan (1996), most work posits voters who maximize a joint function of ideological proximity to their preferred party and private, excludable benefits from parties. Due to diminishing returns of consumption, low-income constituencies are expected to be the principal targets of clientelism because they derive higher marginal utility from handouts. There is now a substantial body of supporting evidence supportive of this claim (Brusco, Nazareno and Stokes 2004; Calvo and Murillo 2004; Remmer 2007; Keefer 2007). Income aside, there are important theoretical disagreements as to the role of ideology. While Dixit and Londregan (1996) and Stokes (2005) suggest that ideologically indifferent voters represent the best investments in private benefits, Cox and McCubbins (1986) suggest that core supporters should receive the most benefits, and Nichter echoes that argument with the suggestion that election campaigns are primarily aimed at motivating turnout among the like-minded rather than convincing the swing voter. Despite a bit of evidence to the contrary (Lindbeck and Weibull, 1987; Dixit and Londregan, 1996; Stokes, 2005), the evidence is overwhelmingly supportive of the core voter hypothesis, even if much of that evidence has very weak claims to having identified a causal effect and a growing body of empirical evidence that politicians target benefits to core supporters (Hsieh et al. 2011; Murillo and Calvo 2004; Bickers and Stein 2000).

² Most importantly, there is a time inconsistency problem inherent in the exchange of private benefits for votes. If parties deliver benefits before the election, they require some means of observing how voters actually vote in order to hold them accountable. If parties promise to deliver benefits after the election, the voter must have some confidence that they will do so if, in fact, the voter votes as dictated by the exchange. Both problems can be resolved by iterated relationships.

Our departure from standard theorizing is rooted in three observations supported with evidence from slums in Udaipur: First, the urban poor place considerable value on local public goods such as clean water and better sanitation. These are not private goods, and their provision is not particularly ideological; indeed, ideology seems to play almost no role in vote choice. Thus, the politics of local public goods provision must play a central role in any model of electoral behavior among the poor, and this implies a revision of extant models that emphasize a tradeoff between private benefits and ideology that slopes sharply in favor of the former at the expense of the latter. Second, if the exchange of excludable goods for votes is to play an important role in urban politics, poor voters must consider the offer of such exchanges to be credible. We find very little evidence that promises of private goods are credible. In contrast, promises of local public goods, at least sometimes, are. That parties and brokers sometimes find it in their interest to follow through on campaign promises to deliver local public goods suggests that they matter to voters and are an important tool for winning votes. Third and finally, if the votes-for-benefits exchange is to work, parties or brokers must be able to monitor the vote. Whether private benefits precede or follow elections, parties need the capacity to know which voters have voted as required by the exchange. Indeed, a great deal of research has focused on how clientelistic exchange is self-enforcing in the context of the Australian ballot (Gingerich 2013). Yet, poor voters in Udaipur (and the rest of India, as far as we can tell) overwhelmingly consider the vote private and think it would be incredibly difficult for politicians or even their neighbors to find out how they filled out their ballot.

Figure 1a and 1b provide some descriptive evidence that voters place considerable weight on local public goods. We asked respondents to prioritize a list of factors that government might help them with. Figure 1a shows the share of respondents that mentioned those responses as among their top two. Sewage and access to water, two quintessential local public goods top the list. Figure 1b provides descriptive data on responses to a question asking voters to prioritize reasons for how they vote; the options were designed to assess the importance of private benefits, community services, partisanship, valence considerations, etc. Again, this shows the share of respondents who placed an option among its top two. “The private benefits that my family is receiving” receives substantial support, but “the services that my community is receiving” receives the highest support of all. Consistent with Kitschelt (2000) and Cox and McCubbins (1986), these responses suggest the need to reintroduce “pork”, club goods, and local development schemes into voters’ utility functions, since most work posits a tradeoff off between strictly private goods and ideology. Indeed, many localized political exchanges involve transactions of votes and other forms of political loyalty for slum-level outcomes, such as official slum recognition and public services (Benjamin and Bhuvanewari 2001). The exchange of local public goods for votes does not fit neatly into any of the mobilizational strategies typically imputed to parties (Thachil 2011).⁴ Since these local benefits inevitably imply long-term planning, the study of clientelism in urban slums requires adopting the relational view of clientelism (Nichter 2010). The nature of political exchange remains ongoing and incomplete over decades during which recognition, household investments and political exchange shape slum conditions and access to the public services that are so crucially important to voter wellbeing.

Figure 1a & 1b Here

³ See Larcinese, Snyder and Testa (2013) for a discussion of the endogeneity inherent in standard attempts to empirically assess models of distributive politics.

⁴ Thachil reviews three traditionally understood strategies for mobilization—programmatic, clientelistic, and identity-based. To this he adds a fourth, service-based, which echoes our own focus here.

Figure 2 provides descriptive evidence that while large majorities of voters receive promises of private gifts from parties and politicians (68%), they almost never consider them credible. On the other hand, while large majorities also receive electoral promises of better local community services (84%), respondents report that politicians are much more likely to follow through on this front.⁵ One implication is that the link between credible commitments and political exchange bear more fully on neighborhood-level public goods than they do on vote buying. Indeed, as described in greater detail below, a survey list experiment we designed to assess the incidence of vote selling amongst respondents yielded a null, which suggests that if the poor are exchanging votes for anything, it is likely to be local public services.

Figure 2 Here

Finally, Figure 3 provides descriptive evidence that poor voters in the slums of Udaipur consider their votes to be private. This is important because any exchange of votes for private goods requires some sort of technology for eliciting how voters behave in the booth. Yet whether the survey question asks about the capacity of formal politicians or informal neighborhood leaders to discover how they have voted, the overwhelming majority of respondents believe that it would be difficult or very difficult to discover how they voted. Voters, of course, could be mistaken on a massive scale, but more likely this implies that the spot market for votes is not a particularly important aspect of elections for these voters. Below, we suggest that the relevant level of partisan monitoring occurs at the level of the voting booth, information that politicians and vote brokers use when making distributive allocations of public and private goods across *slums*, as distinct from specific individuals within slums.

Figure 3 Here

3. Political Networks and Public Goods

A growing body of work emphasizes the network-characteristics of political parties and the communities that support them. Stokes et al. (2013), for instance, emphasize that local vote brokers are embedded in broader partisan networks that shape the incentives of parties, politicians, and brokers themselves; this echoes longstanding findings in the Indian context (Krishna 2002, 2011). Likewise, Calvo and Murillo (2013) emphasize the extent to which individual voters are embedded in partisan networks and how this conditions their access to excludable benefits. In both Stokes et al. and Calvo and Murillo, the key network characteristics bear on parties and vote brokers; the key connections are between brokers and parties in the former case and between voters and parties in the latter case. In contrast, we emphasize the social and political networks among poor voters and the local leaders in poor neighborhoods. Rather than parties, we focus on the social and neighborhood contexts that shape distributive politics in urban settings.

Closest to our own approach is Cruz (2013) and Auerbach (2014). The former suggests that political brokers target clientelistic benefits to individuals who are the most socially connected, since it is those individuals who can persuade more of their neighbors. Cruz highlights the effect of voters' social networks on politicians' strategies for determining whom in poor communities to target for coercion or for vote buying. Through a survey in Philippines, she found a positive association between

⁵ We asked the following questions: a) Candidates for political office often promise benefits, like food, drinks, clothes or money to attract votes. In your experience, have the following people followed through with their promises of these gifts for you or your family?; b) Candidates for political office often promise benefits to local communities, such as improved roads, access to water, or electricity to attract votes. In your experience, have the following people followed through with their promises to improve services for your community?

being the target for vote buying and number of social ties. We differ from Cruz in emphasizing that the crucial targeting bears on public rather than private goods and that this implies political exchanges at the slum level rather than the individual level. Closer still to our approach is Auerbach's (2014) argument and evidence that denser slum-level partisan networks provide a means for the poor to successfully articulate their demands vis-à-vis government. While he is focused on how parties organize slums, we focus on how social relationships among voters condition the success of communities to bargain with parties.

We begin with the simple observation that poor voters tend to be clustered together in neighborhoods, and this simple fact has important implications for how politics operates. We conceptualize slums as social networks characterized by voters and local political brokers who know each other (Huckfeldt 1983). That clientelism is embedded in a neighborhood context means that it should be studied at the slum level using group-based models rather than as a series of aspatial, individual-level exchanges: an entire settlement receives water, electricity or a public toilet at the same time; no individuals can be rewarded for their political behavior by receiving them earlier. If we understand neighborhoods (e.g. slums) as social networks, their political and social organization is very much relevant for the study of clientelism and has important implications for who among the poor will receive access to basic public services.

We conceptualize the urban poor as maximizing some joint function of private consumption and community-level public goods, including improved sewage, water supply, electricity, etc. We conceptualize parties and their local leadership as vote-maximizing machines that face a budget constraint. They can provide private benefits (food, liquor, etc.) at low cost and/or slum-level public goods, including official recognition, public infrastructure and the like, at a higher cost. The budget constraint implies that parties must make choices about which slums to target with what combination of private and public goods. Because the provision of local public goods is relatively expensive, parties will only provide them when they can be sure of gathering a large share of support from any given slum consistently over a period of years. Serving as a large vote bank for a single party represents a collective action problem for citizens who live in slums. If each slum resident pursues their individual interest and votes however they like, the slum leadership or vote broker cannot credibly commit to supplying support for a party, and the party will not receive public services. If the community can solve this collective action problem, its ability to attract local public goods goes up.

Understanding political exchange, therefore, requires jointly understanding the incentives of politicians and the capacity of slum residents to solve their collective action problem. Politicians control the delivery of more than private goods; they also allocate important neighborhood services, including electricity, water, health clinics, etc. Given the large costs of these neighborhood public goods, politicians are unlikely to provide them to areas where their support is weak, marginal or inconsistent. This claim is consistent with "core voter" models of distributive politics (Cox and McCubbins 1989), albeit with an emphasis on slum-level vote shares rather than individual voters. The greater the electoral support in any given neighborhood, therefore, the stronger the incentives of politicians to extend the provision of expensive public services. That being the case, a virtuous spiral can emerge: residents in localities have incentives to coordinate as a group and support the same candidate so that their community will be rewarded with ever greater local public goods, including faster slum recognition.

The prospect of receiving public goods, however, depend on everyone in the slum working together and is, therefore, subject to a collective action problem. Under what conditions might slums solve this problem? We expect that this collective action problem is more easily resolved in tightly knit

communities characterized by dense social networks.⁶ Dense social networks are characterized by a large number of ties among their members and their local leaders or vote brokers. Consistent with well-established theorizing on networks (Huckfeldt 1983; Uzzi and Spiro 2005; Ward et al 2011), dense networks in slums provide two crucial mechanisms for collaboration and coordinating collective action. First, they provide a monitoring technology that provides information on how members of the network behave. While it is very difficult for formal parties and other outsiders to know whether individual slum residents mobilize on their behalf or vote in a particular way, it is much easier for tightly knit neighbors and local leaders who live in those communities to know these things about each other. A dense social network, moreover, provides a means of efficiently transmitting that information to other members of the neighborhood. Second, dense social networks provide a mechanism for sanctioning community members who deviate from socially expected behavior. In the context of slum politics, this might involve an inability to extract household benefits from neighborhood leaders or vote brokers. In short, the information and sanctioning provided by dense networks provide the tools for overcoming slum-level collective action and exchanging an entire vote bank for key public services.

To be clear, we are not positing that dense slum-level networks represent some sort of Putnam-esque (1995), idealized manifestation of social capital. Researchers have described social capital in a multitude of ways (see Durlauf and Fafchamps 2005 for a review), but it is typically defined as having normatively appealing, cooperative characteristics. Slum networks may well reflect cooperative behavior, but they also reflect the coercion that is inherent in well-organized slum leaders threatening residents by withholding of household aid in the event they suffer from a crisis. Our interviews and surveys indicate that networks are built on a combination of cooperation and coercion.

Theorizing along these lines provides a series of original hypotheses bearing on variation across slum networks and slum types. Generally speaking, we expect slums with denser social and more centralized political networks to produce strong and durable leaders who are able to trade slum votes for public services. Where there are tight communities represented by clear leadership, we expect citizens to coordinate their political behavior—at the ballot box and in collective action—in a way that facilitates credible commitments of support for parties in exchange for local services. These local public goods should come at the expense of individual-level, election-based exchange, if we assume that local political brokers have a budget constraint. Contrarily, slums with weak social ties should show more evidence of individual-level exchange at the expense of local public goods. Thus:

H1: Slums with denser social networks will evince more single-party dominance as a result of the capacity of slum residents to coordinate their votes.

H2: Slums that deliver larger vote shares are more likely to receive basic public services.

H3: Parties will target core *slums* with public goods, not core *voters*.

Combining these hypotheses leads to the expectation that centralized political networks and dense social networks might be consistent both with *less* competitive slum politics and *improved* prospects for public goods, a result of greater bargaining power in the arena of local electoral politics. This runs contrary to some distributive models of politics (cite) and a broader literature on the benefits of political competition (Geddes 1994; Alt and Lassen 2003). Though we have not thought through the basic issues yet, we expect that these differences emerge from the scale of political competition. When it is local, non-ideological and oriented toward neighborhoods, parties rely on neighborhood-level

⁶ In more formal network analysis parlance, the density of networks is measured by the average social distance among their members, the frequency of connections, and assorted summary indicators of centrality.

calculations that reward locally uncompetitive outcomes. Obviously, these uncompetitive micro environments can generate weak incentives for slum leaders to engage in serious effort for their constituents, but the density of local networks can serve as a check on egregious shirking. The benefits of competition seem likely to grow as the scale of elections and the policy outputs involved increase; as one moves from city to state and national elections, parties are uninvolved in neighborhood targeting as both the pork and programmatic policies have broader geographic implications. Moreover, as the social and geographic distance between the electorate and their representatives increase, face-to-face relations become an improbable means of monitoring representatives from uncompetitive districts. In these settings, competition is probably a more important motivator of legislative effort than dense social relations.

We believe that conceptualizing slums as social and political networks resolves a number of shortcomings in extant approaches to clientelism. First, persistent social ties are necessary in order to allow for exchange to occur over time as part of an iterated game that delivers private *and* public rewards to slum residents; this is consistent with the observation that slums often have partisan identities and those identities rarely change, both of which are hard to explain if clientelism is understood as a one-shot game. Second, most work on clientelism and the politics of the poor focuses on the delivery of private goods in exchange for votes on election day. Yet often politicians deliver more than household benefits to poor constituencies. Indeed, a great deal of political exchange involves neighborhood, or club, goods rather than individual-level material benefits. Given the importance of water, sewage and access to health to citizens in slums, we expect access to these local public goods plays a crucial role in slum politics, both in incentivizing members of neighborhood networks to monitor each other and in ensuring that slum-level electoral support is sufficiently strong to warrant access to improved services for the neighborhood. Third, understanding political exchange as a slum-level phenomenon allows us to resolve one of the thorniest problems in the study of clientelism, namely that there is a time-inconsistency problem between politicians and voters. If leaders deliver material benefits ahead of the election (as they must in this case, since official decisions about successive steps in the tenure security process can rarely be timed to coincide with election cycles), then voters have incentives to do whatever they want in the polling booth; if parties deliver benefits after the election, they have incentives to renege on prior promises, and clientelism breaks down. Neighborhood social networks, however, allow local leaders to outsource the monitoring of voters to other members of the social network, and this social pressure can resolve several of the information problems inherent to clientelism. Fourth and finally, we contribute to a recent stream of work that deemphasizes the importance of formal political parties and politicians at the expense of local voter brokers and slum leaders who are crucial intermediaries between the poor and politicians.⁷ The very concept of poor neighborhoods as “vote banks”, so common in the developing world, inevitably rests on the capacity of local leaders or brokers to coordinate how neighbors vote (Mitra 1992; Krishna 2002). The nature of slum-level networks is likely to have important implications for the incentives and capabilities of local leaders to do so.

4. Empirical Setting

Our empirical setting is the city of Udaipur, the capital city of Udaipur district in Rajasthan. It is a small city of approximately 600,000 where approximately 10 percent of the population lives in 30 slums. As in all Indian cities, it is governed by a municipal corporation that is elected from wards—50 of them in the case of Udaipur. Over recent years, the city has been governed with a substantial BJP majority. This fact is important in the analysis below because the municipal corporative provides

⁷ In our 2013 pre-election survey, almost no respondents reported having seen politicians campaigning in their neighborhoods.

most key public services, and it is distributive politics at that level that shape service quality across slums.

Our empirics draw from two household surveys. The first, which we refer to as a “network” survey”, was in the field in June and July of 2013 and sampled every household in four slums (n=850). Collecting network data presents very particular challenges. While the typical tools of surveys and interviews are well established, the sampling strategies appropriate for networks are just developing (Handcock and Gile 2010). On one hand, network analyses can be very sensitive to sampling, since missing nodes and links can seriously distort key characteristics of a network (Kossinets 2006). On the other hand, collecting comprehensive data on network membership and ties is incredibly exacting, since it requires collecting information on the universe of membership and connections. That the case, we relied on a preliminary neighborhood survey of all the slums and qualitative interviews to inform the selection of four modest-sized slums that reflect diverse public service access to serve as settings for the network survey.⁸ This round of surveys yielded 750 respondents.

The second round of surveys occurred in November 2013 in the lead up to state elections and relied on traditional household sampling in all 30 slums. Slum-level sample sizes were proportional to their share of the overall slum population of the city. Survey teams began at the entry of the slum and surveyed every seventh household until the target number of respondents was reached. In these surveys, we asked questions about social networks, local leadership, household needs and partisan connections.⁹ This round of surveys yielded 501 respondents. In the analysis below, we merge the two surveys where appropriate. Variation in the number of observations reflects whether or not specific survey questions overlap across the two waves.

The combination of the network survey and the household sample survey will ultimately strengthen what we can get from each of them. The weakness of network surveys is that they require covering the entire universe of households, which in our case precludes covering a large number of slums. The weakness of traditional sampling is that it can miss crucial connections in a network. Although we have not done so yet, we plan to build upon recent innovations in sampling on networks (Handcock and Gile 2010) to use latent space approaches to provide more precise claims on the underlying, albeit unobserved (courteous of the sampling) network in which slum residents interact (see Hoff et al. 2002).¹⁰

Before providing evidence bearing on the hypotheses, we provide some descriptive data suggesting that the social density of slums varies hugely even in the context of a single small city. In our network survey, we asked respondents who their most important local leader is. With those names in hand, we are able to draw graphs of the leadership networks. Figure 4 displays two such graphs, which show two very different social and political settings. Shivaji shows two distinct leadership nodes (one each representing a community of sweepers and the other of butchers); qualitative evidence suggests that these two leaders meet regularly and each of the communities are highly organized. Bheelu, on the other hand, evinces a highly fragmented leadership network, despite the fact that it is relatively homogenous in caste and religious terms.

⁸ The city itself carries 42 slums on its formal list, but our neighborhood survey suggested that 12 of them had experience sufficient development, including paved roads, multistory concrete structures, etc. such that they would not qualify as slums under the UN’s definition.

⁹ The survey will be modeled on one currently being conducted in Udaipur in the context of Rajasthan’s state elections.

¹⁰ To be more specific, the network survey will provide important priors on key characteristics of the unobserved multidimensional latent space in which network position is related to the probability of interaction with others in the network.

Figure 4 Here

Though we are unable to deploy the tools of network graphing in the other 26 slums, the second survey wave did include questions that provide further evidence that social organization and electoral coordination vary a great deal across the city. Figure 5 provides: a) the share of respondents by slum who report attending a community meeting; and b) the share of respondents who report supporting the majority-slum party. With regards to the former, anywhere from 0 to 60 percent of respondents report attending a slum meeting. There is even more variation when it comes to electoral support: anywhere from 10 to 90 percent of respondents support the majority party (note that the low shares reflect many respondents indicating that they support none of the parties). In short, slums vary a great deal indeed in their social and electoral organization.

Figure 5 Here

5. Results

At this point, we have only very circumstantial evidence bearing on the relationship between network density, slum-level leadership, and electoral behavior. Figure 6 provides bivariate slum-level relationships between the share of respondents who identify the same local leader (this is our proxy of leadership network density) and citizen satisfaction with their local leadership and service outcomes. The leadership satisfaction score is the mean score on a 1-10 scale, where respondents were asked how satisfied they are with their local leader. Service (dis)satisfaction is measured using an index that combines scores across several local public services. The figure shows that where a larger share of residents identify a common local leader they also tend to evince higher satisfaction with slum leadership and greater satisfaction with public services (the y-axis is increasing in dissatisfaction, hence the negative slope). Obviously, one wouldn't want to make too terribly much of these results.

Figure 6 Here

We are in a position to more rigorously assess hypotheses 2 and 3, namely that slums which serve as vote banks are more likely to have access to public services and that parties will target slums writ large rather than voters. To do so, we estimate models in which the dependent variable is the response to a question of how often the respondents neighborhood was targeted with: a) private benefits; and/or b) community services in the most recent election campaign.¹¹ The key covariates are the partisan identity of the *respondent* ("BJP supporter") and the partisan identity of the *slum* ("BJP pct at slum level"); these are measured with regards to the BJP since it is the party that governs the city. A significant coefficient on the slum level covariate would be supportive of our hypotheses, while a significant coefficient on individual partisanship would be consistent with more standard accounts of clientelism. We include controls for socio-economic status, which is the principal component score produced by PCA on a battery of 25 asset questions, gender, religion (Hindu is the baseline category), caste (general caste is the baseline), age, and how long the respondent has lived in the neighborhood.

The standard approach to modeling these relationships in the clientelism and voting behavior literatures is to treat the observations as i.i.d. That the case, the first two columns of Table 1 report

¹¹ The questions are: Candidates for political office often promise benefits, like food, drinks, clothes or money to attract votes. How often have politicians or political brokers made such offers in your neighborhood? Candidates for political office often promise benefits to local communities, such as improved roads, access to water, or electricity to attract votes. How often have politicians made such promises in your neighborhood?

results from a standard logit model that ignores the fact that the respondents live in neighborhoods. The first column provides evidence supportive of the increasingly standard account, namely that core voters (“BJP supporter”) and the poor (“SES”) are more likely to be targeted with private, excludable benefits by parties. Table 2 suggests that partisanship has no bearing on community benefits, but that being poor is associated with a higher likelihood of being targeted with community-level public goods.

But our respondents *are* co-located in neighborhoods. Columns 3 and 4 take a naïve approach to that fact by introducing slum-level fixed effects. While the coefficient on SES is robust to the inclusion of fixed effects, the coefficient on individual partisan is not. BJP voters are not more likely to be targeted with private or public goods, once we control for the neighborhoods in which they live. Finally, columns 5 and 6 report our preferred models, which take into account the nature of slum-level partisanship. We estimate random effects models in which we introduce the share of the slum that supports the BJP (“BJP pct at slum”) as a covariate. Individual-level partisanship has no relationship with the targeting of either private benefits (column 5) or public goods (column 6). In both cases, slum-level BJP partisanship is positively and significantly associated with targeting. Figure 7 provides a straightforward means of interpreting these results. It plots the predicted probability of being targeted with private benefits and local public goods for a BJP and Congress supporter across the range of slum-level partisanship. Obviously, there is very little variation in the predictions across individual partisan types; there is, on the other hand, considerable variation across slum-level partisanship, i.e. along the x-axis. These findings are broadly consistent with the notion that slum-level politics matter a great and individual-level politics less so. The findings are also consistent with qualitative interviews with members of the Udaipur Municipal Council.

Table 1 Here
Figure 7 Here

Obviously, we have a rather modest number of higher-level units (i.e. slums) to be running multilevel models. There is growing awareness that estimates can be quite biased with numbers like ours and that a Bayesian approach can yield more robust results (Stegmueller 2013). In subsequent drafts we will explore the robustness of our results to Bayesian hierarchical modeling techniques (Gelman and Hill 2006). We are also in the process of coding a more direct measure of slum-level electoral coordination using voting booth level electoral returns rather than self-reported partisan identity.

6. Conclusion

We have presented an argument bearing on distributive politics among the urban poor that differs from standard models of clientelism while building on the growing emphasis on the network characteristics of clientelistic exchange. Our contribution begins with the simple observations that the urban poor are clustered in neighborhoods and that they place considerable value on basic public services. These observations provide the underpinning for an argument that links the social density of slums to the capacity of local neighborhood leaders to successfully exchange banks of votes for public services. Our empirical results from Udaipur provide suggestive initial evidence in support of several features of the argument.

Obviously, our evidence at this point is only correlational, but as the project moves forward we plan to rely on three potential levers for identifying causal effects. First, the Indian government and the World Bank recently initiated a new program “Capacity Building of Urban Development” (CBUD) that will build upon the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), which is a massive, \$20 billion nationally-sponsored scheme that beginning in 2005 and provides large fiscal transfers to India’s larger cities in conjunction with clear rules governing the extension of slum recognition and/or relocation. Udaipur is one of 30 CBUD cities, and its inclusion means it will be subject to

JNNURM rules and conditions.¹² By most accounts, the external shock associated with JNNURM resulted in a massive impulse toward formalizing slum settlements, and our data collection efforts will provide data on when slums applied for recognition, whether those applications were successful, and how long the processes took. Municipal corporations are legally precluded from providing many public services until The exogeneity of the CBUD shock results from the fact that it was negotiated by a Minister of Urban Development in the previous government who was from Udaipur district; on most counts, Udaipur is not large enough to qualify for JNNURM funds. Thus, CBUD provides the potential to distinguish factors conditioning slum-level success in achieving formal recognition and subsequent public services from the municipal corporation in a context when there is a large positive shock toward petitions for formalization.

Second, Udaipur is in the process of transitioning from a municipal council to a municipal corporation, which implies two shocks. On one hand, municipal corporations are legally required to have one electoral ward for every 10,000 residents; this typically involves a sharp increase in the number of districts and an accompanying increase in the capacity of slum residents to elect one of their own as ward leaders. In Udaipur, this will imply an increase in the number of wards from 50 to somewhere between 60 and 85 (depending on ongoing arguments between the city and the state about its population). This shift in electoral geography will provide a one-off moment when we can see how the change in the city's electoral geography impacts incentives for slum recognition and service provision. On the other hand, the transition involves an increase of upwards of 25 percent in federal and state transfers to city governments; this one-time boom in revenues offers the potential to track how city-level investments in infrastructure responds to slum-level social networks, organization and voting.

Third and finally, a large sister project in Bangalore entitled "Pathways to Prosperity" is combining geocoded surveys of boundaries in more than 130 slums with satellite-based data collection in order to: a) identify slums remotely; b) categorize them according to their physical and legal status; and c) track their physical evolution through time. Echoing Marx et al. (2014), the satellite imagery allows us to identify slum-level upgrades in household investments (as indicated by roof composition and building height) and public infrastructure (through electrical lines, street paving, etc.). We will rely on evidence of this kind of upgrading on a slum-wide level to trigger household surveys to better understand the causal process underpinning the recognition of slum-level property rights and public investments in neighborhoods.

Ultimately, however, we are stuck with a very difficult puzzle that bedevils most work on networks, namely that we do not know from when network characteristics emerge. Do dense political leadership networks and successful slums emerge from some ideal, primordial social conditions early in a slum's history? Or do good leaders, i.e. successful political entrepreneurs, produce densely organized communities and vote banks by dint of organizing, constituency service, and the continuous application of hard work. Considerable research on ethnic and religious heterogeneity suggests that caste-based diversity should play an important role in conditioning the capacity of local communities to engage in collective action; indeed, there is considerable cross-country (cites), cross-state (cites), and cross-citizen (cites) evidence that heterogeneity militates against shared interests, easy communication and organization. Yet while we can find examples in Udaipur where local leadership networks are shaped by caste, we find no evidence that more heterogeneous slums have more Spartan leadership networks. Obviously this might simply reflect the small number of slums, but as of this moment our evidence provides little insight into why some leadership networks are more centralized, some slums better organized, etc.

¹² See Ministry of Urban Development, Government of India (2013) for details on Udaipur's participation.

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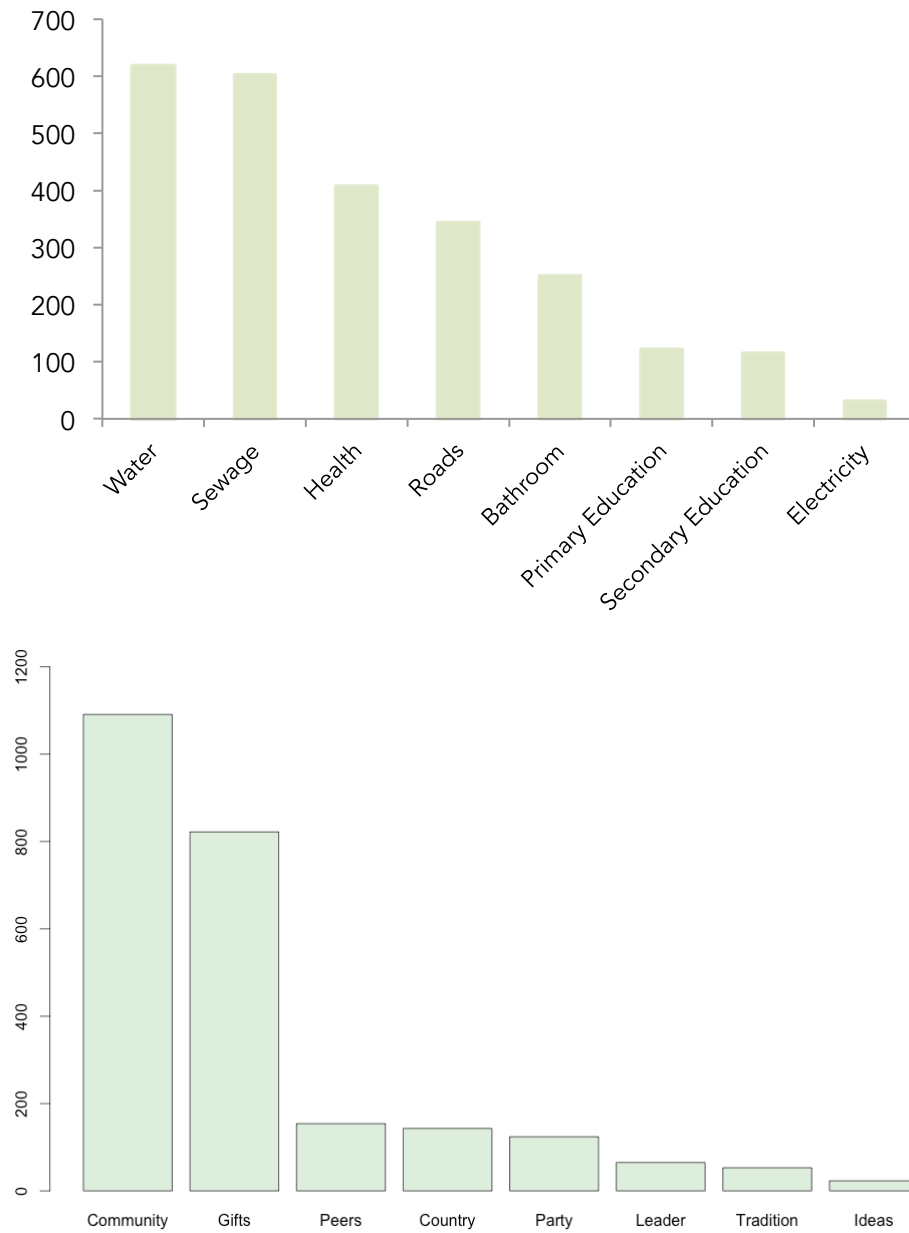
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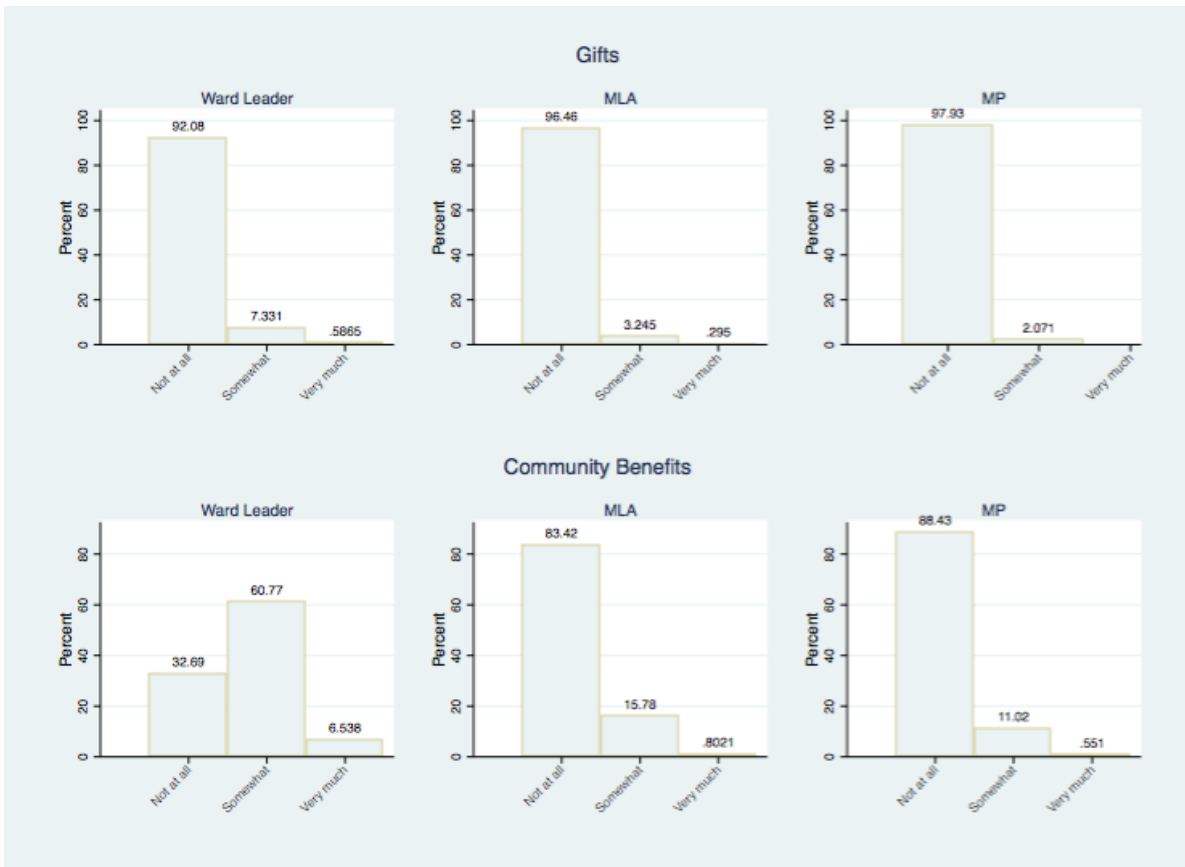
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Figure 1a (The Importance of Community Services) & 1b (Importance for How Vote)



See text for explanation of the figures. These are the raw number of respondents that mentioned each issue either as their first or second priority.

Figure 2: The Perceived Credibility of Electoral Promises Bearing on Private Gifts and Community Services



Note: The figure displays the percentage of respondents who perceive promises of private gifts (top row) and community services (bottom row) as “not at all, somewhat, or very much” credible by different politicians.

Figure 3:

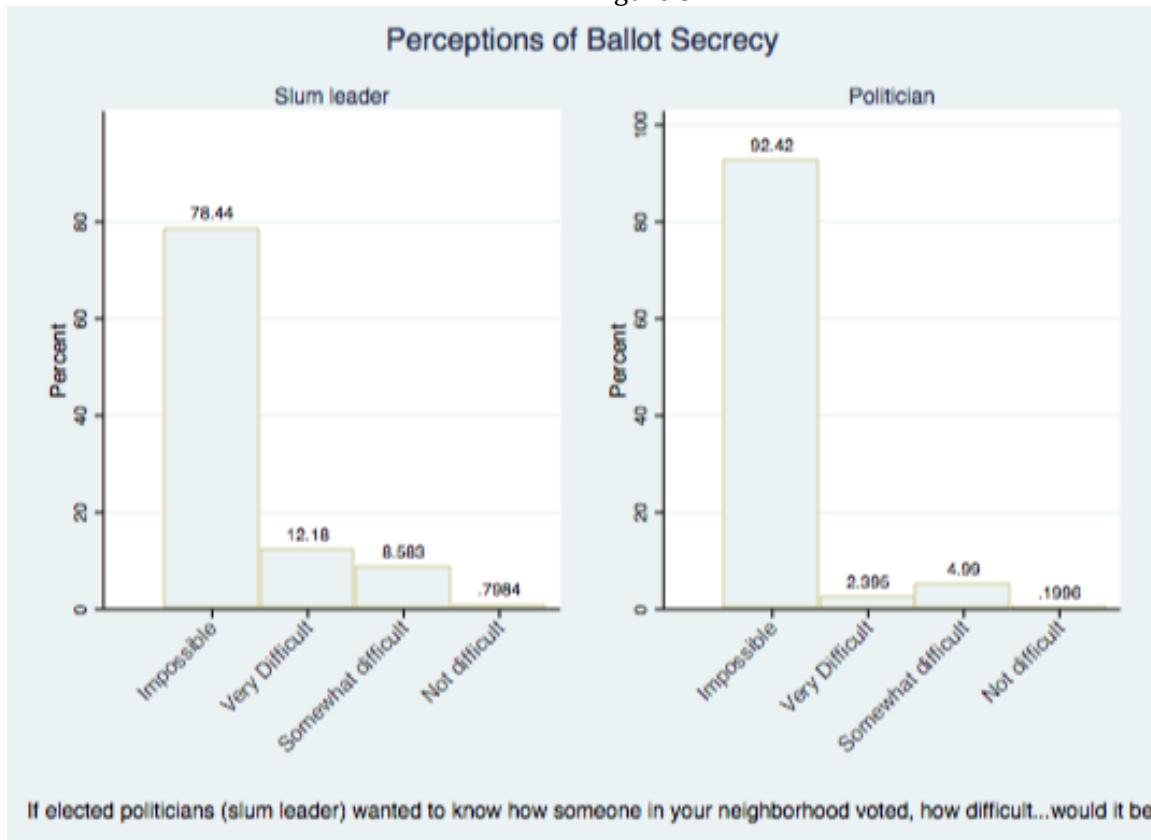


Figure 4: Leadership Networks in Two Slums: Shivaji (left) and Bheelu (right)

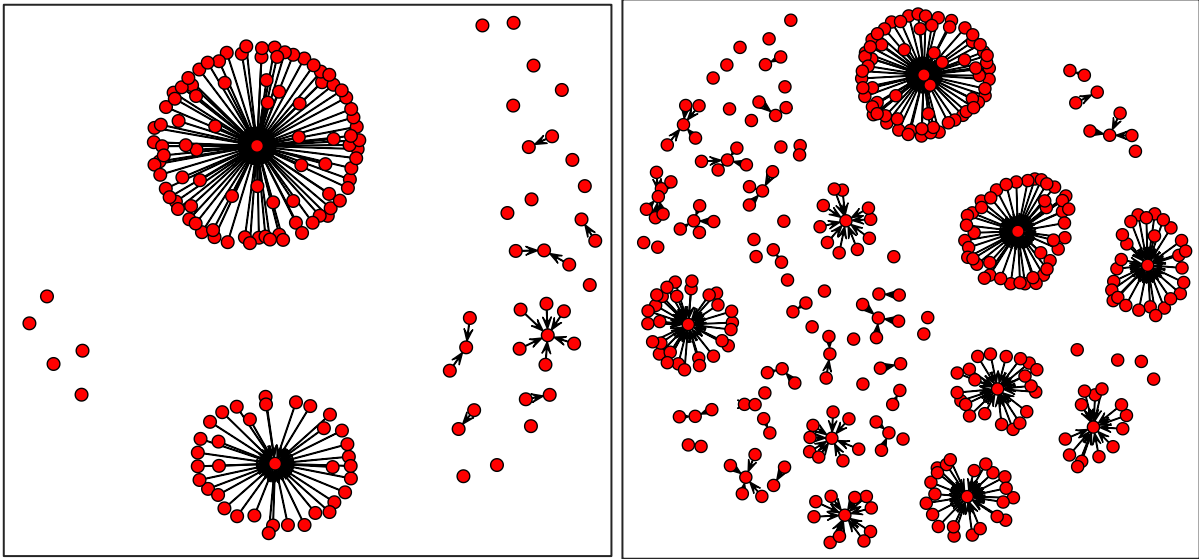


Figure 5: Social Organization and Coordination in Slums

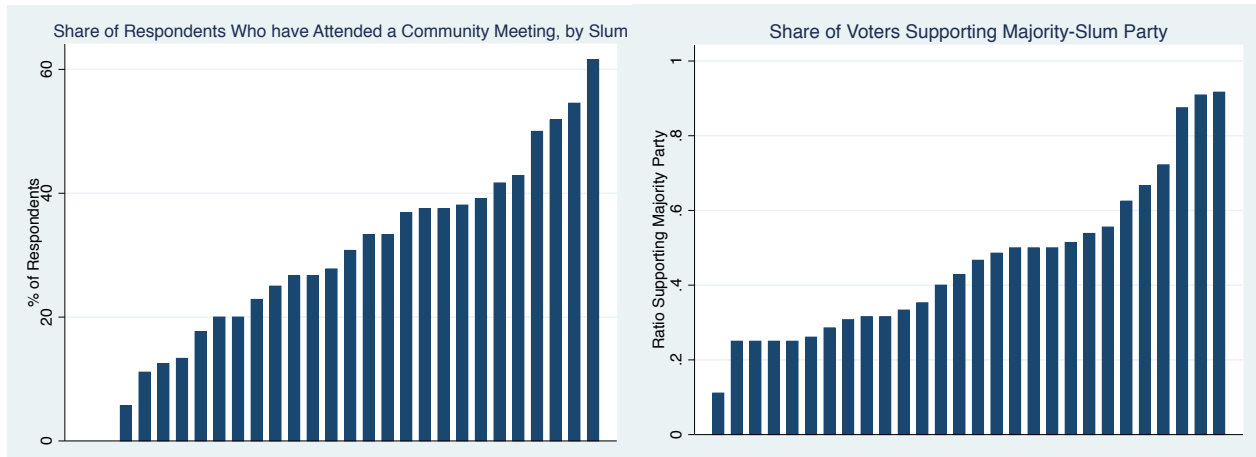


Figure 6:

Figure 7a: The Predicted Probability of being Targeted with Community Services

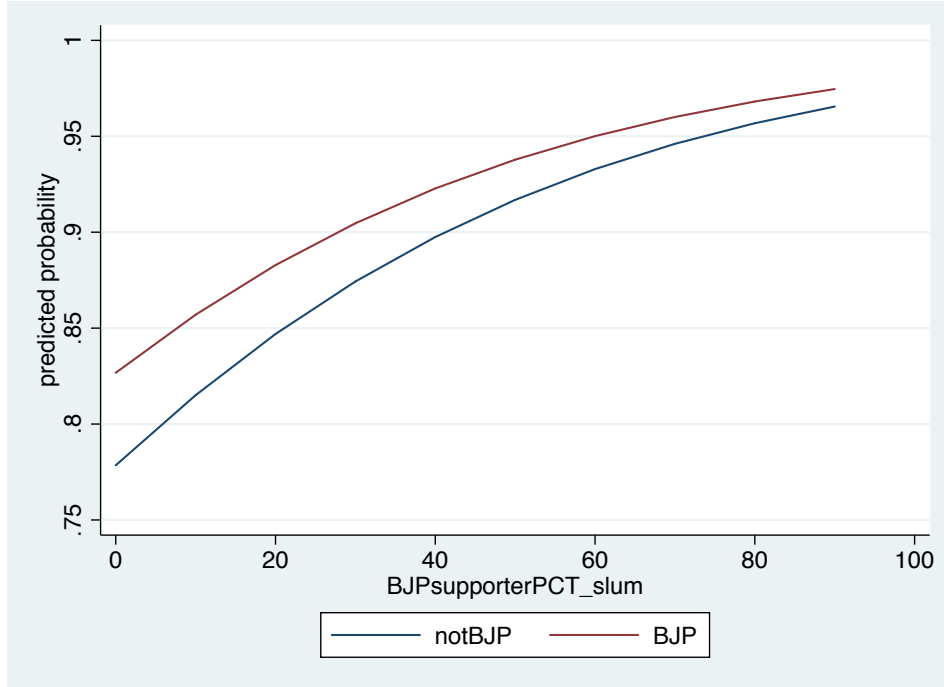
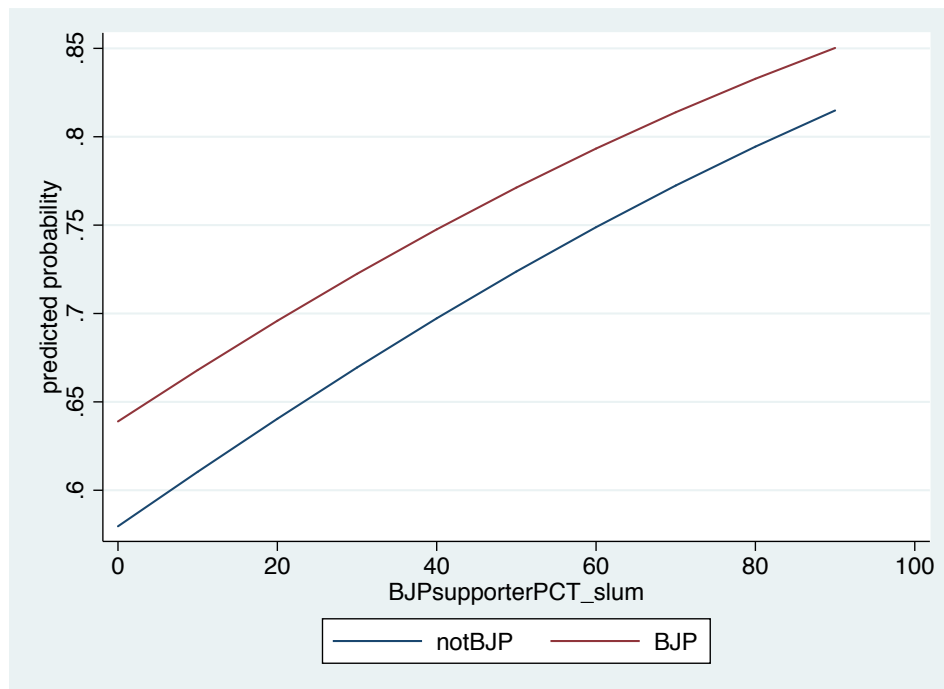


Figure Xb: The Predicted Probability of being Targeted with Private Benefits



Note: Results simulated from the models reported in columns 5 and 6 of Table 1.