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**DOES CLIENTELISM WORK?  
A TEST OF GUESSABILITY IN INDIA**

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**Abstract:**

Local brokers are thought to possess fine-grained information on voters' political preferences, material needs, and even social preferences. Research on clientelism assumes that brokers meet the most basic informational requirement of knowing voters' partisan preferences, if not their votes. This assumption drives theoretical predictions on the types of voters politicians should target with selective benefits, and whether or not a quid pro quo exchange of benefits-for-votes is an efficient electoral strategy relative to programmatic distribution. Nonetheless, existing scholarship does not test this assumption and analysis of variation in brokers' ability to identify voters' partisan preferences has not been conducted. To test this assumption, this paper develops a behavioral measure – *guessability* – based on whether or not village council presidents in Rajasthan, India correctly guess the partisan preferences of voters sampled from their local areas. I find *guessability* to be lower than existing theory and low-information benchmarks expect. Local leaders can identify the partisan preferences of voters who are most guessable either because they belong to core partisan ethnic groups or because they are integrated into their local co-partisan networks. However, they perform poorly at identifying those whose partisan preferences are uncertain and require monitoring to reveal. This has consequences for the targeting strategies parties and politicians pursue.

## 1. Introduction

A critical problem for democracies with weak state institutions is that politicians have incentive to manipulate the implementation of anti-poverty policies for electoral benefit. When this is the case, a central tenet of democracy—voters’ freedom to express their preferences at the ballot box—is lost as a casualty of coercive quid pro quo politics. In contradiction to fundamental notions of democratic accountability, in which voters hold politicians accountable for their performance in office, in this form of politics, referred to as *clientelism*, incumbent politicians threaten to withhold needed anti-poverty benefits from voters if they vote for the *wrong* party. For clientelism to be an efficient electoral strategy, parties must employ a large number of local agents – or brokers – who are tasked with collecting extensive, often private information on voters’ political preferences and distributing cash and targeted state benefits in a way that increases their principal politician’s vote share. Even when they are in large supply, however, this strategy places significant demands on brokers. They must be able to identify voters’ partisan preferences and know what types of benefits will induce particular passive supporters to turn out to vote, or swing voters to vote for their candidate. Even more challenging than this, some scholars even expect party brokers to have the capacity to monitor votes by circumventing the secret ballot directly or using a variety of clues and tactics to indirectly detect vote choice (Kitschelt and Wilkinson 2007; Brusco et al. 2004; Stokes 2005).

The assumption or strong expectation that brokers can collect fine-grained information on the partisan preferences of voters from their neighborhoods is at the core of theories in the clientelism literature. It is critical to explanations of who brokers target with state anti-poverty benefits and handouts during election campaigns, the persistence of clientelism where the ballot is secret, and whether or not we should expect targeted vote-buying to be an effective electoral strategy (Stokes 2005; Calvo and Murillo 2013; Stokes et al. 2013; Finan and Schechter 2012; Bardhan and Mookherjee 2012). Drawing on unique survey data from rural India, I challenge the conventional wisdom that local brokers are skilled enough to identify voters’ partisan preferences – across more and less predictable groups of voters – where local inter-party competition is sufficiently high to make vote preferences uncertain and an Australian secret ballot is in place.<sup>1</sup>

Despite a common perception that politicians develop ingenious ways to violate the

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<sup>1</sup> The Australian secret ballot is non-partisan; voters in the polling booth can vote for any party they wish. This differs from partisan ballots, which activists often can provide on polling day. The latter restricts the vote to members of one party.

secret ballot or capitalize on voters' uncertainty that the secret ballot is *really* secret (Chandra 2004; Stokes 2005, Stokes et al. 2013), there are strong reasons to expect that this is not the case in India and other developing countries featured prominently in the clientelism literature (See Lawson and Greene 2014; Kramon 2011; Guardado and Wantchekon 2014; See also Nichter 2009).<sup>2</sup> First, the independent Election Commission of India (ECI) is a global model for securing ballot secrecy, and Indian voters overwhelmingly believe their ballot is secret (Banerjee 2014; Sridharan and Vaishnav 2013; McMillan 2010). According to the 2009 Indian National Election Study (NES) survey, conducted by the Center for the Study of Developing Societies (CSDS), only 13 percent of respondents believed that politicians can usually find out how people vote at the polls.<sup>3</sup> A similar pattern exists for an increasing number of new democracies that have adopted a secret ballot and independent election commissions (See Mozaffar 2002; Hartlyn et al. 2008; Nichter and Palmer-Rubin 2013).<sup>4</sup> Moreover, even parties with organized machines that reach down to the local level, such as the Peronists in Argentina and PRI in Mexico, invest in core targeting strategies such as turnout-buying and targeting mediated by partisan networks, which do not depend on this assumption (Nichter 2008; Calvo and Murillo 2013; Diaz-Cayeros et al. 2012). The results of this paper suggest that we should be skeptical of the assumption that local brokers in democracies characterized as patronage-based have the capacity to identify the votes or partisan preferences of an electorally decisive share of the electorate. This is problematic in cases such as India where party organization is weak at the local level, and requires empirical testing in a wide range of cases where this is taken for granted.

I find that village council (gram panchayat) presidents, or *sarpanch*, who often serve as brokers to higher-level politicians, incorrectly guess the partisan preferences of voters from their local areas 35.5 percent of the time and perform worse than, or as well as low-information, low-cost benchmarks, which do not depend upon the fine-grained information brokers are believed to collect.<sup>5</sup> Specifically, I find that sarpanch are better at guessing the

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<sup>2</sup> This work suggests that monitoring capacity is weak and vote buying is inefficient if not indiscriminate.

<sup>3</sup> India's record of anti-incumbency, which resulted in party turnover in every state election in Rajasthan since 1993, also suggests that the tools incumbents' have at their disposal to monitor and threaten voters are limited (See Ravishankar 2009).

<sup>4</sup> Lawson and Greene (2014) found that Mexican voters with lower levels of trust in the secret ballot to be no more likely to support the clientelistic machine party (PRI) than those higher levels of in ballot secrecy.

<sup>5</sup> This is based on the vote intention measure. Note that GP ward members-- who are the more immediate neighbors of sampled voters-- have similar rates of guessability as sarpanch. Ward members correctly guessed voters' partisan preferences (based on the vote intention measure) 64.4 percent of the time. I analyze GP Presidents in this paper because they are more

partisan preferences of voters who are either very easy to guess as a result of demographic characteristics that cue partisanship, or who are likely to reveal their partisan preferences as members of local politicians' co-partisan networks. This suggests that local brokers either do not attempt to perform the basic information-gathering role existing scholarship presumes they perform or lack the capacity to do so effectively.

This paper provides one of the first tests of the presumption of high or complete partisan identifiability, which I refer to as *guessability*, and models variation in guessability across voter and elite characteristics. My measure of guessability captures whether or not sarpanch correctly identified the political preferences of a voter from his gram panchayat (GP). To obtain this, I conducted a survey of approximately 960 voters in 96 gram panchayats across Rajasthan and a separate survey of sarpanch and ward members elected to these GPs.<sup>6</sup> The elite survey employs a cross-referenced design in which I asked local politicians to guess the partisan preferences of voters in their local areas whom they overwhelmingly (95%) reported to know personally. Sarpanch were asked to guess the party a randomly selected voter from their GP supported in the last state elections and the party he would support if an election were held tomorrow for all voters sampled from their GP. Their guesses were then matched to voters' own responses to determine their accuracy.

This provides one of the only measures of the information brokers have on specific voters' preferences. Moreover, it provides the only measure of brokers' preferences in a context of intense inter-party competition and a secret ballot.<sup>7</sup> It is also novel with respect to related empirical research on ethnic identifiability. This work captures respondents' ability to use visible cues to identify the ethnicities of individuals shown in photographs whom they have not met (Habyarimana et al. 2007; Harris and Findley 2014).<sup>8</sup> My measure captures the information local leaders possess about voters they know and with whom they routinely interact. This makes guessability a measure of the nature of the relationship between brokers

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likely to be political brokers. Results for this data is available upon request.

<sup>6</sup> From the elite survey, I present sarpanch data only in this paper.

<sup>7</sup> My measure differs from Finan and Schechter's (2012) similar measure from Paraguay because it capture guessability in a genuinely democratic setting. Finan and Schechter collected their data at a time when the country was identified as a semi-democracy and voters widely questioned the security of the secret ballot. 19 percent of voters interviewed in the 2006 Latin Barometer Survey said that elections in that country were free and fair, compared to 69 percent who said they were not,<sup>7</sup> and Hartlyn, McCoy and Mustillo (2008) code Paraguay's election commission as highly politicized (See Mainwaring and Pérez-Liñán 2008).

<sup>8</sup> Vaishnav (2012) measures voters' ability to correctly identify the castes of candidates to the state legislature in Bihar. This comes closer to my measure, but also applies to a low information environment in which guessers are unlikely to have met these politicians in the past.

and voters rather than one of information processing.

This paper makes three contributions to our understanding of the logic and practice of targeted distribution. First, existing research focuses more on strategies inferred from targeting outcomes than on the capacity of party machines to effectively target benefits. For example, Stokes et al.'s (2013) model of divergent preferences between party leaders and brokers push us to reconsider theoretical predictions on targeting outcomes; however, we do not know whether the core targeting pattern they observe is due to brokers' preferences over beneficiaries or a strategic consequence of their inability to identify less predictable voters' preferences and votes. If it's the latter, party leaders should pursue different distributive strategies.<sup>9</sup> Second, it contributes to the paucity of systematic data on the technology of clientelism. Many of our insights on the mobilization and information gathering roles party agents perform come from ethnographic studies with necessarily small samples (Auyero 2001; Robinson 1988; Chandra 2004; Bjorkman 2013); cross-national elite surveys in which academics and journalists are asked to characterize parties' electoral and distributive strategies at a high level of generality (Kitschelt and Rozenas 2011); or voter surveys and survey experiments that collect data on access to state benefits or exposure to vote buying (Brusco et al. 2004; Calvo and Murillo 2013; Corstange 2010; Gonzales-Octanos et al. 2012). While these studies have advanced our understanding of the logic and practice of clientelism, research has not systematically assessed the information gathering capacities of local leaders' that are essential to this strategy.

Third, this paper focuses on the information brokers have on voters' partisan preferences between elections. This is a departure from existing work that focuses on vote-buying during election campaigns. While vote-buying provides a clear measure of how parties allocate their own funds free of the formal and informal constraints that shape policy implementation, evidence from studies of vote-buying, where party machines are less developed, suggest that vote-buying may be less politically targeted than expected (Kramon 2011; Guardado and Wantchekon 2014). We should also expect voters to weigh access to state benefits and services more than low-value campaign handouts (See Lawson and Greene 2014). If voters under clientelism must routinely navigate how to access state benefits and services, local politicians

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<sup>9</sup> For example, party leaders who know that guessability is low should prefer to distribute benefits at the polling station level or above where information on aggregate vote shares is available without reliance on information from brokers, or may simply incentivize brokers to mobilize local co-partisan networks within which guessability should be high (See Bjorkman 2013; Calvo and Murillo 2013; Dunning and Nilekani 2013).

have incentive to leverage their discretion over the allocation of these benefits to increase their party's vote share. This suggests they have incentive to perform on guessability during more quotidian times.

This paper proceeds as follows. In section 2, I discuss the pervasiveness of the assumption of high guessability in theories of clientelism and lay out three mechanisms to explain variation in guessability. In section 3, I provide background on the context of the study: Rajasthan, India. In section 4, I discuss the survey instrument and survey design. In section 5, I present descriptive statistics on aggregate results. In section 6, I test mechanisms that explain variation in guessability across voter and sarpanch characteristics. In section 7, I address external validity and theoretical implications.

## **2. Guessability and Theories of Clientelism**

The assumption or expectation of a high level of guessability is pervasive in the literature on vote-buying and targeted distribution. The expectation is that as central figures in voters' social networks, brokers can directly or indirectly observe voters' partisan preferences and votes, find out which material benefits or favors voters want and what it costs to change their vote or induce turnout, and, according to Finan and Schechter (2012), identify information on social and partisan preferences. In this section, I demonstrate that the assumption or expectation that brokers can identify voters' partisan preferences—across partisan types—is critical to a range of theories in this literature, consider how exploring variation in guessability challenges this theory, and lay out three mechanisms to explain variation at the micro-level.

### *2.1 Guessability and Theories of Clientelism*

Proponents of Stokes' (2005) perverse accountability framework argue that brokers' central location in voters' social networks, real or perceived loopholes to the secret ballot, and routine and continuing interactions between brokers and voters allow the former to detect how people in their localities vote despite the secret ballot (See also: Brusco et al. 2004; Medina and Stokes 2007; Kitschelt and Wilkinson 2007; Chandra 2004). Following from this, brokers can punish those who vote the *wrong way*, thus solving the voter side of the commitment problem that underlies clientelism's quid pro quo exchange of benefits for votes. Stokes explicitly assumes that brokers embedded in voters' communities can identify voters' partisan preferences through their information gathering skills, central position in social networks, and



power vis-à-vis low income voters. Stokes et al. (2013) use data from a survey of brokers in Venezuela and Argentina to support this claim: 80 percent of brokers said they could identify which voters were swing voters, co-partisans, and supporters of other parties.<sup>10</sup> Broadly speaking, scholars of distributive politics hold some form of the monitoring assumption for individuals or small groups in countries as diverse as India (Chandra 2004), Mexico (Medina and Stokes 2007), Lebanon (Corstange 2010), and Taiwan (Wang and Kurzman 2003).<sup>11</sup>

Another view laid out by Finan and Schechter (2012) does not assume that brokers can identify how voters vote in the polling booth, but argues that local brokers use the extensive information they have on voters' political preferences and more subtle characteristics to make compliance in the benefits-for-votes quid pro quo predictable. For them, clientelism's commitment problem is addressed through reciprocity, which is self-enforced by voters rather than coercively enforced by party agents. Brokers are essential to maintain the efficiency of this strategy because they have information on voters' social preferences (such as intrinsic reciprocity and trust) which they use to distinguish between those who are more or less likely to comply with the voter side of the quid pro quo after receiving a handout.<sup>12</sup> As Finan and Schechter (2012) find that brokers in Paraguay possess fine-grained information on voters' partisan and social preferences – irrespective of their partisanship or level of social ties to brokers – their theory and results emphasize the capacity of brokers to perform exceedingly well on guessability. Consistent with this view, data from their survey of brokers and voters in Paraguay show that the former correctly identified voters' partisan preferences 80 percent of the time.

Finally, scholars of clientelism working in contexts where ethnicity is politically salient suggest that taking group identities and group-party linkages into account reduces the difficulty of identifying voters' partisan preferences and votes. Kitschelt and Wilkinson (2007) argue that voters may pressure co-ethnics or members of the same geographic unit to vote as a

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<sup>10</sup> Interestingly, their conclusion that brokers target benefits to core voters against the wishes of party leaders is rooted in the difficulty of the latter in monitoring the former; the ability of brokers to identify voters' partisan preferences and monitor their votes, with some investment in effort, is not considered.

<sup>11</sup> Recent research cites this and related work to establish the validity of the monitoring assumption (See for example: Bardhan and Moohkerjee 2012; Robinson and Verdier 2013; Camp 2012).

<sup>12</sup> Brokers correctly identified voters' levels of trust in others and how they played dictator games 74 and 66 percent of the time respectively. See Lawson and Greene (2014) for a reciprocity argument that does not rely upon this high degree of broker capacity.

bloc because parties can punish the ethnic group or locality as a whole.<sup>13</sup> Along similar lines, Chandra (2004) argues that co-ethnics coordinate their votes as a bloc in order to bargain with politicians for access to selective state benefits and services. Specifically, she argues that voters base their prospective judgments of parties on a combination of counting the number of co-ethnics in visible positions of power across parties and observing the ethnicities of those who received benefits in the past across parties. Ethnic groups use this information to coordinate their votes along ethnic lines and politicians mobilize voters along the same lines. Given the centrality of ethnic coordination, we should expect brokers to have highly localized and timely information on group-party linkages. If partisan preferences can be predicted reasonably well by ethnic identity at the local level and above—even among pivotal groups that change the party they support across elections but coordinate as a group—we should expect guessability to be high (See Kitschelt and Wilkinson 2007; Chhibber and Petrocik 1989).<sup>14</sup>

That said, ethnic information shortcuts only improve guessability to the extent that groups' partisan preferences are homogeneous, which recent work on elections in India and other countries suggests is often not the case. For example, Dunning and Nilekani (2013) find substantial heterogeneity in partisan preferences among members of the same castes who reside in the same villages or village council areas, and evidence at the state-level in India similarly shows within-group party preferences to be heterogeneous (See Thachil 2011; Chhibber et al. 2013; Huber and Suryanarayan 2013). Heterogeneity in partisan preferences within ethnic groups is also common in ethnically diverse countries in sub-Saharan Africa, Europe, and Eastern Europe (See Dunning and Harrison 2010; Bratton et al. 2012; Huber 2012). This suggests that the extent of ethnic group coordination in India and other countries may often be too low for the assumption of guessability in theories of clientelism to be convincing.

Variation in guessability has important implications for the theories discussed above. First, Stokes' (2005) model predicts that party leaders will pursue a strategy of targeting swing voters because brokers can monitor the votes of all partisan types. If guessability is low,

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<sup>13</sup> Kitschelt, Herbert and Steven Wilkinson: p17.

<sup>14</sup> Note that this claim holds with a constructivist approach to ethnicity. We should expect local politicians embedded in rural communities to base their guesses on voters' partisan preferences on ethnic categories that are politically relevant at the local level as well as their local knowledge on the partisan affinities of groups which are relevant at this level.

particularly with respect to the least predictable voters, the swing targeting prediction should not hold because politicians are extremely unlikely to be able to monitor voters' compliance with the quid pro quo exchange. Relatedly, if guessability is low under a secret ballot, the practical implication of Stokes' theory – that parties must invest in armies of brokers to monitor the quid pro quo – does not hold because guessability is limited even when such investments are made. This view is consistent with the results of Guardado and Wantchekon's (2014) formal model, which shows that when the monitoring assumption is relaxed, vote-buying becomes either extremely inefficient or prohibitively expensive.

Second, if guessability is low, the applicability of Finan and Schechter's (2012) argument that parties overcome the voter-side commitment problem by targeting intrinsically reciprocal voters will be limited to a core strategy of targeting co-partisans. Brokers will favor those they know best, whom are likely to be integrated into local co-partisan networks (Calvo and Murillo 2013). It is unlikely that brokers have enough information on non-co-partisans, who are unlikely to be integrated into their local networks, to facilitate the collection of fine-grained information on voters' social and political preferences. Moreover, it is plausible that Finan and Schechter's (2012) results do not exhibit this limitation because Paraguay was characterized by low competition, low trust in the fairness of elections, and low levels of democracy at the time of data collection.<sup>15</sup> This limits the generalizability of their results to more competitive contexts with a credible secret ballot. Third, when ethnic groups have heterogeneous preferences within local areas, low guessability poses problems for vote coordination where political mobilization occurs along ethnic lines. Chandra (2004) argues that under low information, voters and politicians bargain as ethnic groups; however, when politicians cannot be certain that group leaders will be able to deliver their members, this strategy becomes inefficient.

## 2.2 *Mechanisms of Guessability: Variation at the Micro-Level:*

The central question of this paper concerns whether brokers have the capacity to identify voters' private partisan preferences. If brokers are uniquely skilled in this area, relative to ordinary villagers, we should expect brokers who exhibit high-skill to correctly identify the

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<sup>15</sup> Finan and Schechter's data collection in Paraguay spanned from 2006 to 2010. Scholars considered the country a semi-authoritarian regime, which experienced 61 years of one-party rule until 2008 (Abente-Brun 2009). Freedom House coded Paraguay as partly free throughout the period of this study. This makes Paraguay akin to pre-1994 Mexico rather than more democratic cases such as India, Argentina, or even post-transition Mexico (See Magaloni 2006).

partisan preferences of both voters whose characteristics make them more predictable (e.g. members of local partisan networks and members of ethnic groups closely aligned with one party) and those who are less predictable (e.g. swing voters, non-co-partisans, non-partisans). If high-skill brokers perform no better on guessability than those with low skill, we should expect brokers overall to perform no better on guessability than ordinary villagers. To adjudicate between these views, I consider variation in guessability with respect to three mechanisms: common knowledge, broker quality, and co-partisan networks. The common knowledge and co-partisan networks mechanisms do not require brokers to invest effort in identifying voters' private partisan preferences since guesses by these mechanisms depend on information-shortcuts or information on preferences that voters provide themselves. The broker quality mechanism tests the observable implication of existing scholarship, which suggests that competent brokers are likely to know voters' partisan preferences irrespective of the secret ballot.

As a low-information baseline, by the *common knowledge mechanism*, any broker should use information that is publicly known to make an educated guess about voters' partisan preferences in lieu of finer-grained, higher quality information. This includes two types of information: priors on the distribution of partisan preferences across ethnic and class groups and knowledge of voters' participation in publicly observable (partisan) political activities. The former requires the least effort or knowledge. In India, among other settings where ethnicity is politically salient, physical features and names allow brokers to identify voters' ethnic identities, which are predictive of partisan preferences where identity markers are visible and politically salient (Chandra 2004; Posner 2005).<sup>1</sup> In a local setting where brokers know voters personally, we should expect brokers to be able to accurately categorize voters according to both ethnicity and socio-economic status even if this requires finer grained information. Information shortcuts from ethnicity, however, provide clearer cues to partisanship for some ethnic groups than others. If brokers depend on ethnic cues to identify voters' partisan preferences, we should expect guessability to be higher for members of core groups with more homogenous partisan preferences and lower for swing groups with more heterogeneous preferences (See Heath 2005; Huber and Suryanaran 2012). Similarly, where socio-economic status maps onto partisanship, we should expect local politicians' stereotypes about class-party linkages to explain variation in guessability.

In a local setting where villagers can easily observe other villagers' public activities, participation in public partisan activities provides an additional source of common knowledge most villagers can access. While research suggests that brokers compel members of their partisan networks to attend rallies (Auyero 2001; Szwarcberg 2011), brokers should be able to easily observe villagers' public partisan activities, whether the latter are part of their own partisan network or members of the network of a broker from another party. Thus, brokers who have incentive to identify voters' partisan preferences should know which villagers are active in local partisan politics, and take this into account when they guess their partisan preferences. The availability of cues to partisanship from participation in public political activities, of course, varies across voters' propensities to participate in political activities. For example, passive voters are unlikely to participate in public political activities, and swing voters may avoid these activities in order to drive up the price of their votes (See Nichter 2009). This means that knowledge on political participation will be valuable only for the subset of voters who participate the most. In short, we should expect brokers to take common knowledge into account when they do not have better information through the broker quality or co-partisan networks mechanisms. This is a baseline mechanism that brokers and non-brokers alike can employ with comparable accuracy. The remaining mechanisms are compliments to this baseline.

The *broker quality* mechanism captures the conventional wisdom that brokers are capable of collecting information on voters' partisan preferences despite a secret ballot. Where a secret ballot is in place, brokers must use their central location in local social networks, rumors, and visible clues to identify voters' partisan preferences. Brokers use these tactics when elections are not imminent as well as during election campaigns to determine the allocation of state benefits that are allocated in quotidian times and handouts distributed during election campaigns respectively. Brokers are critical players in the quid pro quo exchange because they have the ability—unlike ordinary villagers—to identify the partisan preferences of voters from their communities who have characteristics that make them more difficult to guess. If an important part of a broker's job description is to perform on guessability, we should expect variation in broker quality to explain variation in performance on guessability. Broker quality is a latent variable that captures a local broker's skills to perform the functions the clientelism literature suggests brokers are expected to perform:

information collection on voters' political preferences, voter mobilization, and political targeting of selective benefits. Recent work suggests that principal politicians use the size of brokers' networks as a summary measure of broker quality (Stokes et al. 2013; Camp 2013; Szwarcberg 2012 Auyero 2001). Since measuring broker networks in a large number of villages is unfeasible, and is an imperfect measure of competence where the number of co-partisans is high, I consider characteristics that explain variation in a brokers' capacity to perform these basic functions.

The *partisan networks mechanism* is an alternative low-information mechanism that explains variation in guessability to the extent that brokers need not invest in effort to identify voters' preferences. By this mechanism, we should expect brokers to correctly identify co-partisan voters' partisan preferences because voters seeking access to the benefits of membership in local partisan networks have incentive to reveal their preferences. Calvo and Murillo (2013) argue that brokers condition access to selective benefits on whether voters are integrated into partisan networks, which they use to collect extensive information on voters' preferences and behaviors (See also Auyero 2001; Dunning and Nilekani 2013). Brokers use this information to distinguish between reliable and unreliable voters before distributing patronage benefits. By this mechanism, parties have incentive to require benefit-seeking voters to reveal their partisan preferences through their participation in brokers' local partisan networks, and voters have incentive to reveal their own preferences. If this is true empirically, brokers should be better at guessing the political preferences of co-partisans than non-co-partisans, which they can do with minimal effort.<sup>16</sup>

How should we expect brokers to learn co-partisan voters' partisan preferences? One explanation applied to studies of the Peronist UCJ in Argentina is that voters reveal their preferences through attendance at party rallies (Szwarcberg 2012; Auyero 2001). It is not clear that this applies to India as voters often attend the rallies of more than one party or candidate due the festival atmosphere and handouts that surround them (See Banerjee 2014). A second possibility is that voters publicly declare their support through public pronouncements such as planting a party flag in front of their house before an election, which is a costly signal of partisan allegiance that makes it more difficult to take benefits from another party (Nichter

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<sup>16</sup> In a village setting, I consider co-partisans to be members of (roughly) the same local partisan network.

2009; Nichter and Palmer-Rubin 2013). Nonetheless, it is likely that active partisan voters are most likely to place a party flag in front of their home. In my data, for example, 64 percent of those who reported that they planted a party flag in front of their home in the past five years also reported that they participated in door-to-door campaigning for a candidate. Following Calvo and Murillo (2013), I expect that information on voters' partisan preferences come from routine interactions between brokers and voters. When brokers have extensive access to voters, the information they gain from rally attendance and other visible cues to partisanship is likely to be small. In short, brokers know the partisanship of those in their co-partisan networks because they interact often with these voters who have incentive to reveal their preferences.

### **3. Background: the Case of India**

This study applies to contexts where the ballot is secret, democracy is consolidated, and electoral politics is sufficiently competitive that election outcomes are uncertain. In this section, I argue that India, and Rajasthan in particular, is a compelling case for the study of guessability and provide background on the paper's institutional setting: the village council or gram panchayat (GP).

#### *3.1. Features of the Indian Context*

India, and the state of Rajasthan specifically, provides a hard case to test the assumption of high guessability because it has features that suggest guessability should be high. First, scholarship on India establishes its politics as patronage-based (Chandra 2004; 2014; Wilkinson 2007; Kitschelt 2013; Besley et al. 2007; Zeigfeld 2014; Keefer and Vlaicu 2008; Stokes et al. 2013; See also Berenschot 2011; Piliavsky 2014; Witsoe 2013). Chandra (2004, 2011) defines India as a "patronage democracy" characterized by a dominant state sector that controls primary avenues to upward mobility and survival and discretion over *individualized* provision of jobs and services.<sup>17</sup> Moreover, Chhibber and Osterman (2013) see the Indian state as arbitrary with access dependent on particularistic favors.<sup>18</sup>

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<sup>17</sup> This takes into account reforms that liberalized the Indian economy and reduced the size of the state. She finds that the state sector currently retains dominance as a source of jobs, benefits, and services, particularly for the rural poor.

<sup>18</sup> This is consistent with work conducted in Rajasthan by Kruks-Wisner (2013) who finds that Indian citizens with more diverse connections are more likely to engage with state office holders, and Krishna (2007) who argue that the emergence of local fixers with connection to politicians and bureaucrats have become a critical resource for the poor who help citizens seek entitlements and state services they could not otherwise access (See also Manor 2000). Politicians covet these fixers who they believe can deliver the votes of their supporters during elections.

Second, Rajasthan is a predominantly rural state with a large share of poor voters.<sup>19</sup> According to estimates based on consumption data from the 2004-5 National Sample Survey, Rajasthan has a rural poverty rate of 19 percent, which is modestly below the 22.5 percent average for Indian states (Dev and Ravi 2007).<sup>20</sup> Selecting a state with a significant poverty rate is necessary as the scholarly consensus is that parties target poor voters with clientelistic benefits (Calvo and Murillo 2004; Brusco et al. 2004). Focusing on a state with a substantial population of poor rural citizens makes Rajasthan a hard case to test the guessability assumption as studies show that a strategy of clientelism is more feasible and likely in areas with low population density where brokers can more easily collect information on voters' preferences (See Sugiyama and Hunter 2013; Stokes et al. 2013).<sup>21</sup>

Third, Rajasthan is an ideal case to test the implications of electoral uncertainty on clientelistic strategies. It is a competitive state with a 2-party system that has alternated between the BJP and Congress Party in every state assembly election since 1993, usually by small margins of victory.<sup>22</sup> At the constituency level, the average margin of victory across Rajasthan legislative assembly constituencies in 2003 and 2008 was 8.7 and 8.9 percent respectively.<sup>23</sup> Fourth, Rajasthan has an institutionalized party system relative to other Indian states-- although local party organizations are believed to be weak as are most parties throughout India (Lodha 2009; Chhibber et al. 2012; Jensenius and Suryanarayan 2014; See also Kohli 1990; Thachil 2011).<sup>24</sup> Fourth, Rajasthan is a state where ethnic identity is a salient predictor of partisanship; it falls in the middle of the distribution of Huber and Suryanarayan's (2013) measure of party voting polarization across Indian states.<sup>25</sup> In sum, Rajasthan is a context of moderate poverty, intense electoral competition, politically salient ethnicity, and electoral uncertainty at the state and constituency levels. In this context, efficiency in the targeting of benefits, facilitated by performance on guessability, should be valued.

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<sup>19</sup> Note that poverty alleviation policies have made progress in recent years, along with growth, making Rajasthan above average relative to other North Indian states.

<sup>20</sup> This takes into account the 17 most populous states.

<sup>21</sup> This literature considers low population density to be key. This can apply to small towns or small neighborhoods within towns as well as to rural areas.

<sup>22</sup> Of the five most recent state elections in Rajasthan, three had overall margins of victory in vote share below 4 percent. In 1998 and 2013 the Congress Party and BJP each won by 12 percent of the vote, respectively.

<sup>23</sup> The median margin of the vote in 2008 was 6.6 percent.

<sup>24</sup> To illustrate this, Chhibber and Nooruddin (2008) place Rajasthan in the bottom third among major states for their respective measures of electoral volatility (See Heath 2005). This is moderate compared to state elections in Tamil Nadu and Andhra Pradesh where anti-incumbent swings of 30 percent or more have become common.

<sup>25</sup> This measures the extent of party polarization by sub-castes across Indian states using 1999 and 2004 NES election data.



### 3.2. *The Gram Panchayat and Panchayat Raj in India*

Local elites surveyed for this project are elected gram panchayat (village council) presidents or sarpanch. The gram panchayat is the lowest tier of India's three-tier local government or Panchayat Raj system below elected bodies at the District (zilla parishad) and sub-district or block (Panchayat Samiti) levels.<sup>26</sup> The panchayat raj system existed in some form prior to independence. The 73<sup>rd</sup> amendment to the Indian constitution passed in 1993 gave the Panchayat Raj system constitutional status and imposed federal requirements for elections of panchayat members, further integration of local government and government development functions, and quotas for women and marginal groups. GP boundaries are based on population and consist of one large village or as many as 35 smaller villages.<sup>27</sup> Each gram panchayat in Rajasthan has one directly elected sarpanch and directly elected ward members for each ward. The number of wards in a gram panchayat also depends on population.<sup>28</sup>

Gram panchayats are subject to quotas for women and marginal groups: scheduled castes, scheduled tribes, and other backward (middle) castes. As of 2010, 50 percent of seats were reserved for women. In 2008, 21, 18, and 42 percent of elected seats in the state were reserved for scheduled castes, scheduled tribes, and other backward castes (OBCs) respectively. Eligibility according to these quotas rotates with each new election cycle. This means that it is unlikely that the same politician will be eligible to contest for re-election; which impacts the distribution of political experience of GP politicians as can be seen by the large number of first term sarpanch in the elite survey sample (See Dunning and Nilekani 2013). Finally, unlike the case at higher levels, party symbols are not permitted on the ballot in elections to the GP. Parties have nonetheless penetrated the GP (Dunning and Nilekani 2013; Yadav and Palshikar 2008). They use the GP as a recruiting tool, GP politicians depend on partisan politicians such as MLAs and representatives of the higher tiers of the Panchayat Raj for funds for pork projects, and sarpanch often serve as middlemen to higher-level politicians.<sup>29</sup> Voters are also

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<sup>26</sup> Gram panchayat boundaries are based on administrative units and are not perfectly nested within electoral districts. However, in this study, all the GPs sampled from a selected block reside within one state assembly constituency.

<sup>27</sup> GPs in Rajasthan modally have populations below 3,000 people according to Rajasthan Government population estimates from 2000. See: [http://www.rajsec.rajasthan.gov.in/secraj/pan\\_partA-3.htm](http://www.rajsec.rajasthan.gov.in/secraj/pan_partA-3.htm). In my survey data, there are 750 households per GP on average.

<sup>28</sup> There are nearly 9,200 gram panchayats with approximately 114,000 elected members in Rajasthan (2008 Figures). Government of Rajasthan: <<http://www.nird.org.in/Rural%20Development%20Statistics%202011-12/data/sec-9.pdf>>

<sup>29</sup> In another paper with Neelanjan Sircar, I find strong evidence that GP Presidents prefer to target benefits to co-partisans, which provides further evidence of partisan salience at the gram panchayat level.

aware of GP politicians' partisan affiliations: 82 percent of surveyed voters in Karnataka and 96 percent in Rajasthan correctly identified the party of the GP President (Dunning and Nilekani 2013).

### 3.3. *Identifying Brokers*

I define *brokers* as local politicians who are deeply embedded in their local communities and serve as middlemen to higher-level politicians. Scholars understand brokers to possess information on voters' material needs, votes, partisan preferences, and the elasticity of their partisan preferences conditional on selective benefits. Higher-level politicians purportedly find brokers essential to winning elections because they can leverage their knowledge of voters' partisan leanings and specific material demands to target swing voters or passive co-partisan voters with the minimum payoff necessary (i.e. reservation price) to induce vote switching or turnout. To this end, brokers use their central location in local social networks and routine interaction with voters to ensure the latter's compliance with their end of the benefits-for-votes exchange (See Stokes 2005; Stokes et al. 2013). The characterization of the broker-- rooted in research on urban machines in contemporary Latin America and the United States in the 19<sup>th</sup> and early 20<sup>th</sup> centuries-- takes different forms in rural India where parties are poorly organized at the grassroots. The Indian literature differs on the extent to which middlemen are formally party agents. For example, Manor (2000) refers to opportunistic informal local leaders or 'fixers' whose party loyalties are opportunistic and volatile from one election to the next. I am agnostic as to whether a broker's allegiance is based on a long-term commitment or temporary and won by the highest partisan bidder (See Camp 2012).<sup>30</sup>

I identify brokers through the institution of direct elections of gram panchayat presidents in Rajasthan. This is reasonable for several reasons. First, GP Presidents oversee implementation of many government anti-poverty schemes funded by federal and state governments, and like local brokers broadly, use discretion in selecting beneficiaries (See Besley et al. 2005; Dunning and Nilekani 2013; Markussen 2010; See also Pattenden 2011). Second, especially among the poor, there is evidence that the first point of contact for voters

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<sup>30</sup> I find substantial stability (90%) in the partisan preferences of sarpanch across state elections in my survey data. This occurs despite the fact that party symbols are banned from the ballot in village council elections in Rajasthan and most other Indian states.

seeking benefits or favors is the sarpanch, who has access to higher-level contacts that are important where the state is unresponsive (Kruks-Wisner 2010; Bussell 2011; Chhibber and Osterman 2013). Third, my own informal interviews and ethnographic fieldwork by Pattenden (2011) finds that local brokers (or fixers) tend to be current or past sarpanch or GP members, and that prominent fixers are often recruited to contest for sarpanch. Fourth, evidence suggests that sarpanch in India are active in campaigns and serve as local mobilizers for state politicians. In my data, 92 percent of sarpanch reported that they campaigned for a state politician in the last 5 years (since the previous state assembly elections in 2008); 80 percent said they attended a party rally for a party or candidate; and 85 percent attended a party meeting. Finally, Yadav and Palshikar (2008) observe that despite the 73<sup>rd</sup> amendment's non-partisan goals for local government, parties have largely coopted gram panchayats as a resource for local middlemen and local information. This supports my presumption that while many local brokers have not been elected to the gram panchayat, GP presidents-- or their husbands or close family members-- are likely to function as brokers. Identifying brokers formally through the result of elections has the strength of objectively yielding an identifiable local leader for a large number of GPs. This is the most reasonable, reliable, and feasible option for a large-scale measure of guessability.<sup>31</sup>

#### **4. Survey Instrument and Sampling**

The data for this paper comes from a 2013 survey of approximately one thousand voters and one hundred sarpanch conducted in twelve competitive blocks selected from seven districts throughout Rajasthan. In this section, I describe the survey instrument used to create the guessability measure and sampling design.

##### *4.1. Survey Instrument*

*Guessability* is a dichotomous measure of whether or not there is a match between voters' responses to vote intention and 2008 state assembly elections vote recall questions and GP Presidents' guesses about these voters' preferences and votes. I report guessability on the 2008 vote choice item as a robustness check; however, due to recall concerns, I center the statistical analysis on the rate of correct guesses for the vote intention question: *If an MLA*

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<sup>31</sup> The caveat to this design is that I could not determine ex ante whether unelected local leaders would perform better on guessability than sarpanch. I argue that identifying the *true* broker informally is unfeasible and susceptible to considerable error of an uncertain direction.

*(state assembly) election were to be held tomorrow, which party would you support?* This question captures voters' current partisan preferences 9 months before the 2013 Rajasthan state assembly elections. I ask sarpanch which party he or she thinks a voter sampled from his GP would support if a state assembly election were held tomorrow and which he voted for in 2008. Sarpanch were shown a sheet of 10 photographs of sampled voters including information provided in the electoral roles: name, father's name, and house number.<sup>32</sup> They were then asked to guess the past votes and vote intentions of each of the voters sampled from their GP. The survey instrument for the vote intentions and 2008 vote choice items for voters and local elites follows standard secret ballot design.<sup>33</sup> Interviewers assured respondents of their anonymity and insisted that the respondent not show them their completed ballot to ensure the ballot was credibly secret.<sup>34</sup>











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<sup>32</sup> See figure 1 for the survey instrument.

<sup>33</sup> The vote choice survey instrument follows one fielded for Rajasthan respondents in post-poll surveys carried out by Lokniti in 2008 and 2009. Respondents received a ballot paper with party symbols and were asked to check the box next to the party symbol they preferred. They then were asked to fold the ballot paper and insert it into a sealed ballot box. Ballot boxes were not opened for coding until the research team exited the gram panchayat.

<sup>34</sup> It should be noted that parties in India do not release the candidate list for state assembly elections until approximately one month before elections.

**Figure 1: Guessability Survey Instrument**

<p>1 DMH/011694881</p> <p>नाम : महेन्द्र पिता का नाम : हरिचन्द्र मकान संख्या : 54 आयु : 28 लिंग : पुरुष</p> 	<p>2 DMH/011694881</p> <p>नाम : भगवाना पिता का नाम : बादरा मकान संख्या : 18 आयु : 50 लिंग : पुरुष</p> 
<p>3 DMH/011694881</p> <p>नाम : मनाराम पिता का नाम : अचलाराम मकान संख्या : 51 आयु : 21 लिंग : पुरुष</p> 	<p>4 DMH/011694881</p> <p>नाम : केशाराम पिता का नाम : राणाराम मकान संख्या : 19 आयु : 40 लिंग : पुरुष</p> 
<p>5 DMH/011694881</p> <p>नाम : जगदीश पिता का नाम : हरचन्द्रराम मकान संख्या : 25 आयु : 25 लिंग : पुरुष</p> 	<p>6 DMH/011694881</p> <p>नाम : मंगलाराम पिता का नाम : केसराम मकान संख्या : 32 आयु : 30 लिंग : पुरुष</p> 
<p>7 DMH/011694881</p> <p>नाम : श्रवण कुमार पिता का नाम : जेठाराम मकान संख्या : 38 आयु : 27 लिंग : पुरुष</p> 	<p>8 DMH/011694881</p> <p>नाम : मकनाराम पिता का नाम : छोगाराम मकान संख्या : 41 आयु : 38 लिंग : पुरुष</p> 
<p>9 DMH/011694881</p> <p>नाम : निम्बाराम पिता का नाम : रूग्गाराम मकान संख्या : 45 आयु : 50 लिंग : पुरुष</p> 	<p>10 DMH/011694881</p> <p>नाम : मल्लाराम पिता का नाम : सकराराम मकान संख्या : 53 आयु : 30 लिंग : पुरुष</p> 

Now I will ask you about \_\_\_\_\_ [VOTER'S NAME]. [INTERVIEWER: POINT TO THE PHOTO.]

If an MLA election were held tomorrow, which party do you think [voter name] _____ would support?	a) INC b) BJP c) Other _____
Which party do you think [voter name] _____ supported in the last MLA elections in 2008?	a) INC b) BJP c) Other _____

#### 4.2. Sampling

The survey sampled 96 gram panchayats in seven districts, twelve blocks and six of Rajasthan's seven administrative divisions.<sup>35</sup> The sample generalizes to voters and GP politicians in rural contexts with a moderately high share of households below the poverty line and inter-party competition. To build the sample frame for this population, I used 2001 census data on the rural composition of blocks,<sup>36</sup> data from the Government of Rajasthan on the share

<sup>35</sup> Rajasthan has 33 districts, 249 blocks, 7 administrative divisions, and 9177 gram panchayats in all.

<sup>36</sup> Government data on the share of BPL households across gram panchayats was from 2001. More recent data was not available at the time of fieldwork in 2013.

of below poverty line (BPL) households across blocks in 2001, and Election Commission data on political competition in panchayat samiti elections—the tier of the panchayat raj system above gram panchayats, which aligns with administrative blocks.<sup>37</sup> I restricted my sample to blocks with a 75 percent rural population according to the 2001 census to reduce the chance of sampling GPs that function as suburbs, and excluded blocks with less than 20 percent of households in the BPL category in 2001 to ensure that the chance of sampling voters eligible for anti-poverty programs at random was non-trivial. I also excluded blocks where the median margin of victory across Panchayat Samiti ward elections was greater than 15 percent to increase the chance that I selected competitive GPs.<sup>38</sup> After this restriction was applied, approximately 60 of 249 blocks were eligible for sampling. Logistical concerns required that we sample two blocks in each district to the extent possible. This reduced the list to approximately 50 blocks. I randomly sampled one district in 5 of Rajasthan's seven divisions from a pool of districts in which three or more blocks were eligible for sampling according to these criteria. Two blocks were randomly selected from the pool of eligible blocks in each district. In Udaipur, the sixth division selected, three eligible blocks did not exist in any one district; As a practical alternative, I randomly selected one block each from two neighboring districts in the division: Udaipur and Rajsamand.

Once 12 blocks were sampled, I collected data on political competition across gram panchayats through interviews.<sup>39</sup> Members of my research team and I interviewed block party presidents—party organizers immersed in the politics of gram panchayats in their block—who were asked to characterize the level of competition between Congress and the BJP as non-competitive, somewhat competitive, or very competitive. Of the 452 GPs in 12 sampled blocks, 180 were described as non-competitive, 133 as somewhat competitive, and 139 as very competitive. To increase the chance that the target population would be sampled, given resource constraints, non-competitive GPs were dropped from the pool for sampling. In each block, I randomly selected 4 GPs among those coded as somewhat competitive and very competitive respectively. I then randomly selected one ward in each sampled GP and randomly

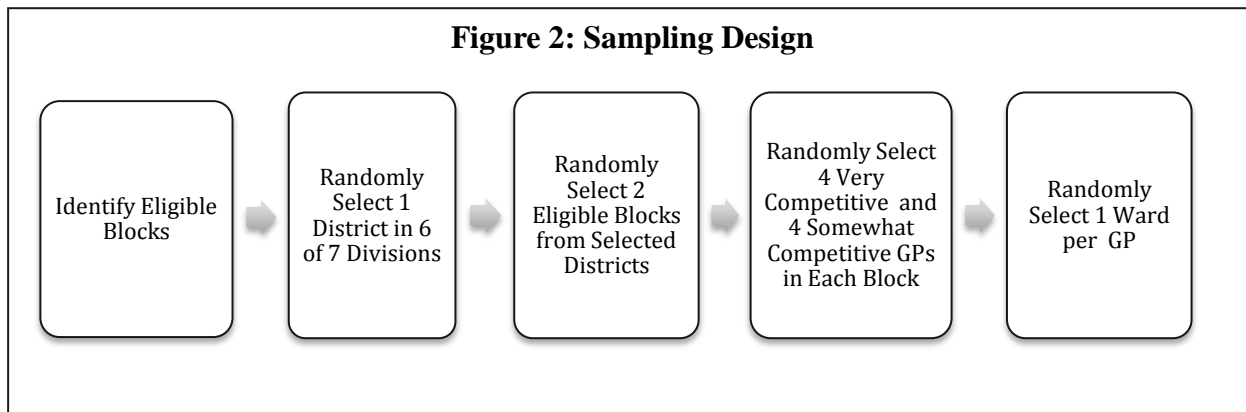
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<sup>37</sup> This is the lowest level of aggregation at which election commission data is available from a central source and the lowest level that permits party symbols on the ballot.

<sup>38</sup> Each member of this block-level legislative body is elected from one single member ward and elected according to a first past the post electoral rule. I use the median margin of victory across ward election in each panchayat samiti as gram panchayat electoral data could not be obtained.

<sup>39</sup> This was necessary because electoral commission data on gram panchayat elections is not available from a centralized source.

sampled household in sampled wards using the gram panchayat voters' list, which is public information provided by the Election Commission.<sup>40</sup> I sampled (predominantly male) heads of household in randomly sampled households because they are generally the household member most engaged in village politics and citizen-state relations.<sup>41</sup> The elite survey was fielded the day after the vote survey was completed in a given GP. I illustrate the steps in sampling in figure 2 below. I provide descriptive statistics on the survey sample in tables A1 and A2 of the appendix. Sample statistics show that sarpanch are politicized and drawn from a more educated and richer demographic than the average population.<sup>42</sup>



## 5. Results for Guessability: Descriptive Statistics

In this section, I present aggregate descriptive statistics on guessability. First, I show that guessability is lower than existing literature suggests. Second, I show that observed sarpanch perform worse or as well as low-information benchmarks that do not require brokers.

### *Aggregate Guessability Rates*

Table 1 shows that GP Presidents guess voters' partisan preferences incorrectly 35.5 percent of the time.<sup>43</sup> While it is plausible that this is due to the fact that not all sarpanch are

<sup>40</sup> This was done because the elite survey samples one ward member in each GP for analysis not included in this paper. To analyze ward member-voter ties, all sampled voters must live in one GP member's ward.

<sup>41</sup> To identify heads of household, interviewers were instructed to request to speak to the head of household upon approaching each sampled household. If heads of household were not at home, interviewers were instructed to either interview them in the fields in which many of them worked or to return to the household later in the day. If they did not return, supervisors provided alternative respondents who were also randomly selected from a voters list.

<sup>42</sup> Besley et al. (2012) find a similar pattern in South India.

<sup>43</sup> The results I present are based on survey data with several restrictions that ensure my measure of guessability is conservative. I discuss this in Appendix B.

brokers and not all sarpanch who are brokers are high quality brokers, the data suggests this is not the case. To address this, I conducted difference-in-means tests on guessability rates comparing female and male sarpanch and comparing sarpanch from the upper castes and other backward castes (OBCs) and those from the scheduled castes and scheduled tribes. T-tests show no significant differences across these groups. despite the fact that female sarpanch are likely to be housewives and lower caste sarpanch are less educated than their upper caste counterparts.<sup>44</sup> This is also consistent with the null result on measures of broker quality discussed in section 6.3. In short, guessability is low in the aggregate and this is the case for sub-groups of sarpanch who are more and less likely to be employed as local brokers to higher-level politicians.

**Table 1: Aggregate Guessability Among GP Presidents (Restricted)**

	<b>Vote Intention</b>	<b>2008 State Elections</b>
<b>Incorrect Guesses</b>	286 (35.5%)	287 (34.5%)
<b>Correct Guesses</b>	520 (64.5%)	544 (65.5%)
<b>Total Observations</b>	806 (100%)	802 (100%)

\*I present raw numbers followed by percentages of observations in the sample.

*Benchmarks of Guessability.* What does a guessability rate of 64.5 percent say about the level of information local politicians in rural Rajasthan have on voters partisan preferences? I show here that local politicians perform as well as or worse than benchmarks that do not require the presence of brokers to predict vote preferences. In a two-party system, the least impressive benchmark is random chance or 50 percent-- equivalent to guessing partisan preferences by flipping a coin between Rajasthan's two major parties: Congress and the BJP. Table 1 shows that guessability rates on vote intentions and 2008 vote choice items exceed random chance in the aggregate. Guessability aggregated to the GP (or sarpanch respondent) shows that 69.6 (64 of 92) and 67 (62 of 92) percent of GP presidents perform above the 50 percent random chance benchmark. Second, I fit a minimalist multinomial logit model on partisan preferences based on voters' self-reported vote intentions. I include jati (sub-caste), self-reported land holdings, and block fixed effects. This model provides a low-information

<sup>44</sup> Note that interviews with female sarpanch were conducted with their husbands (when requested) in effort to capture the maximum level of information sarpanch have on voters' preferences ultimately.



benchmark based on the most visible demographic information that most villagers can easily observe. This model correctly predicts observed vote intentions 65.3 percent of the time as compared to an observed aggregate guessability rate of 64.5 percent in the pooled sarpanch, which suggests that guessability for politicians immersed in voters' networks is roughly indistinguishable from a simplistic demographic model at a high level of aggregation.

The third benchmark compares observed guessability rates against the rates that party leaders would have observed if they used publicly available results from state assembly election post-poll surveys conducted by Lokniti, a national survey institute in India, following the previous two elections in 2003 and 2008. Published in newspapers at the time, these results include aggregate statewide vote shares for BJP and Congress across major caste groups and Muslims.<sup>45</sup> I develop a blunt yet plausible decision rule based on voting patterns across these ethnic categories as follows. When the difference in vote share between support for the Congress Party and BJP (averaged between the 2003 and 2008 elections) among members of broad caste categories or Muslims is greater than or equal to 15 percent in Rajasthan as a whole, sarpanch guess that all members of that group supported that party. When the difference in vote share for that group is less than or equal to 15 percent, sarpanch guess that half of the members of that group will support either the Congress or BJP. Since Rajasthan is a two-party system, this simple decision rule assumes no guesses of third party support.<sup>46</sup> This means that all voters who prefer Rajasthan's comparatively weak third parties will be guessed incorrectly by this decision rule.<sup>47</sup> This decision rule is conservative and should perform worse on guessability than local politicians living amongst the voters whose partisan preferences they were asked to guess. Surprisingly, if sampled GP presidents followed this decision rule, they would have achieved an aggregate guessability rate of 75.9 percent. This exceeds the aggregate guessability rate I observe in the pooled sample (64.5 %) by 4.4 percent.<sup>48</sup> Thus, an outsider who followed this simple decision rule would substantially out-perform the aggregate guessability rate of local politicians immersed in voters' social networks.

In sum, aggregate measures of guessability based on the vote intention and 2008 vote

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<sup>45</sup> These groups include Muslims, forward castes, Jats, Gurjars, scheduled castes, scheduled tribes, and other backward castes (middle peasant castes), which exclude Jats.

<sup>46</sup> Sarpanch guessed third parties for 7 of 806 voters in the restricted samples and only 2 of these were correct; thus, the 2-party focus fits with sarpanch behavior.

<sup>47</sup> See Table A4 in the appendix for details on how guesses based on this decision rule compare to observed sarpanch guesses.

<sup>48</sup> When I change the threshold from a 15 percent average margin of victory to a 10 and 20 percent margin, the decision rule yields guessability rates of 67.6 and 69.4 percent respectively. Both of these exceeds observed guessability.

choice measures are consistently lower than theory presumes, and sarpanch perform at comparable or worse levels than simple, methods for identifying voters' partisan preferences that rely on aggregate information and do not require the fine-grained information brokers are understood to collect. These aggregate results give us empirical grounds to question the guessability assumption. In the next section, I model variation in guessability at the micro-level.

## 6. Explaining Variation in Guessability: Regression Analysis

In this section, I test for the observable implications of three mechanisms introduced in section 2.2 that allow us to distinguish between a low or high information explanation for variation in guessability: the (baseline) common knowledge mechanism, broker quality mechanism, and co-partisan networks mechanism. Recall that only the broker quality mechanism explains variation in guessability as a function of a broker's ability to identify privately held partisan preferences. The remaining mechanisms use information from observable cues or information on partisan preferences that voters provide to brokers themselves. I find that variation in guessability is only explained by the variables that measure the (baseline) common knowledge mechanism and co-partisan networks mechanisms, which is consistent with the aggregate pattern of low guessability.

### 6.1. Empirical Model

To test the observable implications of these mechanisms, which include measures of voter and elite characteristics and their interactions, I estimate a set of varying-intercept multilevel logistic regression models of the following form:

$$\Pr(y_i = 1) = \text{logit}^{-1}(\alpha_j + \beta X_i + \gamma U_{j[i]} + \varepsilon_{ij}) \quad (1)$$

$$\alpha_j \sim N(U_{j\gamma}, \sigma_\alpha^2) \quad (2)$$

The outcome  $y_i$  is a binary indicator for whether or not a GP President correctly guessed the party a voter reported that he would support if a state assembly election were to be held tomorrow.<sup>49</sup> A value of one represents a match between voter responses on this item and a

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<sup>49</sup> Other parties were grouped together into a single category due to the small number of observations in narrower categories.

local politician's guess about a particular voter's partisan preferences.  $\beta$  represents a vector of coefficients on voter and dyadic characteristics that capture the common knowledge and co-partisan networks mechanisms as well as controls for co-ethnicity and swing voters. This includes indicators for voters' ethnicity and wealth, voter-level political characteristics, and dyadic characteristics which include indicators for co-partisanship and co-ethnicity.  $\gamma_j$  is a vector of sarpanch characteristics (indexed by voters) that capture the broker quality mechanism: education, tenure in the GP, family connections in politics, measures of the frequency of contact with higher-level politicians and bureaucrats in the past month, and political characteristics.  $a_j$  are gram panchayat random effects modeled by a group-level intercept and a normally distributed error term.<sup>50</sup>

The varying-intercept, or random effects, multi-level model can be interpreted as a model with a different intercept on guessability for voters in each GP.<sup>51</sup> The voter-level model in equation 1 and model of GP intercepts in equation 2 are estimated simultaneously. Multi-level modeling is an appropriate estimation strategy for this analysis for several reasons. First, multi-level modeling allows us to account for individual and group-level variation when estimating group-level coefficients—the modeled group (GP) intercepts in this case. Multilevel modeling allows me to model gram panchayat random effects as well as sarpanch predictors at the GP-level. Second, unlike classical regression, which treats all observations as independent, multilevel approaches allow researchers to use all the information that is available but have correctly estimated standard errors with clustered data. This is because multilevel modeling represents a compromise between the two extremes of completely pooling the data and estimating separate models for each group (no pooling). By “partially pooling” estimates, multilevel modeling considers pooled and un-pooled information and weighs that information according to the sample size of the groups and the within and between-group variation (Gelman and Hill 2007).

I present results from multi-level logistic regressions below. I focus the discussion on the vote intention measure of guessability, but provide confidence intervals for guessability on the 2008 vote choice measure as a robustness check. The vote intention measure captures partisan

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If a politician guessed “Other” and a voter chose a party other than Congress or BJP, guessability was coded 1. This applies to only 2 cases.

<sup>50</sup> Note that since there is one sarpanch in a given GP, random effects capture intercepts for sarpanch and village characteristics together.

<sup>51</sup> Recall there is one GP President sampled in each GP.

preferences on the day of the survey, which was completed 9 months before the Rajasthan assembly elections that took place in December 2013. The 2008 vote choice measure is based on voters' recall of their vote choice in an election that occurred 4 years prior. This means that it cannot be used to test claims on vote monitoring—due to recall bias-- but can show consistency across measures that should move in the same direction.<sup>52</sup>

## 6.2 *Common Knowledge*

In this section, I test for the observable implications of the common knowledge mechanism. According to this mechanism, as a baseline, sarpanch use information shortcuts based on their perceptions of ethnic and class group-party linkages and knowledge of individual voters' publicly observable political behavior to identify voters' partisan preferences. At the group level, this means that sarpanch observe voters' visible markers of ethnicity and class, and guess their partisan preferences according to priors for whether that particular group generally supports the BJP, Congress Party, or a third party. Sarpanch will be more likely to guess the partisan preferences of voters correctly when priors on group-party linkages are most reliable, which should be the case for groups with more polarized partisan preferences (core groups) as compared to those with more heterogeneous or volatile preferences (swing groups). In Rajasthan, ethnic groups historically aligned with Congress include scheduled castes, scheduled tribes, and Muslims. Ethnic groups aligned with the BJP come from the upper castes: Rajputs and Brahmins.<sup>53</sup> Jats, an upwardly mobile peasant caste officially identified as another backward caste, Meenas, an upwardly mobile scheduled tribe, and Other Backward Castes (excluding Jats) have more heterogeneous preferences.<sup>54</sup> I also test for the effect of socio-economic status according to the same information short-cut logic. Here, the most well-off are more likely to be associated with the BJP, while the least well-off are more likely to be associated with Congress.<sup>55</sup>

I use the following measures in regressions discussed below. First, I create indicator

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<sup>52</sup> Regression results from models on both dependent variables are provided in the appendix.

<sup>53</sup> As a caveat, Lodha (2009) notes that Congress has made inroads into the BJP's Rajput support base since 2009.

<sup>54</sup> Other Backward Castes are an official category of historically disadvantaged castes. This category is distinct from scheduled castes and scheduled tribes.

<sup>55</sup> I also expect the richest and poorest voters in GP to interact more often with the sarpanch than other socio-economic groups. The richest members tend to be prominent members of their villages and likely to be more socially connected with the local political elite while poor voters are likely to contact sarpanch in pursuit of benefits from government schemes such as subsidy and government work programs.

variables for politically relevant ethnic groups in Rajasthan. I include indicators for upper castes, which includes a number of Brahmin sub-castes; members of the influential upper caste Rajput sub-caste (jati); Jats; a residual category of OBCs that excludes Jats; a number of jatis classified as scheduled castes; Meenas; scheduled tribes (excluding Meenas); and Muslims.<sup>56</sup> To test the group-level implication of class on guessability, I code socio-economic status using a standardized wealth index based on 15 asset items in the voter survey with weights derived from principal component analysis (Filmer and Pritchett 2001). I split the distribution on this index measure into indicators for wealth quintiles.<sup>57</sup>

At the voter-level, I expect sarpanch to be better at identifying the partisan preferences of voters who report high levels of publicly observable political participation as compared to less active voters. To measure this, I created a composite participation index that includes binary questions on whether or not a respondent reported that he participated in one of four public political activities in the last 5 years: attending a rally, attending a party meeting, putting a party flag in front of their home, and canvassing for a candidate during an election campaign. I sum the number of these self-reported activities and weight the sum by two standard deviations to capture large differences in public political participation relative to zero. I also include a behavioral measure to identify swing voters. This is a dichotomous measure of whether the party a voter reported to have supported in the 2008 state elections and the party he intends to support in the vote intention item do not match.<sup>58</sup> The coefficient on the swing voter measure shows if voters with partisan preferences that are particularly difficult to predict are less guessable by the common knowledge mechanism.<sup>59</sup> I present regression results for vote intention and 2008 vote choice measures of guessability that test the common knowledge mechanism in tables A5 and A6 in the in appendix; I present confidence intervals for model 3 in figure 3 below.

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<sup>56</sup> I classify Muslims as a single group even though they reported various caste identities. I do so because Muslims are treated as an ethnic voting bloc in most analyses of Indian electoral behavior. I code caste categories by locating respondent-reported sub-castes (or jatis) in a Rajasthan codebook of jatis according to caste categories provided by MORSEL and check this against a codebook produced by Lokniti, a national survey institute based in Delhi.

<sup>57</sup> The asset items included in the composite measure of wealth are as follows: numbers of rooms in the respondent's home, number of buffalo, number of cows, self-reported land holdings (bighas), and indicator variables for the following asset: a houses is made of concrete and brick (pakka), a separate kitchen, a fan, a car/jeep/van, a tractor, scooter or motor bike, TV, toilet, fridge, electric pump set for irrigation, mobile phone, bicycle, and computer.

<sup>58</sup> I choose a behavioral measure instead of the standard measure of non-partisanship based on a lack of expressed partisanship on the party-closeness survey measure. I included non-partisanship according to the party-closeness measure as well in earlier models and found no effect.

<sup>59</sup> Swing voters are a check on the predictions of the mechanisms proposed here; I do not expect sarpanch who simply use common knowledge to be able to identify swing voters' preferences.

Regression results support the group-level implication of the *common knowledge mechanism* for vote intention and 2008 vote recall measures of guessability. This mechanism predicts that sarpanch are more likely to identify voters' partisan preferences when they belong to groups that are closely identified with one of the main political parties in Rajasthan. Using scheduled castes—a low caste group generally aligned with the Congress Party—as a baseline ethnic group,<sup>60</sup> confidence intervals show that Jats and Meenas (swing groups) are substantially more difficult to guess than core groups.<sup>61</sup> In substantive terms, coefficients on indicators for Jats and Meenas decrease sarpanch guessability rates by 5.6 and 5.4 percentage points compared to the scheduled caste category, holding income quintiles and political characteristics at their median.<sup>62</sup> I also consider the marginal effect of socio-economic status on guessability. Excluding the middle wealth quintile as a baseline, results presented in figure 3 show that guessability is significantly higher for the poorest and richest quintiles compared to the baseline middle wealth quintile. The party preferences of voters who belongs to the poorest and richest wealth quintiles are respectively 4 and 4.6 percentage points more likely to be guessed correctly than the partisan preference of a voter from the middle wealth quintile.

Moving to individual characteristics, I expected brokers to infer partisan preferences by observing voters' public displays of partisanship through political participation. Figure 3 shows that the political participation measure fails to reach statistical significance. When we move from voters with very low to very high levels of participation, the effect on guessability is approximately zero.<sup>63</sup> Finally, sarpanch are 4.4 percentage points less likely to correctly guess the partisan preferences of swing voters than voters whose vote preferences are consistent across 2008 vote recall and vote intention items. This negative coefficient holds for all regression models across both measures of guessability. In short, voter types that are easiest guess as a function of the information group membership provides on partisanship are guessed

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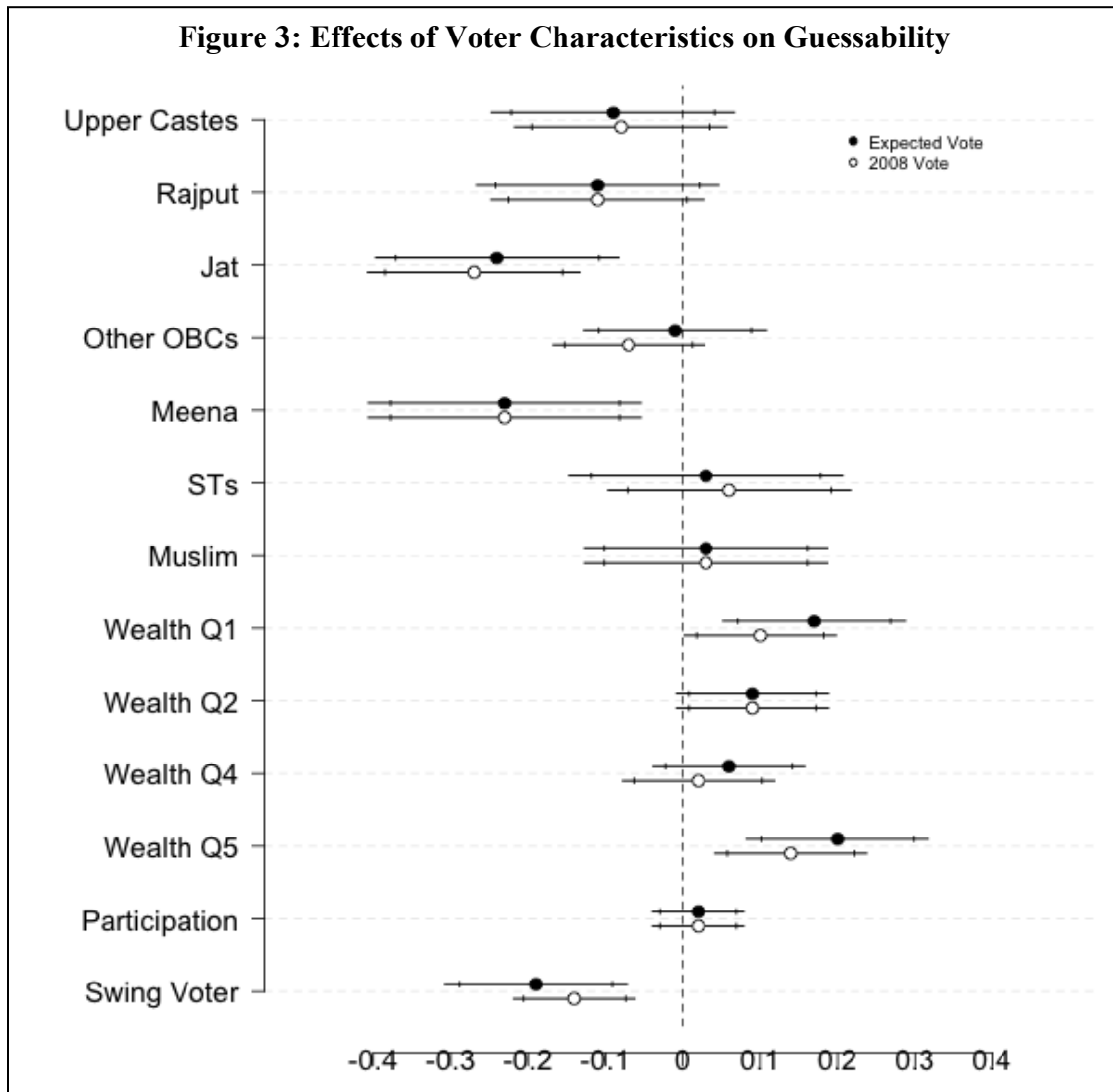
<sup>60</sup> The baseline group of scheduled castes is generally identified with the Congress Party. In his 2011 survey of Rajasthan, Thad Dunning found 75 percent of his large sample of Scheduled Castes to feel closest to the Congress Party. The result on Rajputs should be understood relative to this baseline. Interestingly this group's vote preferences are strongly toward the BJP but sarpanch guessed Rajput's partisan preferences close to 50/50 across Congress and BJP.

<sup>61</sup> These groups typically swing elections against the party in power at the state level (See Jaffrelot and Kumar 2011). For example, according to Lokniti state assembly election post-poll surveys, margins in Jat support swung from favoring the BJP by 13 percent in 2003 to supporting Congress by one percent in 2008.

<sup>62</sup> Put another way, sarpanch guessed Jats' and Meenas' vote intentions correctly 60 percent of the time as compared to 66 percent for scheduled castes.

<sup>63</sup> This holds for both guessability measures as well as models in which I include only the largest component of the participation index: rally attendance. The effect also does not differ across Congress and BJP partisans and interactions between co-partisanship and participation are not statistically significant.

substantially better than members of swing castes and swing voters who are harder to guess. We should expect an average villager or outsider—such as a member of a state politician’s staff— to employ a similar baseline mechanism with similar results.



### 6.3 Broker Quality

According to the broker quality mechanism, brokers should be able to identify partisan preferences and monitor votes through their central position in social networks and skill in collecting information on voters. If brokers provide added value in identifying voters’ partisan preferences, brokers who are more skilled than others should out-perform the baseline

*common knowledge mechanism* tested above. To test this hypothesis, I break broker quality into basic capacity (captured by education); direct or indirect experience in the GP; and connections to higher-level politicians. Education captures the basic ability a sarpanch has to navigate the gram panchayat in order to target benefits to her constituents or mobilize voters (See Besley et al. 2005; Krishna 2007; Afridi et al. 2013).<sup>64</sup> To measure education, I use an ordinal variable with a range of 0 to 13 according to years of education and divide by two standard deviations to capture large increases in education from the bottom category of illiterate. Experience captures variation in the knowledge a sarpanch has of the gram panchayat, and local political power through a sarpanch's ability to win plurality elections as ward member or sarpanch more than once.<sup>65</sup> It is also a standard measure of politician quality in political science (See Cox and Katz 1996; Bardhan and Mookherjee 2012; Afridi et al. 2013).<sup>66</sup> I measure experience directly as tenure: the number of terms a sarpanch served in the GP as either GP president or GP ward member.<sup>67</sup> As an indirect measure of experience, I create an indicator for whether or not a sarpanch respondent has a relative who currently holds elective office or did so in the past.<sup>68</sup> This measures experience because belonging to a local political family gives a sarpanch experience interacting with villagers in a political or social work capacity prior to becoming sarpanch.<sup>69</sup> Third, connections to higher-level politicians capture an element of broker quality because local brokers who have close ties to higher-level politicians are more likely to work as brokers to these politicians, and thus more likely to be incentivized to perform on guessability if this is an important part of the job of broker. I operationalize this with measures of the self-reported frequency of contact (in the past month) between sarpanch and higher-level leaders: MLAs (state legislators) and representatives of the two upper tiers of the panchayat raj system: panchayat samiti (block-level) and zilla parishad

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<sup>64</sup> Interviews with sarpanch in three Indian states suggest that poorly educated, and particularly illiterate, local politicians are often less active in political and government activities and more deferential to more educated local elites. Additionally, Krishna (2007) argues that new leaders (akin to fixers) achieve their social status because they are more educated and connected than poor villagers.

<sup>65</sup> Along similar lines, Bardhan and Mookherjee (2012) find that skill, proxied by length of tenure in office, affects the ability of lower caste voters to divert government benefits implemented by local governments to co-ethnics.

<sup>66</sup> Work in American Politics on the incumbency effect on house election posits that tenure captures unobserved political skills.

<sup>67</sup> I measure tenure in terms of both prior terms served as GP members and sarpanch because my sample is overwhelmingly comprised of first-term sarpanch. This is similarly the case in Bardhan and Mookherjee's (2006) sample, and is due the rotating quota system.

<sup>68</sup> Respondents were asked to provide details on the position, years that person held this post, and the relative involved.

<sup>69</sup> More specifically, in a context of rotating quotas along gender lines, we may expect a sarpanch who has a husband or other close family member who held elective office to draw on the experience of these family members when they make decisions.



(district level). Responses vary along a 5-point scale from zero meetings in a month to more than one meeting weekly.<sup>70</sup> Finally, I include an indicator for self-identified party activists as a proxy for motivation.<sup>71</sup> To summarize, we should expect more competent, experienced, and well-connected brokers to be better able to identify the political preferences of a wider range of voters than those with lower levels of skill along these lines.

Results presented in figure 4 do not support the expectation of the broker quality mechanism. None of the measures of basic capacity and experience achieve statistical significance at conventional levels, and they are not jointly significant according an F-test. An increase of two standard deviations in years of educational attainment—from illiterate to completion of middle school-- has no significant effect on guessability, and illiterates are statistically indistinguishable from the highly educated on guessability. Second, neither tenure nor belonging to a political family has a significant or substantial effect on guessability. Third, contact with each of three higher-level politicians has no substantive effect.<sup>72</sup>

Finally, I consider the effects of motivation and its interaction with measures of broker quality. I proxy motivation with a survey question on whether or not a sarpanch is an active party member, which is akin to an activist in the Indian context. Local politicians who self-identify as party activists are likely to exhibit strong connections to parties and partisan politicians and likely to be interested in political careers beyond the GP. If guessability is a requirement for executing a clientelistic strategy, we should expect it to be particularly high for party activists. Although active party membership has a positive effect on the 2008 vote recall measure of guessability before interactions are introduced, it does not have an independent effect for any regression on the more dependable vote intention measure.<sup>73</sup> Two interaction effects suggest, however, that activists are more motivated than non-activists. sarpanch who identify as party activists are 2.7 percentage points more likely to identify voters two standard deviations above the mean on the participation index, which refers to those who participated in

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<sup>70</sup> These responses are inflated with a mean of one meeting per month for all three politicians. To correct for this, I create a standardized variable weighted by two standard deviations to capture significant increases in the frequency of sarpanch-reported meetings above the mean. There is substantial variation on these variables with a standard deviation of approximately one point on the ordinal scale for measures of contact with each of the three higher-level politicians.

<sup>71</sup> Note that this is not a measure of broker quality but motivation.

<sup>72</sup> The only effect that reaches statistical significance is contact with a state assembly legislator (MLA), which is negative.

<sup>73</sup> Only the interaction between party activists and belonging to a political family shows a substantially large interaction effect. Activists from political families perform better than activists who do not belong to political families by 2.3 percentage points, all else equal.

3 to 4 (of 4) types of public political participation. Activists from political families also perform better than activists who do not belong to political families by 2.3 percentage points.

Taken together, my results show that the low level of guessability I find relative to theory and low-information benchmarks is not a function of low quality sarpanch who lack incentive or basic capacity to perform on guessability. While those who are self-identified activists from political families—arguably the most politicized category of sarpanch—perform better on guessability, these effects are small relative to the predictive power of the baseline model. This is consistent with the argument of this paper the monitoring assumption is implausible with respect to those outside of brokers' local partisan networks where there is a secret ballot and inter-party competition.

#### 6.4 *Co-Partisan Networks*

Finally, the co-partisan networks mechanism suggests that a sarpanch will be more likely to guess a voter's partisan preference when he belongs to the same local co-partisan network. Rather than investing effort to identify voters' privately held partisan preferences, I posit that brokers know co-partisan voters' preferences because they routinely reveal their preferences as a cost of entry and integration into local partisan networks. I consider a voter to be a member of a sarpanch's co-partisan network when they share partisan preferences according to a party-closeness measure asked to both voters and sarpanch.<sup>74</sup>

Confidence intervals presented in figure 4 support the implication of the co-partisan networks mechanism for guessability.<sup>75</sup> A sarpanch is 3.2 percentage points more likely to correctly guess a voter's partisanship if he is a co-partisan than if he is a non-co-partisan. To further demonstrate the impact of co-partisan ties on guessability, I estimate the effects of interactions, which I present in confidence intervals in figure 5.<sup>76</sup> These results show that co-partisanship has a large, positive effect when interacted with variables that had large, negative coefficients in earlier models. First, co-ethnicity has a substantively large and significant effect

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<sup>74</sup> Note that I do not measure whether a voter is in a sarpanch's inner circle in this network. The expectation is that when a voter share partisan preferences he is more likely to interact routinely with a sarpanch and other leaders in a local partisan network. He is also particularly incentivized to reveal his partisan preferences to the sarpanch—particularly when he needs favors or benefits from the GP—which I understand as the costs of entry to local partisan networks in this paper.

<sup>75</sup> Note that figure 4 shows confidence intervals from a regression model that includes measures from the common knowledge mechanism (not shown), measures of broker quality, and co-partisanship.

<sup>76</sup> See model 3 in tables A7 and A8 in the appendix for multi-level regression tables.

when it is interacted with co-partisanship, although it has no independent effect in regressions presented in figure 4. Substantively, the probability of correctly identifying the partisan preference of a voter who shares partisanship and co-ethnicity (on the vote intention measure) is 6.7 percentage points higher than would be the case for a co-ethnic voter who is not a co-partisan, all else equal.

Second, coefficients on interactions between co-partisanship and indicators for swing group, Jats and Meenas, flip dramatically to large and positive in regressions on both measures of guessability. These coefficients are inefficiently estimated, but show large positive point estimates for groups identified as least guessable in tests of the common knowledge mechanism. Evidence is also consistent with the co-partisan networks mechanism when we consider interactions between co-partisanship and contact between the GP President and panchayat samiti (block) representative-- the politician one level above the sarpanch.<sup>77</sup> When co-partisanship is taken into account, the effect of panchayat samiti contact flips from negative to positive and the effect is large and statistically significant across both measures of guessability. Among sarpanch who report meeting his panchayat samiti member representative weekly or more often, which is two standard deviations above the mean, the probability of correctly identifying the partisan preference of a co-partisan voter is 3.7 percent points higher than would be the case at the same level of contact if the voter was a partisan of another political party. This suggests that political connections impact guessability when we locate them within co-partisan networks but not otherwise. Finally, I included interactions between co-partisanship and attendance at party rallies and placing a party flag in front of one's home respectively to the regression model presented in figure 4.<sup>78</sup> I found no effect for either of these. I argued in section 2.2 that the high level of information brokers possess on voters preferences through routine interaction should make these rarer events inconsequential for guessability.<sup>79</sup>

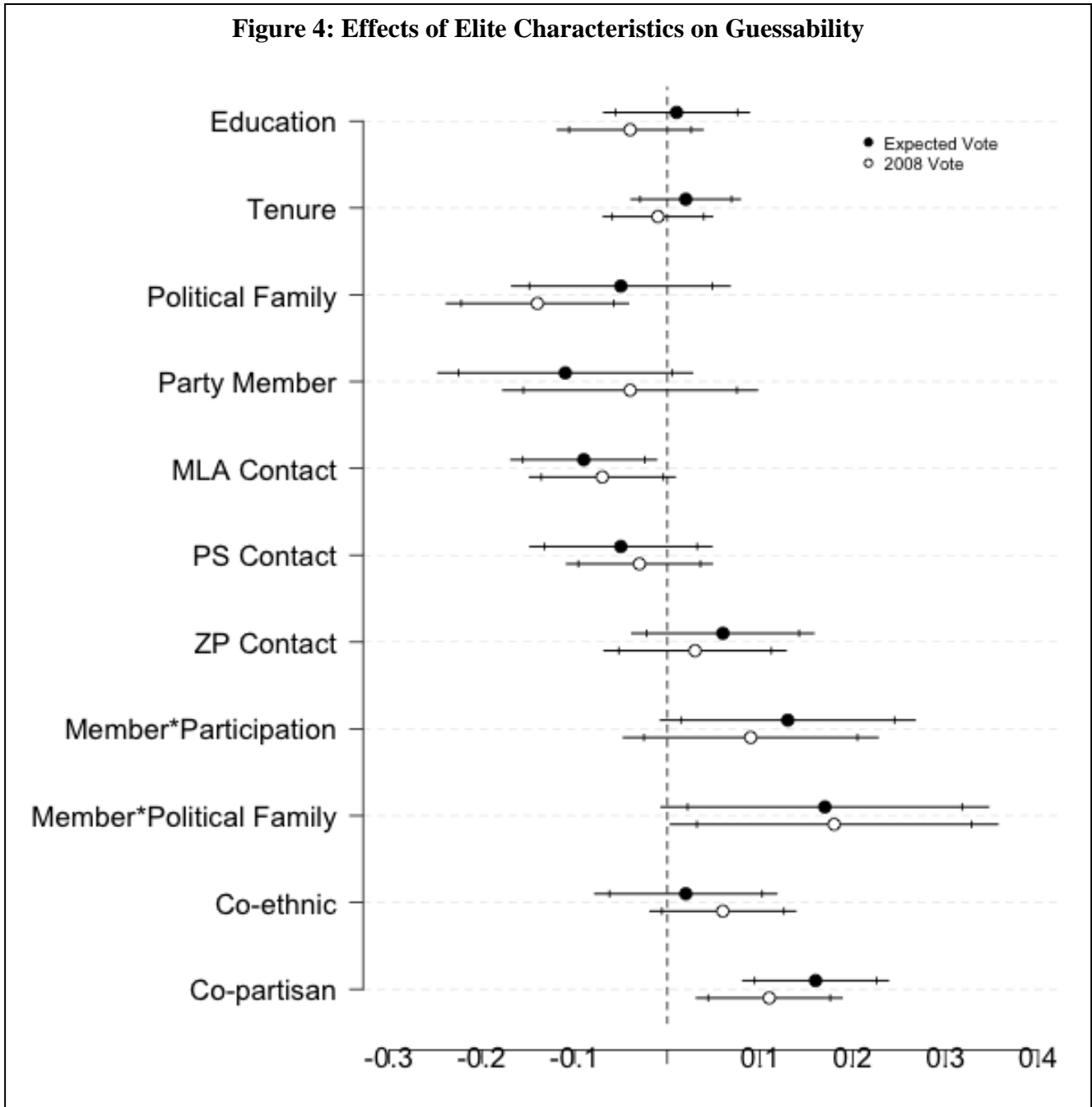
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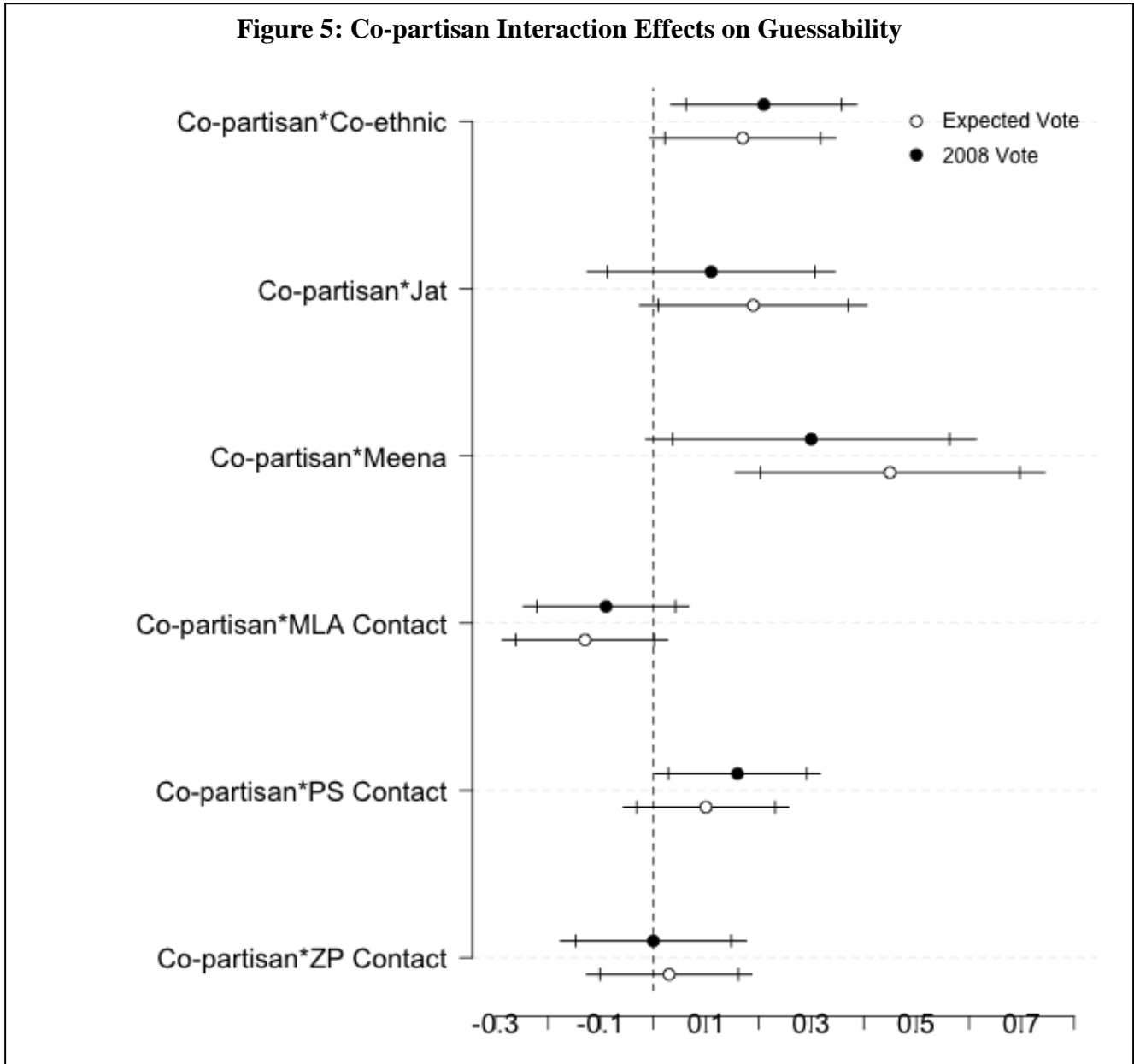
<sup>77</sup> Note that education and measures of political experience do not have an impact as interactions or main effects.

<sup>78</sup> I do not include this result here. These results are available upon request.

<sup>79</sup> I also find no effect on voter turnout, however this is largely do to the small number of co-partisan non-voters (under 30) and their ethnic characteristics.

Figure 4: Effects of Elite Characteristics on Guessability





To summarize, evidence broadly suggests that guessability can be explained by two low information mechanisms: default guessability and co-partisan networks. Employing the common knowledge mechanism, sarpanch make educated guesses about voters' partisan preferences according to their priors on the distribution of partisan preferences among voters' group identities. Sarpanch are also better at guessing the partisan preferences of voters located in their co-partisanship networks. The lack of an effect of co-ethnicity on guessability suggests that the co-partisanship effect fits the political networks mechanism rather than being a

function of familiarity between sarpanch and voters who share social characteristics. Evidence does not support the assumption that savvy brokers effectively extract private information on voters' political preferences despite the secret ballot.

It is important to understand the practical significance of these results. First, the larger point that guessability is low outside of partisan networks holds. Under the circumstances in which voter and elite characteristics make guessability highest—scheduled caste voters from the poorest wealth quintile with high political participation and sarpanch who are activists with relatives in politics—guessability does not exceed 71 percent. In more typical cases, guessability falls below 64 percent, which is the percentage of correct guesses in the pooled sample. Second, we should compare results against a baseline of 64 percent, which is the predicted guessability rate for an OBC middle-income voter based on the regression model presented in figure 4. Relative to this baseline, the observable implications of the information shortcuts mechanism show large effects with guessability rates dropping 6 percentage points when the voter comes from a swing group and increasing 4 percentage points when he comes from the most guessable top or bottom wealth quintiles. The effect on guessability of belonging to a GP President's partisan network—proxied by co-partisanship—is substantively large at 4 percent before exploring interactions. This increases, even for difficult to guess groups, when we take interactions between co-partisanship and elite and voter characteristics into account as displayed in figure 5. Guessability increases dramatically when interactions with co-ethnicity and contact with the panchayat samiti member are interacted with co-partisanship.

## 7. Discussion

This paper suggests that sarpanch—my proxy for brokers—perform poorly at identifying voters' partisan preferences with the exception of those whose preferences require the least effort to identify. Even in competitive settings where the incentive to perform on guessability should be palpable, there is little evidence that this is the case. Instead, guessability varies with group characteristics that make voters broadly guessable to brokers and non-brokers alike. The results of this paper are consistent with two interpretations: that brokers fail at a central task party leaders expect them to perform, and that brokers invest minimal effort in guessability because party leaders only expect them to organize voters into local networks. If the latter interpretation is true, we should expect party leaders to pursue strategies that do not depend on guessability such as the allocation of benefits to aggregate units (e.g. polling stations),

targeting based on simple decision rules, or indiscriminate targeting. Recent evidence from Mexico (Diaz-Cayeros et al. 2012), Argentina (Stokes et al. 2013; Calvo and Murillo 2013), Kenya (Kramon 2011), and Brazil (Zucco 2013) suggest that parties rely less and less on strategically targeted and monitored vote buying.<sup>80</sup> An alternative strategy is to primarily target voters integrated into co-partisan networks, whose preferences are known (See Calvo and Murillo 2013). If the former interpretation that brokers are motivated to perform on guessability and monitor votes is true, this paper shows that even those sarpanch who have characteristics that make them most likely to be effective brokers fail at this task.

### 7.1 *Does Guessability Travel?*

I expect my main results for Rajasthan to hold across Indian states, and the three mechanisms I propose to explain variation in guessability across Indian states and countries. I locate Rajasthan among other cases by considering the *common knowledge* and *co-partisan networks* mechanisms in the aggregate. First, we should expect guessability to be higher according to the common knowledge mechanism when ethnic groups are polarized across parties. Suryanarayan and Huber's (2013) analysis of group polarization show that Rajasthan is a typical case with respect to caste polarization across parties (See also Heath 2005).<sup>81</sup> Voters in states with more ethnically polarized systems such as Uttar Pradesh and Assam may be easier to guess by this mechanism while voters in less ethnically polarized states such as Tamil Nadu and Maharashtra will be more difficult to guess (See Sircar and Vaishnav 2010; Palshikar et al. 2009). We should also expect guessability to vary with the level of ethnic polarization across countries (See for example Ferree 2006; Huber 2012).

Second, we should expect guessability to be higher where parties possess organized machines that reach the local level, which increases the chance that a voter is integrated into a partisan network (See Freidenberg and Levitsky 2006; Nichter and Palmer-Rubin 2013). While

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<sup>80</sup> Vincente (2008) finds that voters who accept handouts in election campaigns can be easily persuaded to vote as they wish (See also Hicken et al. 2012). Banerjee's (2014) ethnographic work and my own discussions similarly suggest that voters tell party activists who provide handouts that they will give them their vote with little intention of doing so.

<sup>81</sup> Rajasthan falls at the middle of the distribution on Huber's Group Vote Polarization (GVP) across Indian states (based on 1999 and 2004 parliamentary elections post-poll data). GVP captures the extent to which a group's vote is polarization across parties, aggregated to the level of Indian states and takes the number and size of groups and parties into account.

parties in Rajasthan lack this level of local organization, Chhibber et al. (2012) code Rajasthan's party system as among the most organized (at the district level) in India and the most organized in North India. This suggests that guessability is unlikely to be worse in Rajasthan than in most Indian states. Moreover, recent work conducted during the 2006 state elections in West Bengal suggests that vote preferences are difficult to predict even in a state where the Communist Party (Marxist) established a party machine over 40 years in power (See Bardhan and Mookherjee 2014; Sircar 2014).

In short, guessability is likely to be low throughout India where parties generally lack organized machines; this is also modally the case in developing democracies around the world. Broadly speaking, where elections do not resemble ethnic censuses at the local level and parties lack organized machines, we should expect guessability to be low.

## 7.2 *Implications*

This paper has important implications for the study of distributive politics in India and other developing countries. While guessability is a strong assumption in canonical cases of clientelistic party machines such as Argentina and Mexico, this paper strongly suggests that we should be skeptical that brokers can monitor votes or efficiently target benefits on a quid pro quo basis. An implication of low guessability is that brokers should mobilize votes and target selective benefits through co-partisan networks within which guessability is high. I show that this is the case in two subsequent papers from this survey project. Using a behavioral measure, Schneider and Sircar (2014) find that sarpanch strongly prefer to target co-partisans with selective benefits. Using a vignette experiment that cues partisanship with real local politicians, Schneider (2014) finds that co-partisan voters are substantially more likely to expect jobs and welfare benefits when the sarpanch is a co-partisan. This work all points to the prominence of a strategy of core targeting through local co-partisan networks.

## 8. **Conclusion**

Theory in the clientelism literature suggests that brokers perform an essential information-gathering role that party leaders cannot perform. This makes local agents indispensable. Evidence presented here suggests that local brokers do not perform as well as theory predicts, or as well as inexpensive, low-information alternatives that require only



information on basic demographics or polling data that party leaders can easily access or collect themselves. If party leaders in state capitals and legislators and staff sitting in constituency offices can out-perform sarpanch on guessability, scholars would be wise to look beyond the coercive quid pro quo logic of clientelism. Instead, it may be more prudent for them to explore theories that explain how parties, politicians, and their local brokers attract and retain voter support where there is a secret ballot and genuine, if not necessarily programmatic, democratic competition that shapes the behavior of voters and politicians alike. Here, the challenge parties face is how to respond to rising demands for governance and selective benefits in an environment where accountability is not perverse.

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## Appendix A: Tables

**Table A1: Descriptive Statistics—Sarpanch**

	<b>Mean</b>	<b>SD</b>
Male	0.54	0.5
Upper Castes	0.25	0.43
Other Backward Castes	0.37	0.48
Scheduled Castes	0.2	0.4
Scheduled Tribes	0.18	0.38
Illiterate	0.18	0.38
Primary School Education	0.24	0.43
Middle School Education	0.2	0.4
Secondary (includes matriculation)	0.19	0.392
Post-Secondary	0.19	0.39
Land Holdings Scale	5.98	3.3
Active Party Members	0.39	0.49
Prior Terms Served as GP President	0.14	0.47
Prior Termed Served as GP Member	0.38	0.65
BJP Supporters	0.32	0.47
Congress Supporters	0.63	0.48
Participation in Canvassing	0.92	0.28
Relatives in politics	0.45	0.5

**Table A2: Descriptive Statistics—Voters**

	<b>Mean</b>	<b>SD</b>
Male	0.99	0.096
Upper Castes	0.095	0.293
Rajputs	0.113	0.316
Jats	0.096	0.295
Other Backward Castes (OBCs)	0.319	0.466
Scheduled Castes (SCs)	0.48	0.355
Scheduled Tribes (STs)	0.063	0.244
Muslims	0.102	0.303
Land	3.1	2.64
Illiterate	0.36	0.48
Primary School Educated	0.24	0.43
Middle School Educated	0.22	0.42
Secondary School (Includes Matriculation)	0.35	0.53
Post-Secondary School	0.09	0.28
Voter Turnout in 2008 State Elections	0.91	0.29
Partisans	0.75	0.43
Swing Voters	0.17	0.37
Share Volunteer in Political Campaigns	0.29	0.45
Share Attend Party Rallies	0.29	0.45
Relatives of Sarpanch	0.05	0.22
Friends of Sarpanch	0.15	0.36

**Table A3: GP President Guessability Across Caste and Gender (%)**

Group	Male	Female	Overall
Forward Castes	75.5 (98)	72.5 (120)	73.9 (218)
Other Backward Castes	55.6 (153)	56.4 (133)	55.9 (286)
Scheduled Castes	71 (93)	61.6 (73)	69.3 (166)
Scheduled Tribes	75.3 (88)	64.6 (48)	61.8 (136)
Total (%)	(477)	(402)	(879)

\*I provide the percent of correct guesses left of apprentices; the number of observations are in apprentices.

**Table A4: Sarpanch Polling Data Benchmark-Based and Observed Guessability**

	<b>Margin</b>	<b>BJP</b>	<b>Congress</b>	<b>Others</b>	<b>Guessability (w/ Decision Rule)</b>
Upper Castes	31.5%	172 (138)	0 (32)	0 (2)	80.2% (172)
Jats	6%	38 (48)	38 (26)	0 (2)	84.2% (76)
Gurjars	15%	23 (33)	23 (13)	0 (0)	78.2% (46)
Other OBCs	23%	210 (133)	0 (70)	0 (7)	63.3% (210)
Scheduled Castes	15.5%	0 (34)	129 (92)	0 (3)	71.3% (129)
STs	12%	49 (47)	49 (51)	0 (0)	98% (98)
Muslims	62%	0 (21)	75 (53)	0 (1)	70.7% (75)
<b>Guessability Rate</b>	<b>NA</b>	<b>83.7 % (453)</b>	<b>68.9% (338)</b>	<b>0% (15)</b>	<b>75.9% (806)</b>

\*Margin is the average difference in vote share between Congress and BJP across these subgroups according to Lokniti's 2008 Rajasthan State Assembly Post-Poll Survey. Numbers in parentheses are observed numbers of voters based on a vote intention item in the voter survey. Numbers left of the parenthesis indicate the share of voters one would guess to support each party based on the decision rule benchmark that uses Lokniti polling data. I restrict the observed data to the observations used in the guessability measure for the sake of comparability.

**Table A5: Sarpanch Guessability (Vote Intention): Common Knowledge Mechanism**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
(Intercept)	0.61 (0.06)	0.60 (0.06)	0.61 (0.06)
Upper Castes	-0.08 (0.08)	-0.08 (0.08)	-0.09 (0.08)
Rajput	-0.09 (0.07)	-0.09 (0.07)	-0.11 (0.08)
Jat	-0.25 (0.08)	-0.25 (0.08)	-0.24 (0.08)
OBC	-0.01 (0.06)	-0.01 (0.06)	-0.01 (0.06)
Meena	-0.21 (0.09)	-0.21 (0.09)	-0.23 (0.09)
ST	0.05 (0.09)	0.05 (0.09)	0.03 (0.09)
Muslim	0.01 (0.08)	0.01 (0.08)	0.03 (0.08)
Wealth Quintile 1	0.15 (0.05)	0.15 (0.05)	0.17 (0.06)
Wealth Quintile 2	0.09 (0.05)	0.09 (0.05)	0.09 (0.05)
Wealth Quintile 4	0.04 (0.05)	0.04 (0.05)	0.06 (0.05)
Wealth Quintile 5	0.19 (0.05)	0.18 (0.05)	0.20 (0.06)
Participation		0.01 (0.03)	0.02 (0.03)
Swing Voter			-0.19 (0.06)
Log Likelihood	-540.73	-543.14	-493.95
Num. obs.	806	806	739
Num. groups: GP number	92	92	92
Variance: GP number (Intercept)	0.02	0.02	0.02
Variance: Residual	0.20	0.20	0.19

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

\*This table presents results from multi-level regressions of voter characteristics on the vote intention measure of guessability. All independent variables are indicators with the exception of participation, which is an index variable.

**Table A6: Sarpanch Guessability (2008 Vote) Common Knowledge Mechanism**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
(Intercept)	0.67 <sup>***</sup>	0.66 <sup>***</sup>	0.68 <sup>***</sup>
	(0.06)	(0.06)	(0.06)
Upper Castes	-0.09	-0.09	-0.08
	(0.07)	(0.07)	(0.07)
Rajput	-0.10	-0.10	-0.11
	(0.07)	(0.07)	(0.07)
Jat	-0.27 <sup>***</sup>	-0.27 <sup>***</sup>	-0.27 <sup>***</sup>
	(0.07)	(0.07)	(0.07)
OBC	-0.08	-0.08	-0.07
	(0.06)	(0.06)	(0.05)
Meena	-0.24 <sup>***</sup>	-0.24 <sup>***</sup>	-0.23 <sup>***</sup>
	(0.09)	(0.09)	(0.09)
ST	0.06	0.06	0.06
	(0.09)	(0.09)	(0.08)
Muslim	0.01	0.01	0.03
	(0.08)	(0.08)	(0.08)
Wealth Quintile 1	0.09 <sup>*</sup>	0.09 <sup>*</sup>	0.10 <sup>*</sup>
	(0.05)	(0.05)	(0.05)
Wealth Quintile 2	0.09 <sup>*</sup>	0.09 <sup>*</sup>	0.09 <sup>*</sup>
	(0.05)	(0.05)	(0.05)
Wealth Quintile 4	0.01	0.01	0.02
	(0.05)	(0.05)	(0.05)
Wealth Quintile 5	0.14 <sup>***</sup>	0.14 <sup>***</sup>	0.14 <sup>***</sup>
	(0.05)	(0.05)	(0.05)
Participation		0.02	0.02
		(0.03)	(0.03)
Swing Voter			-0.14 <sup>***</sup>
			(0.04)
Log Likelihood	-552.88	-555.18	-551.73
Num. obs.	831	831	831
Num. groups: GP number	92	92	92
Variance: GP number (Intercept)	0.02	0.02	0.02
Variance: Residual	0.20	0.20	0.19

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

\*This table presents results from multi-level regressions of voter characteristics on the 2008 vote recall measure of guessability. All independent variables are indicators with the exception of participation, which is an index variable.

**Table A7: Sarpanch Guessability (Vote Intention): Elite Characteristics**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
(Intercept)	0.62 <sup>***</sup>	0.66 <sup>***</sup>	0.60 <sup>***</sup>	0.61 <sup>***</sup>
	(0.07)	(0.07)	(0.07)	(0.07)
Tenure	-0.01	0.00	0.02	0.01
	(0.03)	(0.03)	(0.03)	(0.03)
Political Family	0.02	-0.05	-0.06	-0.05
	(0.05)	(0.06)	(0.06)	(0.05)
Activist	0.05	-0.11	-0.10	-0.11
	(0.05)	(0.07)	(0.07)	(0.07)
MLA Contact	-0.10 <sup>**</sup>	-0.10 <sup>**</sup>	-0.08 <sup>*</sup>	-0.06
	(0.05)	(0.04)	(0.04)	(0.05)
PS Member Contact	-0.04	-0.04	-0.04	-0.12 <sup>**</sup>
	(0.05)	(0.05)	(0.05)	(0.06)
ZP Member Contact	0.03	0.06	0.06	0.10 <sup>*</sup>
	(0.05)	(0.05)	(0.05)	(0.06)
Activist * Participation		0.15 <sup>**</sup>	0.13 <sup>*</sup>	0.13 <sup>*</sup>
		(0.07)	(0.07)	(0.07)
Activist * Political Family		0.19 <sup>*</sup>	0.17 <sup>*</sup>	0.17 <sup>*</sup>
		(0.10)	(0.09)	(0.09)
Co-ethnic			0.02	-0.04
			(0.05)	(0.06)
Co-partisan			0.16 <sup>***</sup>	0.09 <sup>*</sup>
			(0.04)	(0.05)
Co-partisan * Co-ethnic				0.20 <sup>**</sup>
				(0.09)
Co-partisan * Jat				0.11 <sup>*</sup>
				(0.12)
Co-partisan * Meena				0.28 <sup>*</sup>
				(0.16)
Co-partisan * MLA Contact				-0.09
				(0.08)
Co-partisan * PS Contact				0.17 <sup>**</sup>
				(0.08)
Co-partisan * ZP Contact				0.00
				(0.09)
Log Likelihood	-505.87	-504.96	-500.31	-499.92
Num. obs.	739	739	739	737
Num. groups: GP number	92	92	92	92
Variance: GP number.(Intercept)	0.02	0.02	0.01	0.01
Variance: Residual	0.20	0.20	0.19	0.19

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

This paper presents results from multi-level regressions of dyadic characteristics, elite characteristics, and interactions on the vote intention measure of guessability. Voter level characteristics included in table 5 are included but not shown here.

**Table A8: Sarpanch Guessability (2008 Vote): Elite Characteristics**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
(Intercept)	0.72 <sup>***</sup>	0.75 <sup>***</sup>	0.70 <sup>***</sup>	0.71 <sup>***</sup>
	(0.06)	(0.06)	(0.06)	(0.07)
Tenure	-0.03	-0.02	-0.02	-0.02
	(0.03)	(0.03)	(0.03)	(0.03)
Political Family	-0.06	-0.13 <sup>**</sup>	-0.13 <sup>**</sup>	-0.13 <sup>**</sup>
	(0.04)	(0.05)	(0.05)	(0.05)
Activist	0.07	-0.06	-0.05	-0.05
	(0.05)	(0.07)	(0.07)	(0.07)
MLA Contact	-0.08 <sup>*</sup>	-0.08 <sup>*</sup>	-0.07	-0.03
	(0.04)	(0.04)	(0.04)	(0.05)
PS Member Contact	-0.02	-0.02	-0.03	-0.08
	(0.05)	(0.05)	(0.04)	(0.05)
ZP Member Contact	-0.01	0.01	0.02	0.04
	(0.05)	(0.05)	(0.05)	(0.06)
Activist * Participation		0.09	0.08	0.09
		(0.07)	(0.07)	(0.07)
Activist * Political Family		0.19 <sup>**</sup>	0.17 <sup>**</sup>	0.16 <sup>*</sup>
		(0.09)	(0.09)	(0.09)
Co-ethnic			0.06	0.03
			(0.04)	(0.05)
Co-partisan			0.11 <sup>***</sup>	0.04 <sup>*</sup>
			(0.04)	(0.05)
Co-partisan * Co-ethnic				0.16 <sup>*</sup>
				(0.09)
Co-partisan * Jat				0.19
				(0.12)
Co-partisan * Meena				0.44 <sup>***</sup>
				(0.15)
Co-partisan * MLA Contact				-0.12 <sup>*</sup>
				(0.07)
Co-partisan * PS Contact				0.10
				(0.08)
Co-partisan * ZP Contact				0.04
				(0.08)
Log Likelihood	-561.18	-561.34	-560.77	-561.39
Num. obs.	831	831	831	828
Num. groups: GP number	92	92	92	92
Variance: GP number.(Intercept)	0.02	0.02	0.01	0.01
Variance: Residual	0.19	0.20	0.20	0.19

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

\*This paper presents results from multi-level regressions of dyadic characteristics, elite characteristics, and interactions on the vote intention measure of guessability. Voter level characteristics included in table 5 are included but not shown here.



## **Appendix B: Missing Values, Data Restrictions and Guessability.**

The statistical analysis and aggregate statistics on guessability presented in sections 5 and 6 are based on a restricted measure to ensure that guessability rates are not deflated where voter responses on the vote intentions and 200 state assembly vote choice items may be suspect. This makes my measurement of guessability a conservative upper bound. In this section, I report and describe the restrictions applied here as well as missing data.

I demonstrate that missing values on vote choice in the voter survey do not bias results. I break this down into voter survey non-response due to a failure or refusal to mark the secret ballot survey instrument for past and expected vote choice and elite respondent non-response. First, 89 observations drop out of the 2008 state assembly elections measure of guessability because they report that they did not vote in that election. Only one respondent who reported that he turned out to vote is missing because he failed to complete the 2008 state assembly elections secret instrument. Second, 909 of 959 respondents marked a party preference on the vote intention survey instrument-- which is the basis of my regression analysis of guessability-- leaving 50 missing values. Twenty of the respondents who did not provide a vote intention reported that they did not turn out to vote in the previous state elections. 19 of the remaining 30 missing values distributed across 20 gram panchayats explicitly stated that they would not choose a party before knowing the candidate running in their constituency,<sup>82</sup> only 3 of these 19 professed partisanship toward any party, and 5 of the 11 of 30 missing values who turned out in 2008 professed any partisanship. This suggests that missing values in the voter survey are the result of either non-voters or swing voters. I expect that including these observations if values could have been obtained would reduce guessability rates further. This means that my results may show guessability to be slightly higher than might be the case without missing values on vote intentions.

Next I explain further restrictions to the data included in this analysis. First, three sarpanch refused to answer most question on political characteristics as well as approximately all questions on political and economic attributes of voters cross-referenced in the elite survey. Elite non-response is coded as a failure to guess a voter's vote choice or vote intention when the voter provided this information. One alternative is to simply consider these elites as thoroughly uninformed and to code all non-response pertinent to guessability as a mistake. However, the plausible possibility that these individuals were simply uncooperative and thus a poor representative of the pool of brokers I aim to generalize to, led me to drop these from the analysis. Finally, 68 respondents from the voter survey reported a third party vote intention after reporting that voted for one of the two major parties in 2008. Given the nature of Rajasthan's two-party system, I suspect that third party answers in this case are akin to missing values among respondents. It is plausible in this case that respondents felt that they should mark the secret ballot vote instrument, rather than leave it blank, but did not mark a valid preference. Until further analysis of these individuals, I drop them from the analysis on these grounds. I keep those who marked a third party for both the 2008 vote choice item and vote intention.

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<sup>82</sup> These respondents can be considered swing voters. Only 3 of these 19 who said they would wait for candidates to be named professed partisanship toward any party. Only 5 of the remaining 11 missing values (among voters who turned out in 2008) professed any partisanship.

## **Appendix C: Robustness Checks on Endogeneity of Broker Quality Null Result**

I conducted a robustness check to evaluate whether or not the null result on broker quality discussed in section 6.3 is due to a correlation between the difficulty of identifying voters' partisan preferences and broker quality. If weak performance on guessability occurs because the most talented brokers were elected in GPs with the hardest to predict voters (e.g. the most swing voters), broker quality might positively affect performance on guessability if this endogeneity were removed. This relationship between electoral competition is plausible according to political economy literature which argues that political competition, like economic competition, drives up the quality of politicians and raises the political costs of poor performance (See De Paola and Scoppa 2011; Ashworth et al. 2006).

To assess whether or not there is an empirical basis to this concern with respect to sarpanch in my study, I ran a series of simple bivariate regressions on the difficulty of guessing voters' partisan preferences in a GP as a whole and measures of broker quality. To measure the difficulty of guessing voters' political preferences as a GP characteristic, I draw upon the average difference in self-reported vote choice according to CSDS 2003 and 2008 state assembly election post-poll surveys. I calculate the average party distance of sampled voters in a GP on this measure to capture the difficulty of partisan identifiability as a GP characteristic. I also calculated the number of correct guesses across GPs on my guessability measure to test for a direct relationship between guessability and measures of broker quality. I find no statistically significant results in any of these regressions.<sup>83</sup> The measure of motivation—active party membership—shows that a sarpanch is more likely to be a party member where competition is lower. In short, blunt statistical tests suggest that there is no empirical basis to the concern that broker quality and the difficulty of guessability are correlated.

This result is not surprising when we consider the logic. Candidates for sarpanch must live in the GP in which they contest. This means that parties do not have the ability to allocate broker quality as a function of electoral uncertainty. There is also good reason to doubt such a strategy would be effective if it were legal a sarpanch elections are highly personal, which makes it difficult for an outsider to develop a network of support. Therefore, if the selection problem existed, it would have to be the case that parties or local patrons—given that party symbols are banned in GP elections and parties do not have the power to nominate candidates—backed higher quality candidates for sarpanch in more competitive GPs than in less competitive GPs or that there are more high quality local leaders in more competitive GPs than in less competitive GPs. This is unlikely to be a substantial concern for several reasons. First, a policy of rotating quotas makes it extremely unlikely that a sarpanch will be in power for more than one term. In my data, 90 percent of sarpanch held that office for the first time. This means that there would have to be a pool of higher quality sarpanch candidates in less guessable GPs conditional on the ethnic quota in place at a given term. Since parties are widely understood to be poorly organized and do not have formal control over who is on the ballot, it is not clear that such a vetting process exists nor is there good reason to expect the distribution on leader quality to vary across more and less competitive GPs. Finally, the position of sarpanch has limited

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<sup>83</sup> I also find no relationship between measures of broker quality and whether the GP was highly competitive or somewhat competitive. Recall that this was coded according to block party leaders' assessments and is the only measure of variation in competition in my survey. I only sampled somewhat or very competitive GPs.

resources at its disposal and significant but limited discretion over the allocation of these resources (See Chauchard 2014; Schneider and Sircar 2014). Although sarpanch have discretion over local infrastructure projects and the selection of beneficiaries for welfare programs, state and federal governments often try to minimize local control to the extent possible. For this reason, it is not clear that the most talented leaders in a GP—who may have alternative career options—are more likely to choose to contest in more competitive GPs (See Manor 2000). The null result of individual and joint measures of broker quality on guessability appears robust to this concern.