

What Drives the Swing Voter in Africa?

Keith R. Weghorst University of Florida
Staffan I. Lindberg University of Gothenburg and University of Florida

What makes African voters “up for grabs”? Existing approaches to the swing voter have several liabilities. This article introduces a new measure enabling a more comprehensive assessment of swing voting, including the differentiation between clientelistic and collective goods motivations. The issue of swing voting is then brought to an environment where voters are rarely considered persuadable: Africa. Using a count-model estimation technique and original survey data from Ghana’s critical 2008 elections, the analysis challenges the near consensus in African politics on clientelism as the only electoral strategy. When voters perceive politicians as providing collective, developmental goods, the efficacy of clientelism as a tool to win over voters is reduced. Many persuadable voters can also be won over by both clientelistic and collective goods, thus contradicting the literature presenting these as mutually exclusive. Finally, the analysis shows that incumbents do better when they provide collective goods even in highly clientelistic environments.

What makes voters “up for grabs” in elections? The question of how parties and candidates win over persuadable voters has received extensive attention in competitive elections and developed democracies around the world. This article brings the literature to the context of a new democracy in Africa—a continent where political competition exists alongside widespread clientelism, poor developmental performance, and programmatically weak parties (van de Walle 2003). Voters in these emerging democracies are typically assumed to vote based on ethnic cleavages (e.g., Burnell 2001; Nugent 2001; Posner 2005) or entrenched clientelistic networks (e.g.,

Vicente 2010), rather than based on the performance of politicians in delivering collective or public goods. Swing voting—that a voter’s ballot is up for grabs for any number of political parties—should thus be an empirical anomaly, especially along nonclientelistic lines. And yet, elections in a number of new African democracies are increasingly competitive. At the end of 2010, 33 African countries had conducted three or more successive elections without interruption, and about 30% of the continent had experienced legislative and/or executive turnovers (Lindberg 2009b; Weghorst and Lindberg 2011).¹ Even where dominant parties prevail, their representatives frequently do not: the reelection rate of legislative seat

Keith R. Weghorst is a PhD Candidate in Political Science, University of Florida, P.O. Box 117325, Gainesville, FL 32611 (keith.weghorst@ufl.edu). Staffan I. Lindberg is Associate Professor of Political Science, University of Gothenburg, P.O. Box 711, 405 30 Gothenburg, Sweden (xlista@gu.se) and Associate Professor of Political Science, University of Florida (sil@ufl.edu).

The data used for the analysis and a replication file can be downloaded from the *AJPS* Data Archive on Dataverse: <http://dvn.iq.harvard.edu/dvn/dv/ajps>. The authors wish to acknowledge insightful comments on earlier versions from four distinctively constructive and helpful reviewers and from the editors, as well as from Leonardo Arriola, Michael Bernhard, Younhok Choe, Gary Cox, Philip Keefer, Ellen Lust, Kristin Michelitch, Susan Stokes, and participants in both the Quality of Government Institute’s research group at University of Gothenburg and the Comparative Politics Colloquium at the Department of Political Science, University of Florida. A special thanks is extended to Won-Ho Park and Dominic Lisanti for initial help with the count-models. The data collection was sponsored by a grant from the Africa Power and Politics Programme funded by the UK Department for International Development (DFID). The survey was carried out by Staffan I. Lindberg in collaboration with research officers at Center for Democratic Development-Ghana, and we wish to recognize the excellent work by the 49 fieldwork assistants. Staffan I. Lindberg’s time spent on the project has also been partially funded by a grant from Riksbankens Jubileumsfond (co-PIs Bo Rothstein and Sören Holmberg). As always, the content, errors, omissions, and flaws of the text are the responsibility of the authors.

¹Lindberg’s (2009b) data cover elections from 1989 to 2006 and document 25 presidential and 29 legislative elections resulting in complete turnovers spread over 21 countries. Admittedly, many of these are instances of alternation in first (“founding”) elections, but even excluding those, the numbers are significant: 10 presidential and nine legislative elections resulting in executive and/or legislative alternations in power in 10 countries. Since 2007, turnovers have occurred in three more countries.

American Journal of Political Science, Vol. 00, No. 00, 2013, Pp. 1–18

holders is often lower than 50% in African elections (Barkan 2009).²

This article makes three contributions. It offers a count measure to the swing-voting literature that combines behavioral measures of past voting with a series of attitudinal items aimed to capture latent propensities to swing vote in order to place voters on a continuum of more or less persuadable. This measure importantly differentiates between policy dimensions and clientelism as two distinctive motivations for swing voting. Second, using original survey data collected ahead of Ghana's critical 2008 elections (N = 1,600), the analysis shows that more than half of respondents were "up for grabs" in the months before the polls. Third, employing a conceptually appropriate estimation technique (a negative binomial regression model), we present an empirical analysis of what makes these voters persuadable. The findings demonstrate that swing voters differ in how they evaluate politicians, calling into question views of the African voter as unidimensionally clientelistic and devoid of interest in policies and performance. The analysis does show that clientelism influences swing voting. However, this article is among the first to test the impact of performance evaluations alongside clientelism, finding that evaluations of incumbent legislators' performance in providing collective and developmental goods also shape many swing voters' decisions.

The results suggest that empirical accounts of African elections as a "clientelistic harvesting season" overlook the increasing sophistication of voters. Rather, there exist diverse campaign strategies for winning over voters in Ghana. This article offers evidence that in one of Africa's new democracies, many critical voters place importance on collective goods when deciding which candidate will receive their ballot. In this sense, they resemble voters in advanced democracies more than previously thought.

Theorizing and Measuring the Swing Voter

The intuitive understanding of a swing voter is an individual who is persuadable and hence "up for grabs"

(Campbell 2008, 118). In Mayer's words, a swing voter is one "who is not solidly committed to one candidate or the other as to make all efforts of persuasion futile" (2007, 359). This consequently distinguishes the swing voter as conceptually distinct from the "core voter." Yet, there exists a diversity of approaches towards measuring swing voting and among them little consensus over which is superior: self-reported ambivalence (e.g., Hoffman et al. 2009), lack of party affiliation (e.g., Eldersveld 1952; Linbeck and Weibull 1987), or past voting behavior (e.g., Lindberg and Morrison 2005; Shaw 2008).

The first approach treats swing voters as individuals who express indifference or ambiguity about their preferred candidate or party for an upcoming election (e.g., Abramowitz 1999; Collier and Vicente 2008; Enelow and Hinich 1981; Nichter 2008, 20). The polling industry (Annenberg, Gallup, Pew) similarly tends to equate swing voters with undecided ones. One issue with this measure is that it can fluctuate dramatically based on the proximity of an election, introducing temporal variation that limits the comparability of studies of swing voting in different contexts. Secondly, while it is intuitive that undecided voters might be more likely "up for grabs," deciding on a candidate does not necessarily preclude the possibility of being convinced to change to another under a certain set of circumstances.

Another class of studies defines swing voters as non-partisans (e.g., Eldersveld 1952; Lindbeck and Weibull 1987; Stokes 2000). Yet, identifying as an "independent" can signify traits unrelated to voting behavior, such as not paying party membership, being a "leaner" but not seeing oneself as a partisan per se, concealing one's party identification, or an ideological desire to be seen distinct from party stalwarts (Bartels 2000; Keith et al. 1992; Mayer 2008; Miller 1991). Given the widespread skepticism towards political parties in Africa (van de Walle 2003), we have reservations against using this approach as the sole measure of willingness to switch votes in the continent.³

The third approach constructs a link between the concept of swing voting and past voting patterns, owing its origins to Key's (1966) distinction between "standpaters" (core voters) and "party switchers" (swing voters). For example, Shaw (2008, 88) classifies voters from the American National Election Studies as "core" if they supported the same party in three consecutive elections and

²Dominant party regimes are still common in Africa (e.g., Bogaards 2008), but even these regimes have competitive contests over legislative seats. Ghana has notably competitive primary elections, one other means by which leaders may be ousted prior to election day. However, the most competitive primaries tend to be in constituencies where the party is strong (Ichino and Nathan 2013), suggesting that primaries contribute little to driving (or, conversely, reducing the occurrence of) turnover of the party that controls legislative seats in Ghana.

³Hoffman and colleagues' (2009) study of "swing voters" in Ghana's 2008 election codes all voters who did not cast their vote for one of the two main parties in the last elections as persuadable voters. Yet, studies show that substantial portions of the individuals who in a particular election vote for either of the two parties also are persuadable and have indeed switched parties in the past (Fridy 2007; Lindberg 2012; Lindberg and Morrison 2005, 2008).

otherwise as swing voters. Lindberg and Morrison (2005) introduced the same procedure in a study of Ghanaian voters. A behavioral measure of either switching parties across elections or splitting a ballot between parties is empirically straightforward.⁴ Its weakness is that any measure requiring participation in two or three previous elections excludes almost a decade, or more, of the new voting age population. Given that election research commonly finds that new voters differ systematically from older voters, consequently this measure can introduce selection bias. Further, the latent propensity to swing vote may not be observable in actual vote choice. A voter who chooses the same party in three consecutive elections may nevertheless have been “up for grabs” in all of them. Conversely, a voter who was up for grabs in the past may have turned into a true core supporter at present.

A New Way to Measure the Swing Voter

Existing approaches thus have weaknesses but also strengths that one can draw upon to create a better measure. The new measure of swing voting proposed here has two key innovations that make it particularly suited for emerging democracies. First, it combines behavioral traits of swing voting—past party switching and split-ticket voting, being undecided over one’s preferred candidate, and nonmembership in a political party—with other self-reported reasons individuals would swing vote. Surprisingly, the approach of simply asking voters to identify reasons why they have voted split ticket, switched their vote in the past, or might consider doing so in the future has virtually never been used. Such questions can address a number of shortcomings in the measures discussed above. By learning what sorts of reasons and how many of them might lead individuals to change their votes, one can gain insight on what circumstances make a voter swing, even if they have not to date. The second key innovation identifies two principally different reasons for which individuals would swing vote: to elect either politicians who focus on collective goods and policies that produce them or those who provide immediate clientelistic, private material goods. This is an essential distinction for exploring voting in “patronage democracies” that abound in Africa and Asia (Chandra 2004, 7).

We introduce a count index where each instance of self-reported willingness to change one’s vote and of actually having changed parties in the past results in a one-

unit increase in the predisposition towards being a swing voter. This first swing-voting measure is a count of the total number of items for which an individual has or would swing vote. Using the same questions, two additional measures of swing voting are generated: one based only on motivations for clientelistic and private goods and one only for collective goods and policy-driven reasons. The components of the count index are summarized below, and the online appendix provides further details.

For each instance where a respondent exhibited one of the following traits, the value of his or her swing-voting index rises by one unit:

- (1) Voting split ticket in any of the three prior national elections (1996, 2000, 2004).
- (2) Each reason a respondent offered for voting split ticket in recent elections, up to three reasons. If the reasons were clientelistic, they contributed to the overall measure and the clientelistic one; if the reasons were collective goods driven, they contributed to the overall and the policy swing-voting measures.⁵
- (3) Voting for different political parties across any of the three prior national elections.
- (4) Each reason a respondent offered for switching parties in recent elections, up to three reasons. These were added to each respective swing measure as described in (2).
- (5) Being “undecided” about which party’s MP candidate a respondent would vote for in the 2008 elections.
- (6) Identifying specific reasons a respondent would switch his or her projected vote. The survey included questions that covered both clientelistic and policy motivations. It also allowed respondents to offer up to three reasons in addition to those presented.⁶

This produces three distinct count measures with a theoretical range of *total swing* [0, 16], *policy swing* [0, 14], and *clientelistic swing* [0, 13].⁷ They have some overlap—one would anticipate that extremely persuadable voters are likely winnable across all the measures—but also are

⁵The findings are robust to count index specifications that include only one reason for the components discussed in (2), (4), and (6) in the current section of the text. Online Appendix A contains all information on different dependent variable constructions and Appendixes D, E, and F the results of robustness tests.

⁶Details on the specific survey items and question wording can be found in online Appendix A.

⁷The measure is not sensitive to ideology or differences in political platforms other than to distinguish politicians who use clientelism as a campaign strategy to a greater extent than others.

⁴We know that respondents who did not vote in elections sometimes misreport voting and others which party they supported in previous elections (Bernstein, Chadha, and Montjoy 2000; Duff et al. 2007). Our experience in Ghana suggests that the latter issue is only a marginal problem.

distinctive conceptually and, as the analysis will show, empirically.⁸

This measure is more complex than frequently used dichotomies of “swing” and “core” voters. We argue that it is theoretically superior in how it indicates the central tendency of a voter to change his or her ballot in the aggregate and that it distinguishes between clientelistic and policy dimensions. Further, the online appendix shows that analyzing swing voting using the conventional measures discussed before produces far less consistent results than our new measure. The magnitude and direction of even standard control variables like age and gender on voting behavior differ among the dichotomous measures of swing voting. A detailed description of all component items, a description of how the three swing measures were constructed, and robustness checks with alternative measures are found in online Appendixes A and E.

Explaining Swing Voters in Africa—MPs Performance?

There are two distinct themes in the literature on persuadable voters that have largely operated independently of one another. The first identifies reasons why voters in advanced democracies are persuaded by political parties and candidates to swing their vote, focusing particularly on fierce interparty competition and the accountability mechanism of elections. The second literature is specific to elections in new democracies like those in Africa. This literature points to ethnic cleavages, programmatically weak political parties, lack of voter sophistication, and voter rent-seeking as reasons why political competition found in advanced democracies has yet to materialize. By bringing these together in a study of voters in Africa, this article joins a growing literature that challenges views of elections on the continent as “ethnic censuses” or simply opportunities for voters to extract rents from politicians.

Yet, it remains rare to consider performance-based evaluations of politicians while also accounting for the

factors emphasized by the literatures of identity politics and clientelism in Africa. This article blends these literatures along three points: the role of partisanship, political performance, and clientelism.

Partisanship and Parties

Swing voters and their impact on elections have been studied in detail (e.g., Feddersen and Pesendorfer 1996; Fraga and Ramirez 2001; Leech 2003; Mayer 2008; Powell and Whitten 1993) but remain underexplored in new democracies. In advanced democracies, candidates and their parties offer competing policy platforms to voters (Fiorina 1991; Kramer 1971) as strategies to court them (Ferejohn 1986; Kramer 1977; McKelvey 1975). However, in the African context, it is commonly argued that parties with coherent platforms and debate over policy are “virtually non-existent” (e.g., van de Walle 2003, 304).

Partisanship is sometimes used as a measure of swing voting, but following Mayer (2008, 378–79), we argue that it makes more sense to treat partisanship as an explanatory variable. At the core of this is the recognition that even party identifiers often have a nonzero probability of swing voting, and consequently whether partisanship determines being a core voter should be verified empirically rather than assumed.

It is sometimes argued that partisanship reflects voters’ social identities (e.g., Green, Palmquist, and Schickler 2002) and, thus, parties map onto social cleavages. Parties in Africa are no different. However, even in societies where ethnicity is a key political cleavage, evidence that ethnic identifiers are consistent voters for any one particular party is mixed (Ishyama and Fox 2006; cf. Norris and Mattes 2003). Partisans of smaller parties can often be persuaded to support another party’s candidate for offices that their own party has little chance of winning (Chandra 2009). Partisan attachments also tend to be weaker in such environments (Dalton and Wattenberg 2000). In short, while partisans should be less persuadable than nonpartisans, it is an important component of explaining why individuals swing vote rather than being an indicator of it.

Part of the complexity of partisanship concerns the role of ethnicity. In Africa, geographically concentrated ethnic groups affiliated with particular political parties can be a mechanism for mobilizing political support (Barkan 1979; Fridy 2007; McLaughlin 2007; Posner 2007; cf. Lipset 1961). Ethnicity is a multifaceted identity (Chandra 2004; Chazan 1983; Fearon and Laitin 1996; Horowitz 1985; Young 1976), and voters can be expected to be more or less “ethnic” in their perceived identity. Scholars note how this often reduces the persuadability of

⁸ Respondents take on actual values of *total swing* [0, 10], *clientelistic swing* [0, 5], and *policy swing* [0, 7], and greater detail is found in the appendix. We find that the *clientelistic swing* and *policy swing* measures are statistically related ($X^2(35) = 1700, p = .000$), but they are far from mirrors of one another. For example, of respondents with counts of “2” on *clientelistic swing*, 21.3% of them had a “2” on *policy swing*, while 17% of them fall lower on *policy swing* and the remaining above. For scores of “3” on *clientelistic swing*, by contrast, over half of the respondents have values of 3 or lower on *policy swing*. The measures, particularly by using open-ended questions, ensure that they are distinct. When a respondent offers a clientelistic reason for changing votes, it imposes an opportunity cost in that he or she *cannot* offer a policy reason for that question. For more details on this, see online Appendix A.

voters, who can receive “psychic benefits” for supporting candidates like themselves (Chandra 2004) and use coethnicity as a cognitive shortcut to estimate candidates’ otherwise poorly advertised policy preferences (Ferree 2006; Habyarimana et al. 2007; Lijphart 1999; Snyder 2000). In Ghana, the Ewe and the Ashanti are politicized ethnic groups⁹ that have historically been nested within opposing political parties (Ferree 2010; Fridy 2007), and hence, we expect that members of these dominant ethnic groups are more likely to be core voters and hence less persuadable.

Political Performance

Another key intuition to draw from the literature lies in the intersection of political performance and accountability. Democracy is an institutional framework of rights and procedures that should make rulers responsive to citizens in order to gain and hold on to power, with voting in periodic elections the central mechanism (Barro 1973; Bollen and Jackman 1989, 612–18; Coppedge and Reinicke 1990; Dahl 1971, 8 and 1989, 316–17; Diamond 1996, 53; Lindberg 2009a, 11–13). A more democratic political system expands citizens’ abilities to ensure that rulers act for the betterment of individuals and society, and competitive elections give citizens a chance to pressure elites to provide higher-quality desired goods in greater quantities. This gives us reason to expect that if voters evaluate the performance of their elected representatives—in this case, Members of Parliament (MPs)—then their propensity to switch vote choice depends on how well incumbent MPs do their jobs (Key 1966).¹⁰ The most commonly considered dimension in this literature is economic performance, where voters assess changes in economic conditions (either in ego- or sociotropic terms) and cast ballots retrospectively (Fiorina 1981; Key 1966; Krause 1997). Additionally, performance of legislators can be assessed on delivery of clientelistic private goods (e.g., paying school fees and hospital bills, cash, bags of rice, soccer uniforms); as development agents with responsibility for economic conditions in the constituency and

mediating dispute resolution handled by traditional authorities; on general lawmaking performance; or on the national concern of oversight over the executive. Measures of performance should therefore be multifold.

Clientelism

The final area one needs to consider is the role of clientelism. Two stylized facts can be extracted from this literature. First, African states have been particularly incapable of producing collective goods enabling development (e.g., Acemoglu and Robinson 2006; Barro 1998; Bates 1981; Englebert 2000; Herbst 2000; Hyden 1980; Jackson 1990; Kriekhaus 2006; Lemarchand 1972; Medard 1982; van de Walle 2001). Scholarship from advanced democracies, as discussed above, expects this to translate to punishment of incumbents.

The second stylized fact is that “throwing the rascals out” does not take place because clientelism subverts the logic of democratic accountability (Kitschelt and Wilkinson 1966; Stokes 2000). Clientelism is based on a contingency of political loyalty (Hicken 2011, 194). It is important to note that all clientelism is not *quid pro quo*, but it is always a personalized and sometimes also a diffuse exchange of private goods for loyalty called upon at a much later date (Kaufman 1974; Powell 1970; Scott 1972). Providing small-scale collective goods like a community well or a school building are targeted but not personal private goods and as such is not clientelism. On the other hand, it is well known that Ghanaian politicians hand out private goods like cash, foodstuffs, wax print cloth, schoolbooks, bill payment and the like—known as “small chops”—to individuals and families in their constituency (Lindberg 2003). We are not arguing that clientelism is necessarily an effective campaign strategy for the purposes of winning office. Rather, we observe that it is a ubiquitous practice in elections in Africa (Kramon 2011; Vicente 2010; Wantchekon 2003) and elsewhere (Gonzalez Ocantos et al. 2011; Stokes 2000) with the *potential* to sway voters.¹¹

The expected empirical implications of more or less pervasive use of clientelistic offers are complex, however.

⁹The Ashanti make up the majority and also the cultural core of the ethno-linguistic group called Akans. Most other Akan tribes typically associate closely with the Ashanti. In the sample, that includes the Akyems. Another Akan tribe is also in the sample—the Fanti—but they are more of an exception among the Akans since their affiliation with the Ashanti is much weaker and to some extent historically antagonistic. Hence, to avoid misunderstanding, we refer to Ashanti and Akyems as “Ashanti” rather than “Akan” and keep Fanti separate in the analysis.

¹⁰We grant that some voters will never change their ballots, irrespective of how poorly leaders of their party or how well leaders of another party perform, and remain “core” voters.

¹¹A lot can be said about the irrationality of using clientelism as an electoral strategy in the first place given that the cost of buying enough votes to win is likely to be much greater in most places than the cost of providing collective goods, and we wish to thank one of the reviewers for pointing that out. While we share that view, all evidence points to virtually all viable candidates for legislative office in Ghana and most other African nations distributing large amounts of clientelistic goods. The focus here is on the possible effects of such activities, not the explanation for variation in levels of clientelistic goods provision.

It is unclear whether parties more effectively win voters by targeting persuadable “swing voters” (Magaloni et al. 2007; Schady 2000; Stokes 2000), by rewarding core supporters (Yarahuan 2006), or through some combination of both (Dunning and Stokes 2010). Further, whether political organizations can effectively monitor voter choices shapes the enforceability of the clientelistic exchange (Cox and McCubbins 1993; Stokes 2000). In the context of swing voting, however, as clientelistic offers from parties abound, the more incentive individuals have to be—or at least appear to be—persuadable.

A final consideration not addressed in these literatures is that voters themselves are diverse and, thus, different groups of swing voters can be persuaded by different goods. Being willing to shift one’s vote for private goods is equivalent to swing voting for clientelistic reasons. Being won over by constituency and national-level goods, as well as policy shifts from parties, constitutes policy swing voting. The principle distinction among goods that politicians offer is that private goods are divisible, excludable, and distributed to individuals in a private exchange. Cash handouts, bags of rice, a contract, bags of cement, or roofing sheets are a few examples of goods commonly used for clientelistic exchanges in Africa. Collective goods coming as club goods include village bore holes and improving local road quality and access but also include broader goods such as bringing constituency needs to the attention of national media, being active in legislative sessions on issues beneficial to the constituency, improving economic performance, and oversight of the executive to prevent corruption and other forms of malfeasance.¹² Swing voters who value private goods are susceptible to political clientelism, while others value collective goods and policy, and the analytical strategy presented here reflects this.

The central focus of the empirical investigation here provides a novel take on the role of the evaluation of politicians’ performance in African politics. The focus is on voters’ perceptions of performance by the incumbent while distinguishing between an MP’s performance in terms of private goods versus collective goods and also the general “supply” of clientelism in constituencies prior to an election. To what extent do performance evaluations and clientelism determine the persuadability of voters?

¹²A recent trend (e.g., Kitschelt and Wilkinson 1966) has been to equate any form of targeted benefits (including club goods such as “constituency development”) with clientelism. We prefer to preserve the crisper view towards the concept and understand clientelism to be a personalized, face-to-face exchange of goods for political loyalty (Kaufman 1974; Powell 1970; Scott 1972).

Research Design

In what follows, the topic of swing voting is explored using survey data from a new democracy in Africa. Ghana is one of the more democratic countries on the continent and has held five uninterrupted elections since 1992 and is (at the time of writing) on her way towards the sixth election in December 2012, giving citizens the necessary experience to develop critical and sophisticated political choices. Elections in Ghana are highly competitive: the vote shares for two main parties have shifted drastically since 1992, resulting in alternations in power following the 2000 elections and in 2008. In the latter, the incumbent NPP lost a presidential run-off by 0.5% of votes after leading by 1.2% in the first round. In other words, Ghana presents the appropriate kind of context to investigate swing voting in Africa’s new democracies. What is found in Ghana may not be fully generalizable to the rest of Africa, but it represents a suitable place to engage in one of the first systematic analyses of swing voting on the continent and in new democracies more generally.

The original survey was carried out in Ghana in August 2008, four months before the concurrent presidential and legislative elections on December 7, 2008. The survey included 1,600 subjects sampled in nine of the 10 regions in Ghana. Sampling was stratified across constituency competitiveness in order to ensure the sample reflected a wide range of districts from safe havens to hotly contested constituencies, with a random sample of citizens interviewed in each constituency.¹³ Several of the questions were open-ended, providing subjects abundant space to elaborate on their replies in order to guarantee that every reason why a subject could switch his or her vote was captured. These answers were then postcoded and informed by the theories of clientelism and collective goods discussed previously. In this way, we sought to generate the truest possible representation of people’s actual views that is possible to capture in quantitative format. Descriptive statistics on all the variables are found in online Appendix B. This appendix also includes a table providing more detail on swing voting across the constituencies validating the present theoretical interest, conceptualization, and measurement of the phenomenon. Between 44 and 53% of the citizens surveyed were persuadable, but they differed in terms of their orientation towards policy and clientelistic motivations, thus demonstrating the need for the measurement strategy employed here.

¹³See online Appendix G.

Independent Variables

The main empirical interest of this article is to test whether incumbent MP performance—as distinct from clientelistic or ethnic affiliation reasons—can win over voters in one of Africa’s new democracies.

The key independent variables seek to capture these performance dimensions.

Incumbent Performance: Five variables encompassing evaluations of the incumbent MP are included. Four of these concern collective goods and one of them private goods. The variable *Patron Assistance* is based on a response assessing the performance of an MP in providing private goods and personal benefits to constituents. *Constituency Development* measures delivery of collective goods to the respondent’s community (“club goods”). *Lawmaking* captures how well a respondent views an incumbent MP’s performance proposing, debating, and passing laws in Parliament. *Executive Oversight* measures the respondent’s evaluation of the incumbent MPs’ performance in terms of holding the head of state to account. Finally, we also expect voters to evaluate economic performance and to hold MPs responsible for the nature of their economic livelihoods. To capture economic performance, an egotropic retrospective economic voting question is included in its conventional form, asking respondents to evaluate their economic state at the time of the interview compared to 12 months prior.

The effect of these variables on swing voting propensity is expected to depend on whether or not one voted for the current MP. The effect of a very positive evaluation of the performance for a voter who supported the incumbent should decrease the individual’s propensity to swing vote. The anticipated effect of a positive evaluation of the incumbent MP for those who voted against him or her is the opposite: one expects him or her to become more likely to swing vote. To capture this, the evaluation measures were rescaled such that all incumbent voters who had positive evaluations of the incumbent MP align with challenger supporters and neutral individuals who held negative evaluations of the same incumbent. This yields five measures that capture the effect on incumbent performance, rescaled based on the sympathies of a voter towards or away from that incumbent MP.¹⁴

¹⁴We also constructed similar five-value ordinal scales created by reversing the scale of voters who did not support the incumbent MP in the previous election, and a three-value variable identified positive, negative, and neutral evaluations. We opt for the dichotomous variable for two reasons. First, while we believe that negative and positive evaluations broadly conceived (as dummy variables) can compare conditionally based on sympathies for a candidate,

The last is a key independent variable that captures how much exposure a voter had to clientelistic offers in the lead-up to the election. In new democracies like Ghana, competing parties allegedly flood some constituencies with private goods to court voters. We anticipate that greater exposure to clientelism is associated with higher propensities to swing vote. *Clientelism Supply* is constructed as the weighted average of exposure to “small chops”—small gifts, cash, handouts, and similar things doled out by candidates ahead of elections. We recognize one of the greatest barriers to studying clientelism are incentives respondents have to misreport information, particularly about things like vote buying and election fraud (Kramon and Weghorst 2012; Weghorst 2012). To address these challenges, respondents were asked a series of questions about their personal experiences with clientelism and also their observation of clientelism in their neighborhood and with friends, family, and acquaintances during the 2004 and 2008 election campaigns, as well as comparisons between the two periods. This approach follows with evidence from Nicaragua that exposure-based evaluations of clientelism in the neighborhood tend to have less downward bias than direct questions about receiving material transfers (Gonzales-Octanos et al. 2011). The index measure ranges from 0 (no exposure) to 5 (highest level of exposure). This is the measure of the absolute exposure to clientelism—from both incumbent and opposition parties. We expect that, regardless of past voting behavior, more exposure to clientelism makes one’s ballot preference less stable. It does not necessarily follow that “clientelism supply” is effective in making voters change their ballots, but rather the extent to which they consider other candidates is greater. Additional detail on how this variable was constructed is found in online Appendix B3.

Controls

All estimations also include a set of controls. The first is *Relative Wealth*. Research suggests that poorer citizens are more likely to be persuadable by private goods offers than other voters (Dixit and Londregan 1996).

It is not obvious that a “very negative” evaluation for a voter who supported the incumbent is computationally comparable to one who did not support the incumbent and had a “very positive” evaluation. Further, comparison of the Akaike Information Criterion for the dummy, three-value, and five-value measures shows that the dummy variable approach has the best model fit. Finally, we ran both NBRM and ZINB model estimations with the full set of evaluations by plus-interaction terms for incumbent and opposition supporters’ evaluations. The results did not contradict the main findings we present in this article. The fit of a model with interaction terms is also poorer, and it substantially complicates the analysis presented here.

For the very poor, immediate improvements of material conditions (even a small cash handout or a bag of rice) take priority over collective goods that come with credible commitment problems (Desposato 2007; Scott 1977). In new democracies, low trust in politicians has been found to exacerbate risk aversion of poorer voters, and low-information environments erect additional barriers for poor voters to enforce collective goods promises (e.g., Stokes 2000). Given the difficulties of reliably measuring absolute wealth, we adopted a measure used by the Afrobarometer.¹⁵ This measure asks respondents to evaluate their personal economic situation relative to other citizens and provides fairly reliable information about the relative economic condition of the respondent. The measure has five values and ranges from much poorer than average to much better off than average.

Partisanship: Partisanship is expected to make voters less likely to swing vote. It is measured as a dichotomous variable that is coded as 1 if the respondent indicated being active in a political party.

Voted for Winning MP: Whether or not the respondent voted for the incumbent MP in the last election is used to condition the hypothesized effects of performance evaluations as indicated above, but we also expect it to have an independent effect. In the first instance, supporting a candidate who ultimately won may bias evaluations positively. In the second instance, one can expect that bad performance can push voters away from their candidate who won the previous elections. For challenger voters, poor performance may make them swing towards another candidate but certainly not the one in power who did a bad job of delivering goods. This is particularly important in Ghana, where MPs frequently report that constituents hold them responsible as agents of development (Lindberg 2010), and because all MPs have equally sized discretionary constituency development funds. Respondents who supported the candidate who won the 2004 elections are coded as 1 and all other respondents (voters for losers and nonvoters) as 0.

Male: In the control for gender, men are coded 1 and women are assigned 0. Research suggests that women have higher levels of risk aversion in political and economic

¹⁵Other strategies include asset identification (whether respondents have bicycles, TVs, etc.), measure of scarcity (e.g., how frequently a respondent has lacked funds for medicine, fuel, and so on), and occupational prestige (skilled vs. unskilled labor, employed vs. unemployed, salaried vs. hourly worker). These have the disadvantage of limiting cross-national comparability, since they all likely covary with national-level development.

activities (Eckel and Grossman 2008), and we thus expect them to exhibit more stable voting behavior.

Age: The controls for the age of a subject-group's cohorts are 18–22, 23–35, 36–55, and 55 and older.¹⁶ We expect older individuals to have more entrenched voting habits and consequently are less likely to change them (Franklin 2004).

Education: To capture formal education, the subjects' highest level of schooling is included. This ordinal variable with five levels ranges from no formal schooling to post-secondary/university education. Better-educated voters will have more adept reasoning skills and, all else equal, are more critical and evaluative. Hence, we expect clientelistic swing voting to be negatively associated with level of education while the intuition is that its relationship with policy swing voting should run in the opposite direction.¹⁷

Information: We expect that more informed voters will have greater confidence in their own political views and consequently are less likely to swing vote. An index capturing a subject's exposure to news media based on the frequency with which she gets information from radio, newspapers, and television is included.

Ethnicity: Two dummy variables derived from a question that asks respondents to identify their tribe, with 1 in both cases indicating being Ashanti or Ewe, respectively, were employed.¹⁸

Safe Havens: In safe havens, a single voter's ballot impact on electoral outcomes is close to 0, and thus the appeal of switching parties to obtain some end should

¹⁶As a robustness check, models were run with the actual age of respondents instead of the categorical measure. The results remain the same, but this measure complicates the interpretation of the substantive effect of age, hence our choice to use the categorical measure.

¹⁷While there is some correlation between education and wealth (Pearson's $R = .25$), they are empirically and conceptually distinct.

¹⁸As a robustness check, we also constructed an index variable measuring how strongly individuals from these two ethnic groups identified with their tribe rather than with being Ghanaian. We used an ordinal variable ranging from 0 ("Only Ghanaian") to 2 ("Only Ethnic"), and tribal origin was then interacted with this identification question to distinguish individuals who not only belong to one of the politically relevant ethnic groups but also identify strongly with it. The results reported in the text were substantively the same with respect to the key performance variables. In the policy swing model with this ethnicity term, ethnic identifying Akans were (narrowly) more likely to swing vote (the interaction term). Since the model fit was better, we used the simpler measure.

TABLE 1 Frequency Distributions of the Dependent Variables

Total Swing Voting			Policy Swing Voting			Clientelism Swing Voting		
Count Value	% Respondents	N	Count Value	% Respondents	N	Count Value	% Respondents	N
0	46.8	749	0	48.5	776	0	55.6	889
1	19.6	313	1	22.6	361	1	30.8	493
2	10.4	166	2	10.6	170	2	10.6	169
3	8.6	137	3	13.1	210	3	2.3	37
4	6.2	99	4	2.9	46	4	0.6	9
5	5.6	90	5	1.8	28	5	0.2	3
6	1.7	27	6	0.4	7			
7	0.7	11	7	0.1	2			
8	0.3	5						
9	0.1	2						
10	0.1	1						

be marginal.¹⁹ Constituency competitiveness is measured with a dummy variable where safe havens are coded as 1 when one party has won the last several elections with a margin of victory exceeding 20%. Other constituencies are coded as 0.²⁰ Other measurement strategies and the robustness of the findings using other approaches towards this variable are detailed in online Appendix E.6.

Estimation Strategy and the Choice of Count Regression Model

We begin by outlining the intuition behind using a negative binomial regression model (NBRM) for the estimation strategy. Such models are more common in public health and epidemiological studies (e.g., Agrawal, Gefland, and Citron-Pousty 2002; Brown, Pagan, and Rodriguez-Oreggia 2005; Minami et al. 2006; Yau and Lee 2001), but this article seeks to demonstrate the value of a count-model approach for studying voting behavior and more broadly for the discipline of political science. A more detailed description of the differences between the various count regression models and the justifications for using the NBRM over other alternatives can be found in Appendixes C and D.

Table 1 above shows the distribution of the three distinct swing-voting measures. These dependent variables are count measures that are nonlinear, suggesting that

¹⁹We recognize that this does not preclude the possibility that leaders are still held accountable and being responsive through, for example, intraparty mechanisms.

²⁰The country in which the survey data was collected—Ghana—uses the first-past-the-post plurality rule in single-member constituencies and has two parties that regularly capture 96% or more of the total vote.

some type of the generalized linear model should be used (McCullagh and Nelder 1989). The aim is to employ a class of regression models that can estimate likelihoods of a respondent having a certain count value, given a number of explanatory factors.

Like many count measures, the three swing measures are overdispersed (the variance is greater than the mean), and the negative binomial count model can accommodate nonnormal, heteroskedastic distributions by including a dispersion parameter (Cameron and Trivedi 1998; Elhai, Calhoun, and Ford 2008; Long 1997, 236; Rose et al. 2006, 464). The idea of a zero count captures the idea that certain voters are never persuadable (Atkins and Gallop 2007; Cameron and Trivedi 1998; Long 1997), and up to 55% of respondents had a zero count on one of the three dependent variables—what is meant here by “core voters.” Goodness-of-fit tests (in online Appendix D) indicate that this model is similarly well suited for analyzing the data at hand to the more complex alternative of a zero-inflated negative binomial regression model.²¹ More importantly, the measures of the dependent variable represent a world of voters made up of swing voters at various levels of persuadability indicated by counts of swing characteristics and core voters. Thus, this

²¹Note also that we carried out analyses with the zero-inflated negative binomial regression model (ZINB) and found similar results, but we opted for the negative binomial regression (NBRM) because the computational complexity of the ZINB model resulted in nonconvergence problems for some maximum likelihood estimations. The nonconvergent models nonetheless yielded results that are consistent with the main findings presented in this article. We also find that there is a value to the simpler estimation procedure for both greater ease of presentation and interpretation, but nonconvergence dictated our choice of the NBRM. For further details on the results using a ZINB estimation, see online Appendix F.

TABLE 2 NBRM Count Equation: Estimates and Percentage Change in Expected Count for Swing Characteristics

	Total Swing				Policy Swing				Clientelistic Swing				
	Robust				Robust				Robust				
	b.	SE	$P > z $	%	b.	SE	$P > z $	%	b.	SE	$P > z $	%	
<i>MP Performance-</i>	Constituency												
<i>Based Voting</i>	Development	-.096	.115	.405	-9.1	-.130	.065	.045	-12.2	-.096	.164	.559	-9.1
	Lawmaking	-.064	.008	.000	-6.2	-.064	.015	.000	-6.2	-.122	.002	.000	-11.5
	Executive Oversight	-.160	.161	.322	-14.8	-.089	.123	.471	-8.5	-.207	.206	.316	-18.7
	Economic Vote	-.102	.008	.000	-9.7	-.100	.016	.000	-9.5	-.053	.051	.296	-5.2
<i>Clientelism</i>	Patron Assistance	.057	.015	.000	5.9	.048	.034	.158	5.0	.093	.280	.001	9.7
	Degree of Supply	.060	.006	.000	6.1	.041	.004	.000	4.2	.037	.005	.000	3.7
<i>Controls</i>	Relative Wealth	-.060	.009	.000	-5.8	-.057	.010	.000	-5.6	-.065	.002	.000	-6.3
	Partisan	-.128	.012	.000	-12.1	-.164	.011	.000	-15.1	-.191	.008	.000	-17.4
	Voted for Winning MP	-.108	.224	.629	-10.3	-.085	.260	.745	-8.1	.041	.246	.868	4.2
	Male	.162	.031	.000	17.6	.214	.002	.000	23.9	.075	.056	.184	7.8
	Age	-.068	.070	.329	-6.6	-.033	.071	.641	-3.3	.021	.040	.600	2.1
	Education	.055	.012	.000	5.7	.113	.032	.000	12.0	-.011	.010	.279	-1.1
	Information	-.089	.034	.010	-8.5	-.072	.013	.000	-7.0	-.121	.051	.018	-11.4
	Tribe: Ashanti	.039	.117	.741	4.0	-.009	.057	.874	-0.9	-.042	.175	.809	-4.1
	Tribe: Ewe	.037	.031	.238	3.7	.093	.014	.000	9.7	-.058	.077	.455	-5.6
	Safe Haven	-.239	.058	.000	-21.2	-.337	.055	.000	-28.6	-.232	.109	.034	-20.7
	Constant	.735	.373	.049	n.a.	.303	.381	.426	n.a.	-.028	.387	.943	n.a.
	N	1268				1268				1268			
	Log Likelihood	-2089				-1837				-1328			
	Alpha	1.274	.340			0.843	.305			0.252	.131		

Note: % = percent change in expected count for unit increase in X (based on $e^b = \exp(b)$).

estimation technique is true to the nature of swing voting in the real world. For the estimations of the three dependent variables (*total swing*, *policy swing*, and *clientelistic swing*), Table 2 reports raw coefficients, standard errors, and p-values for each explanatory variable. When interpreting the results of negative binomial regression models, it is also helpful to have the percent change in expected counts side-by-side with the other statistics, so these are also included in the table.²²

Results

The first and perhaps most important finding is that across the three specifications of the dependent variable, three out of the five measures of MP performance-based voting come out as substantially important and statistically significant. The indicator for evaluation of executive oversight never approaches significance, but this is unsur-

prising because MPs in Ghana generally have only a small role in constraining the president. More surprising is that in the total swing model, evaluations of constituency development do not impact swing voting.

For the overall *total swing* measure, three of the five key hypothesized effects of MP performance-based voting explain differences in propensity to swing vote: the incumbent MP's performance as a patron delivering personal assistance, as a lawmaker, and in economic voting. Accordingly, two indicators of politicians' performance in provision of collective goods influence voter persuadability. The negative coefficients indicate the combined effect of positive evaluations by those who voted for the MP leading to a lower expected count and negative evaluations of the incumbent by those who did not for both economic voting and lawmaking. Contrary to much of the inherited wisdom on African politics, the analysis here finds evidence that swing voters in Ghana display features of critical performance-based and even economic voting. Everything else being equal, a shift from a negative to a positive (for incumbent MP supporters) or from a positive to a negative evaluation (for neutral and challenger voters) of the MP in terms of lawmaking drives down the expected count of voter swing characteristics by 6.2%. A

²²Percentage change is calculated based on the factor changes indicating changes in expected counts of swing voting characteristics for each unit increase in the independent variable. Additional model and fit statistics, as well as robustness tests, are reported in online Appendix E.

change from a negative to a positive evaluation of one's own economic conditions over the last 12 months drives down the propensity to swing even more, by almost 10%.

The effect of evaluations of the MP's performance as a patron who takes care of voters' personal needs runs in the opposite direction of the other evaluations, with a more moderate substantive effect (5.9% increase in expected count). While it may seem contradictory at first, we think it actually makes sense in the following way. Incumbents have limited resources, and buying votes on a large scale to shift the outcome of an election can be extremely costly. Evidence from Ghana (Lindberg 2010) and our own experiences there show that when MPs are pressured to give out gifts and cash and take care of hospital bills and the like, these services are more likely to go to known supporters. At the same time, any incumbent who spends more time and resources on providing personal assistance to individuals will necessarily have less time and other resources to attend to constituency needs and do well in terms of lawmaking. These factors together seem to account for why the coefficient operates in a direction different from the other performance variables.²³

Moving beyond the performance-based indicators, the results show as expected that greater exposure to clientelism increases the expected count of swing characteristics consistently over the three specifications of the dependent variable (as well as in all robustness checks). Clientelism supply leads to more voters being susceptible to swing, with a 3.7 to 6.1% increase in expected counts across all models for each unit increase of the ordinal variable (19–30% across the range of the variable). Yet, as evidenced by the coefficients for lawmaking and economic voting, these voters tend to value several aspects of MP performance—in addition to their exposure to clientelism. The substantive message is that incumbent supporters who see a leader as delivering on lawmaking, economic development, as well as on patron assistance are more difficult to persuade to change their vote choice, while neutral voters and opposition supporters are more likely to switch to the incumbent.

Among the controls, there are also several notable results. Poverty has an independent substantive effect where each step on the scale of relative wealth is associated with a predicted reduction in the expected count by 5.8%. Substantively, this means that a Ghanaian who views his or her

²³ An alternative view towards this finding is that the variable is difficult to interpret because, unlike performance evaluation variables like development where positive evaluations are clearly linked to higher performance in providing development, patron assistance may generate positive and negative evaluations at high levels of performance. In other words, individuals who hold generally towards the role of clientelism in politics may offer a negative evaluation of patron assistance for an MP who extensively delivered patronage.

economic status as “much worse” than other Ghanaians has a 23% higher swing count compared to a Ghanaian whose status is “much better.” Being a partisan reduces one's expected count of swing characteristics by 12.1%. Given the received wisdom from the literature on partisanship and voting behavior, it is interesting to find that voters in Africa behave just like voters in established democracies in this respect.

Other factors among the controls are noteworthy for different reasons. A higher level of education is associated with greater propensity to swing (each unit increase is associated with a 5.7% increase in expected counts), capturing how high-education brackets of voters have more critical reasoning and evaluation skills. On the other hand, the most politically knowledgeable voters are well informed about candidates and likely develop stronger candidate preferences, with each unit increase in access to news information being associated with an 8.5% decrease in a respondent's swing count. Being a resident in a safe haven unsurprisingly decreases the likelihood of a greater number of swing characteristics, and the effect is substantial at 21%; male respondents have 17.6% higher swing counts as expected.

It is notable that when accounting for performance of the incumbent MP, members of politicized ethnic groups like the Ewe and Ashanti have no more stable vote preferences than other Ghanaians. This finding stands in contrast to many accounts of the nature of African voting behavior. Yet, claims about the salience of ethnicity in voting have rarely been explored alongside performance evaluations of incumbent politicians and other factors found to influence voting behavior in advanced democracies. Likewise, when controlling for the above-mentioned factors, having voted for the incumbent MP in the past election and the age of the respondent do not matter for the likelihood of being among the persuadable voters.

Comparing Policy and Clientelistic Swing Voting

The second and third columns of Table 2 display the results of the negative binomial count regressions using the dependent variables restricted to characteristics that are related to provision of policy/collective goods (*policy swing*) and clientelism (*clientelistic swing*), respectively. About half of the respondents in the sample are core voters who would not consider switching parties for any of the reasons included in the survey. But among the swing voters, many more are willing to swing on policy grounds than for clientelistic offers. Hence, that many more are “up for grabs” on policy grounds in at least one new democracy in Africa is noteworthy.

For several variables, the results are similar to the analysis using *total swing* as the dependent variable, while some of the dissimilarities give us further leverage on the hypotheses. Starting with the five measures of MP performance evaluations, Table 2 highlights the importance of performance-based evaluations alongside clientelism again. The performance of MPs in terms of constituency development has both a statistically significant and substantively meaningful reductive effect (12.2%) on *policy swing*, while the impact on *clientelistic swing* is not significant. At the same time, the impact of lawmaking is robust to both models, with a reductive effect of 6.2% for *policy swing* and even more—11.5%—for *clientelistic swing*. This suggests that incumbents who invest more in delivery of collective goods in the form of constituency development and lawmaking for the good of the country improve their chances of staying in office.

The results for retrospective economic voting corroborate the impression of Ghanaian voters as being relatively sophisticated, with evaluations of economic performance influencing their propensity to swing. An improvement in an incumbent supporter respondent's personal economic situation compared to one year earlier, and the mirror depreciation of a neutral or challenger voter, drives down their swing count by 9.5% for policy swing. This means on one hand that those who voted for the MP who think they are better are much less likely to be persuaded by the current challenger. Past challenger voters who think they are better off, on the other hand, are more likely to switch and vote for the incumbent. In either case, improving the economic situation for voters in the constituency pays off for an incumbent MP in terms of increasing reelection chances. But in the model estimating *clientelistic swing*, retrospective economic voting plays no role. Separating different types of swing voters thus has also given us further leverage on one of the old hypotheses in this field. In short, economic voting explains how individuals who care about policy vote, but not clientelistic voters.

A greater supply of clientelism increases the expected persuadability of voters along both *policy* and *clientelism swing* dimensions, meaning the analysis above must be supplemented with the understanding inherited from the canon of African politics. When all candidates increase the supply of clientelistic offers, it increases the likelihood of voters to be persuadable, and this phenomenon exists alongside performance-based voting. The effect is substantively meaningful—each unit change moves the expected count by 4.2 and 3.7%, respectively. In other words, a respondent in a constituency where clientelistic offers are rife has a 20% higher *clientelism swing* count compared to a voter exposed to no clientelism. The emerg-

ing picture is not only that greater supply of private goods can induce voters to switch, as conventional wisdom on African politics suggests, but also that this exists alongside performance considerations of development and collective goods provision.

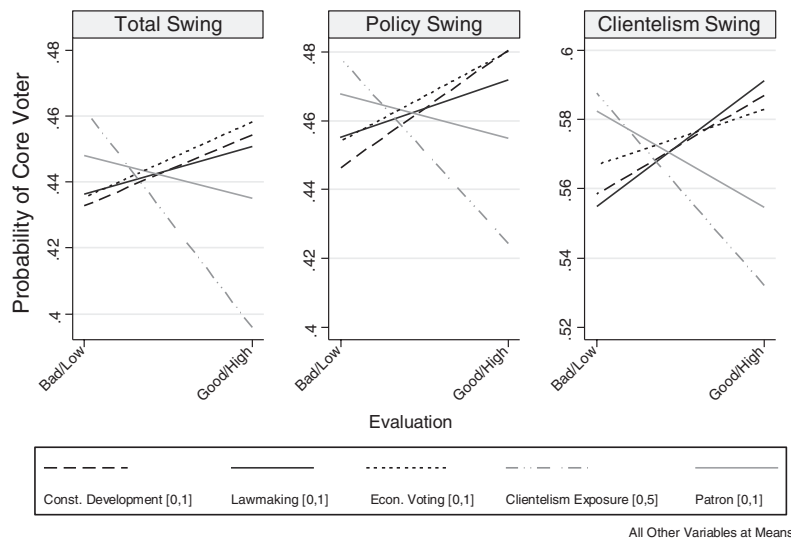
Poorer voters are systematically more persuadable along lines of *policy* and *clientelistic swing*. In Ghana, poorer voters value both clientelistic immediate goods and longer-term policy-related goods. This is an important corrective to the canonical expectation that poor voters only value immediate gratification. Men are more open to be convinced to switch parties (almost 24% increase in the expected count) than women, but only in the policy swing measure. There is a similar pattern with education, indicating that more educated people are likely to be persuadable on policy grounds. This finding, however, is not robust to clientelistic swing voting and actually runs in the opposite direction of total and policy swing voters. Educated voters are more critical, place greater weight on policies and performance, and are unconvinced by short-term clientelistic rents.

As expected, being a partisan decreases the likelihood of having swing characteristics (by 15.1% on *policy swing* and by 17.4% on *clientelistic swing*). It is notable that self-identification with a politicized tribe does not systematically affect in particular clientelistic swing voting, given that so much of the literature assumes that clientelistic goods are channeled through informal networks structured by affiliations such as kinship and tribe. The findings lend support to some recent research that questions the view of African elections as ethnic censuses (Cheeseman and Ford 2007; Fridy 2007; Hoffman et al. 2009; Lindberg and Morrison 2008) and suggests that the issue needs revisiting. Finally, age and having voted for the incumbent in the past election are irrelevant, while an individual in a safe haven again has a much higher likelihood of being a core voter than individuals in other areas.

Overall, the MPs' performance matters more (predictably) in a new democracy like Ghana for voters who are persuadable on the grounds of provision of policy/collective goods. But it is important to note that these voters exist in significant numbers. The type of voters who swing their ballot for clientelism are less persuaded by incumbents' performance in economic management and public and collective goods provision in the same way. This corroborates the argument that one needs to distinguish between different types of swing voters.

Figure 1 illustrates the impact of each of the five key independent variables on the probability of being a

FIGURE 1 Performance-Based Voting vs. Clientelism



core voter (having a swing count of 0) across the three swing-voting measures. The graphs demonstrate the substantive effects of voting based on performance in terms of collective goods (evaluations of constituency development, lawmaking, and economic voting) compared both to performance evaluations of clientelistic personal assistance provision and the pervasiveness of clientelistic offers in the constituency. In the eyes of incumbent supporters, good performance in terms of provision of collective goods by the MP increases the probability of them being core voters. For those who did not vote the current MP to power, it is a negative evaluation of the incumbent MP’s performance that has the same effect—making them less likely to consider switching over from their party’s candidate. On the other hand, a challenger supporter with a positive evaluation of the incumbent MP’s performance in terms of collective goods becomes a more likely swing voter. It is noteworthy that the analysis here finds fairly consistent evidence of voting based on performance of collective goods provision in a new democracy in Africa. The gray solid and dashed lines demonstrate the effects of clientelism in terms of the evaluation of the incumbent MP as a patron and the measure of the pervasiveness of clientelistic offers in the area of the respondent. Their effects run in the opposite direction and are also substantial.

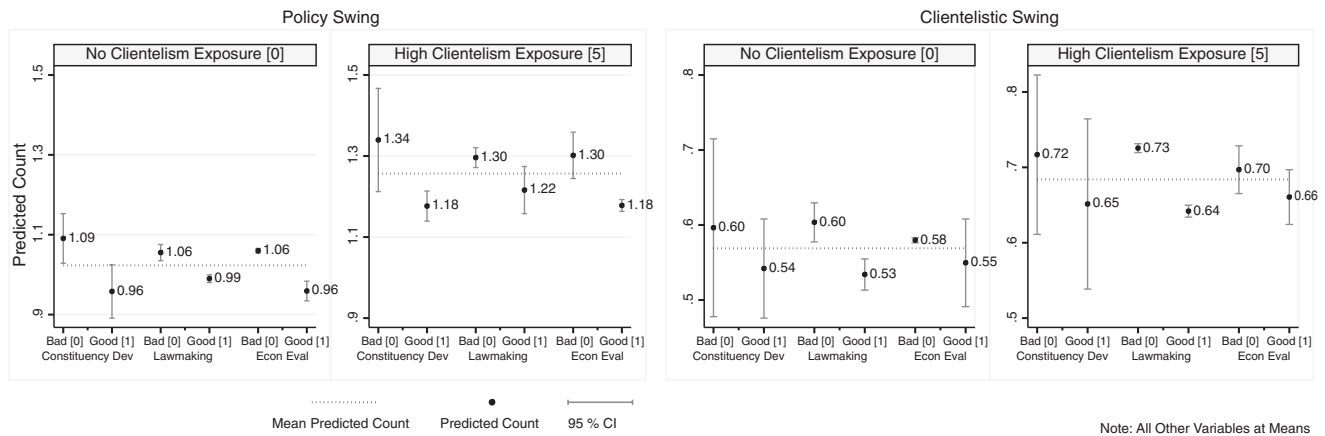
Figure 2 contains two graphs providing an alternative illustration of the results for policy and clientelistic swing, respectively. In each of the graphs, the prior mean predicted count value is shown with the horizontal dotted line. Each point estimate is the predicted count given specific values of the evaluations of the incumbent on con-

stituency development, lawmaking, and the economy.²⁴ Figure 2 demonstrates that while clientelism obviously works in this new democracy in Africa (higher predicted counts across all measures for both dependent variables in an area with a high level of exposure to clientelistic offers), an incumbent *always* does better when providing collective goods—regardless of what other candidates do and even if they flood the constituency with clientelistic goods. When incumbent politicians are considered to do well on provisions of these goods, the predicted count of swing characteristics always decreases. This holds for all measures across the dependent variables and in most cases at conventional significance levels.

For policy swing, the expected counts go down when the evaluation of lawmaking changes from bad to good, in both an area with clientelism at the lowest level and in an environment where clientelistic offers are rife. The pattern is the same for the other variables. The magnitude of the changes are in some instances even greater for the *clientelistic swing* measure, but the precision of the estimates is lower given the smaller number of individuals in this group and the fewer characteristics of swing the respondents have on average. Nonetheless, it is interesting to note that even voters who are persuadable on clientelistic grounds can to some extent be won over, or made to stay, by incumbents who do well in the

²⁴As noted in the figure, we generate the predicted count values for “Positive” when setting lawmaking, constituency development, and economic voting at 1 and “Negative” setting them at 0. We generate predicted counts for “High exposure” to clientelism by setting the value of clientelism supply at 5 and “No Exposure” by setting it at 0.

FIGURE 2 Effect of Collective Goods Provision in High and Low Clientelistic Environments



provision of collective goods. This reminds us that citizens respond to varying issues when they consider switching parties and candidates and that it is important to capture the full range of them when analyzing swing voters. It also points to the fact that the literature on vote buying and clientelism that has portrayed collective and private goods as mutually exclusive strategies may be misleading. Many voters are open to be persuaded on a mixture of both, but to a varying degree.

While an extensive literature claims that clientelism and “big man” politics are the main ways to gain and hold power in Africa, the results presented here thus challenge the primacy of that account. The implication is also that clientelism is not the only viable option for politicians in emerging democracies like Ghana and that it is possible to compete for many voters by providing collective goods and development, even in highly clientelistic environments.

Conclusions

This article joins a growing number of attempts to bring established scholarship on voting behavior to the context of emerging democracies, focusing on the puzzle of what makes voters persuadable. It establishes an important distinction between policy and clientelistic demands of citizens underlying swing voters’ behavior, with important implications. If swing voters put a premium on collective goods provision in making their choice, the iteration of competitive elections can nurture development. If persuadable voters instead demand clientelistic, private goods in exchange for their support, iterative elections can contribute to a further predation of state resources.

The analysis is based on a survey ($N = 1,600$) showing that as many as about half of voters now have swung

in the past and/or are open to switching parties. Advancing a new, more comprehensive and more theoretically fit measure of the inclination to be persuaded and analyzing the determinants of swing voting in Ghana’s 2008 election, the present article offers evidence supporting part of the literature’s theoretical arguments regarding voting behavior in new democracies while also challenging some of the current orthodoxies in African politics. In line with extant scholarship, the results show that clientelistic goods increase the extent to which people are likely to consider switching political loyalties. However, there is less evidence that incumbents obtain their only voting rewards for providing private goods, such as cash handouts, paying for school fees, giving jobs to particular individuals, and other private transfers.

The article thus challenges the conventional wisdom of African politics that clientelism alone determines electoral outcomes. The analysis demonstrates that significant numbers of swing voters evaluate incumbent MPs in terms of collective constituency goods, lawmaking, and improvement of the economy. The greater the dissatisfaction with performance on collective goods, the more likely these citizens will support challenger MPs, and the other way around. In addition to the measures of direct performance by the incumbent, retrospective economic voting plays an important role, alongside factors that are standard in the literature on voting in established democracies, such as partisanship, level of education, and access to information.

Clientelism may be ubiquitous in Africa, but as democracy matures in Ghana, voting decisions are shaped by many factors, including MP performance-based evaluations. Evidence in this article suggests that even in highly clientelistic environments, incumbents who wish to get reelected should seek to meet voter demands,

including delivering collective goods. As such, the process of winning elections in the new democratic dispensation ought to drive competitors to provide higher quality or more of collective goods. In the long run, iterative electoral processes in new democracies can create the kind of learning mechanism democratic theory anticipates, leading politicians to behave in ways more aligned with the interests and needs of the people.

References

- Abramowitz, Alan I. 1999. "Explaining Success and Failure in the 1998 Midterm Elections: Comparing the Influence of Swing Voters and Core Party Supporters." *PS: Political Science and Politics* 32(1): 60–61.
- Acemoglu, Daron, and James A. Robinson 2006. *Economic Origins of Dictatorship and Democracy*. New York: Cambridge University Press.
- Agrawal, Deepak K., Alan E. Gefland, and Steven Citron-Pousty. 2002. "Zero-Inflated Models with Application to Spatial Count Data." *Environmental Ecology Statistics* 9: 341–55.
- Atkins, David C., and R. J. Gallop. 2007. "Re-Thinking How Family Researchers Model Infrequent Outcomes: A Tutorial on Count Regression and Zero-Inflated Models." *Journal of Family Psychology* 21(4): 726–35.
- Barkan, Joel, ed. 2009. *Emerging Legislatures in Emerging Democracies*. Boulder, CO: Lynne Rienner.
- Barkan, Joel D. 1979. "Legislators, Elections, and Political Linkage." In *Politics and Public Policy in Kenya and Tanzania*, ed. J. D. Barkan and J. J. Okumu. New York: Praeger, 64–92.
- Barro, Robert J. 1973. "The Control of Politicians: An Economic Model." *Public Choice* 14(1): 9–42.
- Barro, Robert J. 1998. *Determinants of Economic Growth*. Cambridge, MA: MIT Press.
- Bartels, Larry M. 2000. "Partisanship and Voting Behavior: 1952–1996." *American Journal of Political Science* 44(1): 33–50.
- Bates, Robert H. 1981. *Markets and States in Tropical Africa*. Berkeley: University of California Press.
- Bernstein, Robert, Anita Chadha, and Robert Montjoy. 2000. "Overreporting Voting—Why It Happens and Why It Matters." *Public Opinion Quarterly* 65(1): 22–44.
- Bogaards, Matthijs. 2008. "Dominant Party Systems and Electoral Volatility in Africa: A Comment on Mozaffar and Scarritt." *Party Politics* 14(1): 113–30.
- Bollen, Kenneth, and Robert W. Jackman. 1989. "Democracy, Stability and Dichotomies." *American Sociological Review* 54(4): 438–57.
- Brown, Cynthia J., Jose A. Pagan, and Eduardo Rodriguez-Oreggia. 2005. "The Decision-Making Process of Health Care Utilization in Mexico." *Health Policy* 72(1): 81–91.
- Burnell, Peter. 2001. "The Party System and Party Politics in Zambia: Continuities Past, Present, and Future." *African Affairs* 100(399): 239–63.
- Cameron, A. Colin, and Pravin K. Trivedi. 1998. *Regression Analysis of Count Data*. Cambridge: Cambridge University Press.
- Campbell, James E. 2008. *The American Campaign: U.S. Presidential Campaigns and the National Vote*. College Station: Texas A&M University Press.
- Chandra, Kanchan. 2004. *Why Ethnic Parties Succeed*. New York: Cambridge University Press.
- Chandra, Kanchan. 2009. "Why Voters in Patronage Democracies Split Their Tickets: Strategic Voting in Ethnic Parties." *Electoral Studies* 28(1): 21–32.
- Chazan, Naomi. 1983. *An Anatomy of Ghanaian Politics*. Boulder, CO: Westview Press.
- Cheeseman, Nicolas, and Robert Ford. 2007. "Ethnicity as Political Cleavage." Afrobarometer Working Paper No. 83.
- Collier, Paul, and Pedro C. Vicente. 2008. "Votes and Violence: Evidence from a Field Experiment in Nigeria." CSAE Working Paper Series 2008-16, Center for the Study of African Economies, University of Oxford.
- Coppedge, Michael, and Wolfgang H. Reinicke. 1990. "Measuring Polyarchy." *Studies in Comparative International Development* 25(1): 51–73.
- Cox, Gary W., and Michael McCubbins. 1993. *Legislative Leviathan*. Berkeley: University of California Press.
- Dahl, Robert. 1971. *Polyarchy: Participation and Opposition*. New Haven, CT: Yale University Press.
- Dahl, Robert. 1989. *Democracy and Its Critics*. New Haven, CT: Yale University Press.
- Dalton, Russell J., and Martin P. Wattenberg. 2000. *Parties without Partisans: Political Change in Advanced Industrial Democracies*. Oxford: Oxford University Press.
- Desposato, Scott W. 2007. "How Does Vote Buying Shape the Legislative Arena?" In *Elections for Sale: The Causes and Consequences of Vote-Buying*, ed. F. C. Schaffer. Boulder, CO: Lynne Rienner, 101–22.
- Diamond, Larry. 1996. "Democracy in Latin America: Degrees, Illusions, and Directions for Consolidation." In *Beyond Sovereignty: Collectively Defending Democracy in the Americas*, ed. Tom J. Farer. Baltimore: Johns Hopkins University Press, 52–106.
- Dixit, Avinash, and Johnathan Londregan. 1996. "The Determinants of Success of Special Interests in Redistributive Politics." *Journal of Politics* 58(4): 1132–55.
- Duff, Brian, Michael J. Hanmer, Won-Ho Park, and Ismail K. White. 2007. "Good Excuses: Understanding Who Votes with an Improved Turnout Question." *Public Opinion Quarterly* 71(1): 67–90.
- Dunning, Thad, and Susan C. Stokes. 2008. "Clientelism as Persuasion and as Mobilization." Paper presented at the annual meeting of the American Political Science Association, Boston.
- Eckel, Catherine C., and Phillip J. Grossman. 2008. "Chapter 113: Men, Women and Risk Aversion: Experimental Evidence." *Handbook of Experimental Economics Results* 1: 1061–73.
- Elhai, John D., Patrick S. Calhoun, and Julian D. Ford. 2008. "Statistical Procedures for Analyzing Mental Health Services Data." *Psychiatry Research* 160(2): 129–36.

- Enelow, James, and Melvin J. Hinich. 1981. "A New Approach to Voter Uncertainty in the Downsian Spatial Model." *American Journal of Political Science* 25(3): 483–93.
- Englebert, Pierre. 2000. "Solving the Mystery of the AFRICA Dummy." *World Development* 28(10): 1821–35.
- Eversveld, Samuel J. 1952. *Democracy in Action: Political Parties*. Ann Arbor, MI: Wahr.
- Fearon, James D., and David Laitin. 1996. "Explaining Interethnic Cooperation." *Annual Political Science Review* 90(4): 715–35.
- Feddersen, Timothy J., and Wolfgang Pesendorfer. 1996. "The Swing Voter's Curse." *American Economic Review* 86(3): 408–24.
- Ferejohn, John A. 1986. "Incumbent Performance and Electoral Control." *Public Choice* 50(1): 5–25.
- Ferree, Karen. 2006. "Explaining South Africa's Racial Census." *Journal of Politics* 68(3): 803–15.
- Ferree, Karen. 2010. "The Social Origins of Electoral Volatility in Africa." *British Journal of Political Science* 40(4): 759–79.
- Fiorina, Morris. 1981. *Retrospective Voting in American National Elections*. New Haven, CT: Yale University Press.
- Fraga, Luis, and Ricardo Ramirez. 2001. "Latinos as a Swing Vote in 2000? Testing the California Trend." Presented at the annual meeting of the Western Political Science Association, Las Vegas, NV.
- Franklin, Mark. 2004. *Voter Turnout and Dynamics of Electoral Competition in Established Democracies since 1945*. Cambridge: Cambridge University Press.
- Fridy, Kevin. 2007. "The Elephant, Umbrella, and Quarrelling Cocks." *African Affairs* 106(423): 281–305.
- Gonzales-Ocantos, Ezequiel, Chad Kiewet de Jonge, Carlos Melendez, Javier Osario, and David W. Nickerson. 2011. "Vote-Buying and Social Desirability Bias: Evidence from Nicaragua." *American Journal of Political Science* 56(1): 202–17.
- Green, Donald, Bradley Palmquist, and Eric Shickler. 2002. *Partisan Hearts and Minds*. New Haven, CT: Yale University Press.
- Habyarimana, James, Macartan Humphreys, Daniel Posner, and Jeremy Weinstein. 2007. "Why Does Ethnic Diversity Undermine Public Goods Provision?" *American Political Science Review* 101(4): 709–25.
- Herbst, Jeffrey. 2000. *States and Power in Africa*. Princeton, NJ: Princeton University Press.
- Hicken, Allen. 2011. "Clientelism." *Annual Review of Political Science* 14: 289–310.
- Hoffman, Barak, Clarke C. Gibson, Karen E. Ferree, and James D. Long. 2009. "Explaining the African Vote." Presented at the annual meeting of the American Political Science Association.
- Horowitz, Donald. 1985. *Ethnic Groups in Conflict*. Berkeley: University of California Press.
- Hyden, Goran. 1980. *Beyond Ujamaa in Tanzania*. Berkeley: University of California Press.
- Ichino, Nahomi, and Noah L. Nathan. 2013. "Do Primaries Improve Electoral Performance? Clientelism and Intra-Party Politics in Ghana." *American Journal of Political Science*. Forthcoming.
- Ishiyama, John, and Krystal Fox. 2006. "What Affects the Strength of Partisan Identity in Sub-Saharan Africa." *Politics and Policy* 34(4): 748–73.
- Jackson, Robert H. 1990. *Quasi-States*. Cambridge: Cambridge University Press.
- Kaufman, Robert R. 1974. "The Patron-Client Concept and Macro-Politics: Prospects and Problems." *Comparative Studies in Society and History* 16(4): 284–308.
- Keith, Bruce E., David B. Magleby, Candice J. Nelson, Elizabeth Orr, Mark C. Westlye, and Raymond E. Wolfinger. 1992. *The Myth of the Independent Voter*. Berkeley: University of California Press.
- Key, V. O. 1966. *The Responsible Electorate*. New York: Vintage.
- Kitschelt, Herbert, and Steve Wilkinson, eds. 2007. *Patrons, Clients, and Policies*. Cambridge: Cambridge University Press.
- Kramer, Gerald H. 1977. "A Dynamic Model of Political Equilibrium." *Journal of Economic Theory* 16(2): 310–34.
- Kramon, Eric. 2011. "Why Do Politicians Buy Votes When the Ballot Is Secret? Theory and Experimental Evidence from Kenya." Presented at the Working Group on African Political Economy, Stanford.
- Kramon, Eric, and Keith R. Weghorst. 2012. "Can We Count On the Item Count Technique? Overcoming Response Bias in Developing Countries." Working paper, University of California, Los Angeles and Stanford University; University of Florida.
- Krause, George A. 1997. "Voters, Information Heterogeneity, and the Dynamics of Aggregate Economic Expectations." *American Journal of Political Science* 41(4): 1170–1200.
- Kriekhaus, Johnathan. 2006. *Dictating Development*. Pittsburgh, PA: University of Pittsburgh Press.
- Leech, Dennis. 2003. "Computing Power Indices for Large Voting Games." *Management Science* 49(6): 831–37.
- Lemarchand, Rene. 1972. "Political Clientelism and Ethnicity in Tropical Africa: Competing Solidarities in Nation-Building." *American Political Science Review* 66(1): 68–90.
- Lijphart, Arendt. 1999. *Patterns of Democracy*. New Haven, CT: Yale University Press.
- Lindbeck, A., and J. W. Weibull. 1987. "Balanced-Budget Redistribution as the Outcome of Political Competition." *Public Choice* 52: 273–97.
- Lindberg, Staffan. 2003. "It's Our Time to 'Chop'." *Democratization* 10(2): 121–40.
- Lindberg, Staffan I. 2009a. "Introduction." In *Democratization by Elections: A New Mode of Transition?* ed. Staffan Lindberg. Baltimore: Johns Hopkins University Press, 1–22.
- Lindberg, Staffan I. 2009b. "The Power of Elections Revisited." In *Democratization by Elections: A New Mode of Transition?*, ed. Staffan Lindberg. Baltimore: Johns Hopkins University Press, 25–46.
- Lindberg, Staffan I. 2010. "What Accountability Pressures Do MPs in Africa Face and How Do They Respond? Evidence from Ghana." *Journal of Modern African Studies* 48(1): 117–42.

- Lindberg, Staffan I. (forthcoming) 2013. "Have the Cake and Eat It: The Rational Voter in Africa." *Party Politics* 19, published OnlineFirst: <http://ppq.sagepub.com/content/early/2012/02/21/1354068811436030.abstract?papetoc>
- Lindberg, Staffan I., and K. C. Morrison. 2008. "Are African Voters Really Ethnic or Clientelistic? Survey Evidence from Ghana." *Political Science Quarterly* 123(1): 95–122.
- Lindberg, Staffan I., and Minion K. C. Morrison. 2005. "Exploring Voter Alignments in Africa: Core and Swing Voters in Ghana." *Journal of Modern African Studies* 43(4): 1–22.
- Lipset, Seymour Martin. 1961. *Political Man*. Baltimore: Johns Hopkins University Press.
- Long, Scott J. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.
- Magaloni, Beatriz, Alberto Díaz-Cayeros, and Federico Estévez. 2007. "Clientelism and Portfolio Diversification: A Model of Electoral Investment with Application to Mexico." In *Patrons, Clients, and Policies*, ed. H. Kitschelt and S. Wilkinson (eds.). Cambridge: Cambridge University Press, 182–205.
- Mayer, William G. 2007. *The Swing Voter in American Politics*. Washington, DC: Brookings Institution Press.
- Mayer, William G. 2008. "The Swing Voter in American Presidential Elections." *American Politics Research* 35(3): 358–88.
- McCullagh, P., and J. A. Nelder. 1989. *Generalized Linear Models*. 2nd ed. London: Chapman and Hall.
- McKelvey, Richard D. 1975. "Policy Related Voting and Electoral Equilibrium." *Econometrica* 43(5/6): 815–43.
- McLaughlin, Eric S. 2007. "Beyond the Racial Census." *Comparative Political Studies* 40(4): 435–56.
- Medard, Jean-Francois. 1982. "The Underdeveloped State in Tropical Africa." In *Private Patronage and Public Power: Political Clientelism in the Modern State*, ed. Christopher Clapham. London: Frances Pinter, 162–92.
- Miller, Warren E. 1991. "Party Identification, Realignment, and Party Voting: Back to the Basics." *American Political Science Review* 85(2): 557–68.
- Minami, M., C. E. Lennert-Cody, W. Gao, and M. Román-Verdesoto. 2007. "Modeling Shark by Catch: The Zero-Inflated Negative Binomial Regression Model with Smoothing." *Fisheries Research* 84(2): 210–21.
- Nichter, Simon. 2008. "Vote Buying or Turnout Buying?" *American Political Science Review* 102(1): 19–31.
- Norris, Pippa, and Robert Mattes. 2003. "Does Ethnicity Determine Support for the Governing Party? The Structural and Attitudinal Basis of Partisan Identification in 12 African Nations." *Afrobarometer Working Paper Series*.
- Nugent, Paul. 2001. "Winners, Losers, and Also Rans." *African Affairs* 100(400): 405–28.
- Posner, Dan. 2004. "Measuring Ethnic Fractionalization in Africa." *American Journal of Political Science* 48(4): 849–64.
- Posner, Daniel N. 2005. *Institutions and Ethnic Politics in Africa*. New York: Cambridge University Press.
- Posner, Daniel N. 2007. "Regime Change and Ethnic Cleavages in Africa." *Comparative Political Studies* 40(11): 1302–27.
- Powell, G. Bingham, Jr., and Guy D. Whitten. 1993. "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context." *American Journal of Political Science* 37(2): 391–414.
- Powell, John D. 1970. "Peasant Society and Clientelist Politics." *American Political Science Review* 64(2): 411–25.
- Reno, William. 1998. *Warlord Politics and African States*. Boulder, CO: Lynne Rienner.
- Rose, C. E., S. W. Martin, K. A. Wannemuehler, and B. D. Pilkaytis. 2006. "On the Use of Zero-Inflated and Hurdle Models for Modeling Vaccine Adverse Event Count Data." *Journal of Biopharmaceutical Statistics* 16(4): 463–81.
- Schady, Norbert R. 2000. "The Political Economy of Expenditures by the Peruvian Social Fund (FONCODES), 1991–1995." *American Political Science Review* 94(2): 289–304.
- Scott, James C. 1972. "Patron-Client Politics and Political Change in Southeast Asia." *American Political Science Review* 66(1): 91–113.
- Scott, James C. 1977. *The Moral Economy of the Peasant: Rebellion and Sustenance in Southeast Asia*. New Haven, CT: Yale University Press.
- Shaw, Daron. 2008. "Swing Voting and U.S. Presidential Elections." In *The Swing Voter in American Politics*, ed. William G. Mayer. Washington, DC: Brookings Institution Press, 75–101.
- Snyder, Jack. 2000. *From Voting to Violence: Democratization and Nationalist Conflict*. New York: W. W. Norton.
- Stokes, Susan. 2005. "Perverse Accountability." *American Political Science Review* 99(3): 315–25.
- Stokes, Susan, and Thad C. Dunning. 2008. "Clientelism as Persuasion and as Mobilization." Presented at the annual meeting of the American Political Science Association, Boston.
- Van de Walle, Nicholas. 2001. *African Economies and the Politics of Permanent Crisis, 1979–1999*. Cambridge: Cambridge University Press.
- Van de Walle, Nicolas. 2003. "Presidentialism and Clientelism in Africa's Emerging Party Systems." *Journal of Modern African Studies* 41(2): 297–321.
- Vicente, Pedro C. 2012. "Is Vote-Buying Effective? Evidence from a Field Experiment in West Africa." Working paper, Universidade Nova de Lisboa, and Bureau for Research and Economic Analysis of Development - BREAD.
- Wantchekon, Leonard. 2003. "Clientelism and Voting Behavior." *World Politics* 55(3): 399–422.
- Weghorst, Keith R. 2012. "Uncovering Sensitive Political Attitudes with List Experiments and Randomized Response: A Survey Experiment Assessing Data Quality in Tanzania." Working paper, Department of Political Science, University of Florida.
- Weghorst, Keith R., and Staffan I. Lindberg. 2011. "Effective Opposition Strategies." *Democratization* 18(5): 1193–1214.
- Yarahuan, Perez G. 2006. "Policy Making and Electoral Politics: Three Essays on the Political Determinants of Social Welfare Spending in Mexico, 1988–2003." PhD dissertation, University of Chicago.
- Yau, Kelvin K. W., and Andy H. Lee. 2001. "Zero-Inflated Poisson Regression with Random Effects to Evaluate an Occupations Injury Prevention Programme." *Statistical Medicine* 20: 2907–20.
- Young, Crawford. 1976. *The Politics of Cultural Pluralism*. Madison: University of Wisconsin Press.

Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web site:

Appendix A: Constructing the Dependent Variables

Appendix B: Summary Statistics of the Independent Variables; Background Constituency Information; and

Constructing the Index of Pervasiveness of Clientelistic Offers

Appendix C: Details and Justification of the Count Model (Negative Binomial Regression Model)

Appendix D: Dependent Variables Analysis of Model Fit

Appendix E: Robustness Checks of Results

Appendix F: Robustness Check with ZINB Model Estimation

Appendix G: Sampling Protocol