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ELECTORAL MANIPULATION IN THE GREY ZONE

Evidence from Ghana's Parliamentary Elections in 2008 and 2012

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ABSTRACT

Electoral manipulation undermines the function of elections as a mechanism of representation and accountability, and erodes public trust in government institutions; however, our theoretical understanding of its causes is still limited. Research has focused on the blunter forms of electoral manipulation. Less attention has been given to the more subtle forms, although these are more common. This paper investigates one type of subtle electoral manipulation: miscounting, meaning election officers who selectively reject ballots during the counting. It suggests that miscounting (one of the ways in which political candidates can rig elections) is characterised by low risks and high direct costs. On one hand, it is almost invisible, embedded in the sociocultural norms and practices surrounding elections in many African countries. On the other, it is expensive, requiring large amounts of patronage to co-opt election officers. This makes miscounting attractive only to incumbents who fear electoral defeat and have deep clientelist networks. The paper tests this argument against data from the 2008 and 2012 parliamentary elections in Ghana. It shows that the number of ballot rejections is positively correlated with the number of years the party of the incumbent MP has held the constituency seat, but negatively correlated when this variable is interacted with the win-margin in the last parliamentary election. This pattern is consistent with the model, supporting the argument that the effect of electoral uncertainty on miscounting is conditional. When MPs do not have resources at their disposal, they choose other types of electoral manipulation or opt out of electoral rigging altogether.

Keywords: electoral manipulation, ballot rejection, miscounting, political parties, Ghana

INTRODUCTION

Today, nearly all countries in the world hold elections. However, the elections they hold are often rigged:[1] voter registers are inflated, ballot boxes are stuffed or destroyed, and voters are threatened or prevented from going to the polls. The Varieties of Democracy (V-Dem) dataset suggests that nearly one third of all legislative elections held in Africa since 2010 were either fundamentally flawed (8%) or flawed to extent that irregularities likely decided who won the legislative majority (22%) (Coppedge et al. 2001). Another 21% were ambiguous, making it difficult to determine whether the irregularities decided who won the legislative majority.

Electoral manipulation undermines the function of elections as a mechanism of representation and accountability and erodes public trust in government institutions. However, our theoretical understanding of its causes is still limited. Research has focused on the blunter types of electoral manipulation: vote buying (Nichter 2014), violence (Birch et al. 2020), and ballot stuffing (Mebane 2008; Myagkov et al. 2008). Less attention has been given to the subtler types – what I refer to as *electoral manipulation in the grey zone* – although the subtler forms are probably more common.

In this paper, I look at one type of grey zone electoral manipulation: miscounting, which means that election officers selectively reject ballots during the counting. Ballot rejection or invalid voting has been studied in recent years both at sub-national level (Aldashev & Mastrobuoni 2019; Dejaeghere & Vanhoutte 2016; Driscoll & Nelson, 2014; Fatke & Heinsohn, 2016; Katz & Levin, 2016; Pachon et al., 2017; Zucco Jr & Nicolau 2016) and cross-national levels (Cohen 2017, 2018; Kouba & Lysek 2016; Lysek et al. 2020; Martinez i Coma & Werner 2019; Moral, 2016; Singh 2017). It has been attributed to voter error, poor electoral administration, distrust in government, social marginalisation, and political unrest (Kouba & Lysek 2019). A few studies have noted the correlation with electoral competitiveness (Aldashev & Mastrobuoni 2019; Dejaeghere & Vanhoutte 2016; Kouba & Lysek 2016) but only one has considered the possible link to electoral manipulation. Aldashev & Mastrobuoni (2019), in their study of invalid voting in parliamentary elections in Italy, explictly examine the effect of electoral manipulation. However, they conclude that 'there is no evidence that electoral fraud explains the empirical relationship [between invalid voting and electoral competitiveness]' (ibid., p. 306).

In this paper, I model ballot rejections as a function of miscounting. I argue that miscounting (one of the ways in which political candidates can rig elections) is characterised by low risks and high direct costs. On one hand, miscounting is

1 I use the terms electoral 'manipulation', 'rigging', and 'fraud' interchangeably.

almost invisible, embedded in the sociocultural norms and practices surrounding elections in many African countries. On the other, it is expensive, requiring large amounts of cash and other goods to co-opt election officers and deploy and maintain agents to monitor and enforce compliance during the counting. This makes miscounting attractive only to incumbents who fear electoral defeat and have deep clientelist networks. I test my model against data from the 2008 and 2012 parliamentary elections in Ghana. I find that the number of ballot rejections is positively correlated with the number of years the party of the incumbent MP has held the constituency seat, but negatively correlated when this variable is interacted with the win-margin in the last parliamentary election. This pattern is consistent with my model, supporting the argument that the effect of electoral uncertainty on miscounting is conditional. When MPs do not have resources at their disposal, they choose other types of electoral manipulation or opt out of electoral rigging altogether.

The paper contributes to the academic literature in three ways. First, it points to the effect of electoral manipulation on invalid voting, which has previously been overlooked in the literature. Certainly in the context of Ghana, electoral manipulation should be taken into consideration. Second, the paper draws attention to some of the subtler ways in which elections are rigged. They may have been described qualitatively but rarely have they been examined quantitatively. Finally, the paper contributes to a more nuanced theoretical understanding of electoral manipulation by demonstrating the variable costs. Miscounting is not an option that is available to all political candidates.

The paper is structured as follows: Section 2, background, describes the counting procedure in Ghana. Grey zone electoral manipulation tends to exploit minuscule loopholes in the electoral process. This is also the case with miscounting, where the counting procedure and specifically the procedure for rejecting ballots permit electoral manipulation. Section 3 develops the model, drawing on existing theory about elections in Africa in general and in Ghana specifically. Section 4 tests the model against data from Ghana. Finally, section 5 draws conclusions.

BACKGROUND

Excluding the 1992 elections, where most voters voted for the first time, the number of ballot rejections in parliamentary elections in Ghana has remained relatively constant. In the last four elections for which data are available, 1.6% of the ballots cast were rejected. Compared with other countries in Africa, this is relatively low. In Cote d'Ivoire, for example, a country with an electoral system similar to Ghana's, 5.2% of the ballots cast in the 2021 parliamentary elections were rejected. Similarly, in Uganda, another country that combines a presidential

system with first-past-the post (FPTP) parliamentary elections, 4.9% of the ballots cast in the 2016 parliamentary elections were rejected. Table 3 in the appendix compares the number of ballots rejected in recent parliamentary elections in Africa. The continental average is 4-5% (3-4% when extreme outliers are excluded).[2] The average for countries with political and electoral systems similar to Ghana's (presidential or semi-presidential systems and FPTP or two-round system parliamentary elections) is 5-6% (around 4% when extreme outliers are excluded).

Although relatively few ballots are rejected in Ghana, ballot rejections may have been decisive in around 7% of all parliamentary elections since 1996 and may have determined the legislative majority in three of the last six parliaments. Table 1 illustrates that in 2000, there were 18 constituencies where ballot rejections exceeded the win-margin, while the margin of majority in parliament was seven seats. In 2008, there were also 18 elections where ballot rejections exceeded the win-margin, while the margin of majority was nine seats. Finally, in 2020, there were 21 elections where ballot rejections exceeded the win-margin, while the two dominant parties, the ruling New Patriotic Party (NPP) and the opposition National Democratic Congress (NDC), won the same number of seats. Table 1 also indicates the number of ballots rejected in first round presidential elections.

Table 1: Rejected ballots in Ghana's parliamentary elections

	1992	1996	2000	2004	2008	2012	2016	2020
Constituencies	200	200	200	230	230	275	275	275
Ballots rejected (% of ballots cast)	3.0	1.1	2.1	1.6	1.6	1.6	1.0	1.4
Constituencies where ballots rejected exceeded the win-margin	*	6	18	14	18	17	16	21
Margin of majority in parliament (seats)	178	72	7	34	9	26	63	0
Ballots rejected in (first round) presidential elections (% of ballots cast)	3.6	1.7	1.6	2.1	2.4	2.2	1.6	2.3

Source: Data extracted from official electoral results and Duodo (2021)
* Data unavailable

2 The 2013 parliamentary elections in Mauritania, where one third of the ballots were rejected.

This differs considerably from the number of ballots rejected in parliamentary elections, supporting the claim that ballot rejections are not just a result of voter error; and that miscounting in parliamentary elections is not simply a reflection or extension of miscounting in the presidential elections. In other words, while parliamentary and presidential elections held on the same day are naturally linked, they also have their own identities.

The counting procedure and the procedure for rejecting ballots has not changed substantially since 1992. Ballots are counted at polling station level. Immediately after the close of voting, the presiding officer opens the ballot box and sorts the ballots. Ballots that do not bear the official mark of the Electoral Commission, that do not clearly indicate for whom they have been cast, that are not thumb printed, or that contain writings or marks by which the voter could be identified, are rejected. Rejected ballots are shown to the polling agents who are given the opportunity to express their opinion. The word 'REJECTED' is endorsed on the ballots, and if a polling agent disagrees with the rejection, the words 'REJECTION OBJECTED TO' are added. The presiding officer then counts the ballots and records the results on the declaration form (Electoral Commission of Ghana 2016, regulations 37-39).[3]

The procedure has both advantages and disadvantages. An advantage is that it obviates sensitive ballot box transfers before the ballots have been counted. Another is that it allows the political parties and election observers to conduct parallel vote tabulations. A disadvantage is that it places considerable responsibility in the hands of the election officers. Rejected ballots are kept separately and submitted to the returning officer, together with the declaration form and other electoral material. The returning officer may decide to review the ballots that have been rejected but this rarely happens, unless the number is abnormally high. Overall, this makes the counting procedure one of the most delicate steps of the Ghanaian electoral process.

Rejected ballots are generally attributed to voter error, usually meaning illiteracy, inexperience, and misinformation: voters who do not mark their ballots, voters who mark their ballots incorrectly (with a pen, with the wrong finger,[4] or outside the designated boxes), or voters who mark their ballot multiple times. Gyimah-Boadi (1997, p. 83) remarks about the 1996 elections that 'the relatively high incidence of rejected ballot papers […] suggests inadequate voter education', while Debrah (2011, p. 36), in his review of the Electoral Commission's performance since 1996, blames 'the incidents of rejected ballot papers and

3 The language of the relevant regulations was obtained from the Electoral Commission of Ghana (2012).

4 In 2008, voters were told they could use any finger. However, the Electoral Commission, in consultation with the Inter-Party Advisory Committee (IPAC), subsequently decided that only the thumb could be used. On election-day, the little finger was dipped in indelible ink, which added to the confusion. As a result, some voted with their little finger instead of their thumbs.

problems associated with counting […] on the EC's inability to provide adequate voter information and education' . Similarly, the Coalition of Domestic Observers (CODEO) (2009, p. 4) has recommended '[a] comprehensive and focused voter education in all facets of the electoral process, including incidence of rejected ballots'. The former Commissioner for Human Rights and Administrative Justice, Francis Emile Short, has stressed 'the need for the Electoral Commission (EC) to collaborate with the National Commission on Civic Education (NCCE) to sufficiently educate electorates on proper thumb printing to ensure that the incidence of rejected ballots is reduced to the barest minimum' (Asiamah 2012). This reflects the literature on electoral administration, where rejected ballots have been used as 'an indicator of the combined quality of voter education, ballot paper design and counting instructions (including rules for acceptance of cast votes)' (Elklit & Reynolds 2002, p.102).

A few papers and reports have also linked rejected ballots to electoral manipulation: 'partisan electoral officers who deliberately spoil ballot papers with ink so as to render those ballots invalid to the advantage of another political party' (Gyampo 2009, p. 292). The Carter Center (2009, p. 45), for example, in its report on the 2008 elections, notes that it 'observed one counting in the Akwatia district of the Eastern Region where more than 200 ballots were ruled invalid despite their clearly illustrating the correct intent of the voter' and that 'the invalidated ballots in this case were overwhelmingly for one candidate'.

In sum, in Ghana ballots are counted at polling station-level. An advantage is that this obviates sensitive ballot box transfers. Also, it allows political parties to conduct parallel vote tabulations. A disadvantage is that it places considerable responsibility in the hands of the election officers. Rejected ballots are generally attributed to voter error but have also been linked to electoral manipulation.

THEORY

In the following model I argue that miscounting is characterised by low risks but high direct costs. The MPs are unlikely to get caught but they need deep clientelist networks, including election officers who can selectively reject ballots in their favour (or look the other way when polling agents destroy ballots cast in favour of other parliamentary candidates). The low risks and high direct costs make miscounting attractive to MPs who fear electoral defeat and have considerable resources at their disposal.

Goods Distribution and Co-optation

Elections in Ghana have been described as harvesting season: 'when it is time to reap the fruits from the parliamentary tree' (Lindberg 2003, p.127). Lindberg

(2003, p. 135) further argues that 'the culture of gift-giving has always existed in Ghana' but that 'this has been turned into a weapon in the political war over parliamentary and executive power'. Nugent (2007, p. 256) argues that Ghanaian 'voters expect to be showered with gifts as evidence that the candidate genuinely does have local interests at heart'.

In addition, Lindberg (2003, p. 131) reports that in 2000, 57% of Ghanaian MPs spent more than 25% of their campaign budget on 'personalised patronage'; and that, in 2008, 85% of Ghanaian voters expected their MP to 'first and foremost deliver personal or very narrow, small-scale "club" goods' (Lindberg 2012, p. 949). His findings lead him to the conclusion that, in Ghana, '[l]egislative elections are not about legislation, or executive oversight for that matter. They are about local small-scale club and private goods'(ibid.).

These goods are not single transactions. They are part of 'complex, continuing webs of exchange, obligation, and reciprocity' (Kitschelt & Wilkinson 2007, p. 19) in which the MPs distribute goods 'in exchange for contributions to their electoral efforts' (ibid., p. 8). The purpose is 'to establish and reproduce pacts of mutual loyalty' (Lindberg 2003, p. 124): the clients are '(re-)assured that the "big man" (or "big woman" for that matter) will attend to their needs in times of hardship' (ibid.), while the MPs secure potentially decisive votes.

The election officers are part of these networks. They are recruited from the electoral areas to which they are deployed on election-day and are employed for only a few days around the elections. After that they return to their regular jobs (or unemployment). The MPs and their parties know this and use it to co-opt election officers. Asunka et al. (2017) suggest the election officers respond by turning 'a blind eye on fraudulent activities' or agreeing to 'inflate vote tallies' (ibid., p. 133). I argue that another way is by considering the incumbent MP's interests during the counting: by allowing polling agents more space to challenge ballots and by scrutinising ballots cast for other parliamentary candidates more closely. This argument is consistent with the limited literature on the recruitment and training of election officers (Cantú & Ley 2017).

Obviously, not all election officers reciprocate. There are competing norms, overlapping networks, and costs associated with reneging contracts with the Electoral Commission (namely the opportunity to work as an election officer in the future). Some election officers may reciprocate spontaneously, for example, when what they receive is sufficiently valuable or when they attribute little value to other, competing norms (Lawson & Greene 2014). Lawson and Greene (2014, p. 63) have explored the conditions under which 'feelings of obligation become activated to serve clientelism'. They point to two factors: the value of what is provided, and the value of other obligations. Others must be reminded to 'uphold their end of the bargain' (van de Walle 2007, p. 64). The polling agents serve as

brokers in this relationship between the incumbent MP and her party and the election officers (Ascencio & Rueda, p. 2019). First, they are part of 'the complex pyramidal network' through which MPs 'organize the flow of material resources' (Kitschelt & Wilkinson 2007, p. 8). Second, they are the 'means to monitor and enforce the terms of the clientelistic bargain' (ibid., p. 12).

Two properties characterise miscounting. The first is that *the risks are low*. Miscounting is practically invisible, embedded in the sociocultural norms and practices that surround elections in Ghana. The parliamentary candidates are expected to distribute goods and the election officers are mandated to reject ballots during the counting. Miscounting constitutes electoral manipulation in the grey zone. Election observers can increase the risks (Asunka et al. 2017) but only marginally. They may be present at a polling station where ballots are rejected in favour of the incumbent MP but are still unable to detect the manipulation.

The second property is that *the direct costs are high*. First, even when election officers reciprocate, the returns are low. Miscounting in a single polling station rarely generates more than 20-30 votes.[5] By contrast, many types of wholesale manipulation can generate hundreds of votes. For example, a single stolen or destroyed ballot box can remove an entire polling station from the election results.[6] This means the MPs must run multiple parallel operations to affect the electoral outcome; i.e. they must distribute goods and co-opt election officers in multiple polling stations and they must deploy and maintain polling agents to monitor and enforce compliance during the counting.

Second, miscounting is committed by election officers on the margins of campaign organisation; or, rather, outside the organisation itself. While this reduces the risks, it also introduces agency loss. The goods that are distributed through the polling agents may not reach the election officers, and the election officers may accept bribes from other parliamentary candidates.

A Model of Miscounting

Building on these arguments, I propose the following model. The model assumes that the marginal benefit of electoral manipulation is highest around the winning

5 In 2008, the average number of ballots rejected per polling station was 6.6. In 2012, it was 6.9. Data disaggregated at constituency-level are available only for 2012. They suggest the average number of ballots rejected per polling station varied from less than 0.1 in Madina, Greater Accra, to 21.5 in Tempane, Upper East. The data are approximately normally distributed with more than two-thirds of the observations falling within one standard deviation above or below the mean. Assuming similar distributions at polling station-level, even in Tempane, Upper East, it should be unlikely to find polling stations with more than 30 ballots rejected (less than 5% in the constituency).

6 In 2008, the average number of votes per polling station was 407. In 2012, it was 425. By carefully selecting and targeting specific polling station, parliamentary candidates can remove hundreds of votes cast for their opponents from the election results.

threshold, meaning that MPs invest in electoral manipulation when they fear electoral defeat. The risks associated with miscounting are low, making it preferable to other types of electoral manipulation. However, the direct costs are also high, meaning it is expensive and therefore an option available only to MPs with deep clientelist networks.

The model emphasises the direct costs of electoral manipulation: what the MPs have to pay. Birch (2011) discusses the 'human resources costs' of electoral malpractice: 'the participation of relatively large numbers of political actors' and the 'considerable costs associated with inducing them to behave in the manner required and monitoring their behaviour so as to prevent agency loss' (Birch 2011, p. 57). In addition, Birch discusses the 'external (international) costs' of rigging, arguing that 'states that are heavily dependent on international trade, aid, and/or foreign direct investment (FDI) can ill afford to see the legitimacy of their regimes plunge precipitously in the international arena' (ibid., p. 58); and the 'domestic legitimacy costs', understood as 'the proportion of the population that can be expected to acquiesce to having their contribution to public choice taken from them or distorted (as perceived by the leader in question)' (ibid., p. 59).

Similarly, both Simpser (2013) and Collier & Vicente (2012) include cost functions in their models of electoral manipulation. My understanding of the direct costs of electoral manipulation is closest to that of Collier & Vicente (2012). Like them, I allow the price to vary, depending on the type and the context, and recognise that some MPs have better access to resources than others. Miscounting is more expensive than other types of electoral manipulation, making it more attractive to MPs with deep clientelist networks.

DATA

To test the model, I created a dataset containing information about every regular constituency-level parliamentary election in Ghana in the 2008 and 2012 electoral cycles. Data on ballot rejections were collected from the regional offices of the Electoral Commission.[7] In addition, I collected data on other aspects of the parliamentary elections, including the name and party affiliation of the incumbent MP; the number of years the party of the incumbent MP had held the constituency seat; whether the incumbent MP was a minister or deputy minister; the number of candidates contesting the seat; the size of the constituency; the number of voters registered; the election results; the name and party affiliation of the MP-elect; whether the constituency was urban or rural; education and literacy rates; employment rates and the rates of people employed by the

7 Kumasi, Sunyani, Cape Coast, Koforidua, Accra, Tamale, Bolgatanga, Wa, Ho, and Sekondi-Takoradi.

government; mobile ownership rates; the rates of people belonging to different ethnic groups, etc. Data were extracted from official election results, the 2010 Population and Housing Census, and media coverage of the elections.

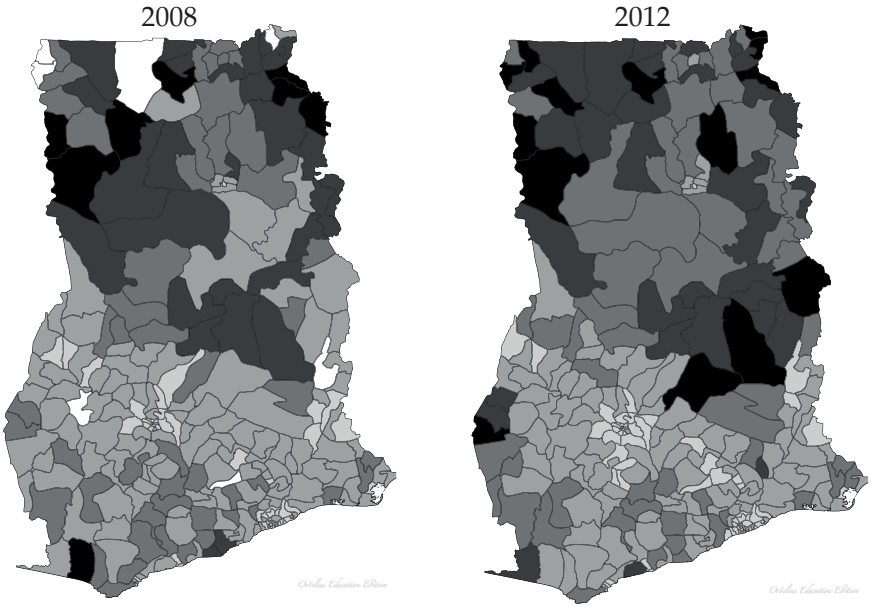
To create the dataset, I had to make several adjustments. First, district-level data (from the 2010 Population and Housing Census) were applied to all constituencies within a district, meaning that the literacy and employment rates for district A were applied to all constituencies in district A. Second, data from the 2010 Population and Housing Census were applied to both election years in my dataset, meaning that the literacy and employment rates for 2010 were applied to both 2008 and 2012. Finally, data from 'parent' constituencies that were split before the 2012 elections were applied to all 'offspring' constituencies. I recognise that the adjustments violate the assumed independence of observations. Therefore, I exclude the affected cases when I test the robustness of my results. I capture the temporal dimension of my data by including election year dummy variables in my models. The appendix contains an overview of the main variables and summary measures.

ANALYSIS

In the following analysis I test my model against the dataset described above. As a first cut, I visually inspect the patterns. Figure 1 maps the number of ballots rejected, relative to the number of ballots cast in the 2008 and 2012 parliamentary elections. The darker the constituency, the more ballots were rejected. White indicates that data were unavailable.

There are two noteworthy findings. First, more ballots were rejected in the three northern regions (Northern, Upper East, and Upper West), where literacy, employment and mobile ownership rates were among the lowest in the country.[8] This underlines the importance of controlling for voter error in my models. Second, visibly fewer ballots were rejected in the Ashanti and the Volta regions, the electoral strongholds of the NPP and the NDC respectively. This suggests that electoral uncertainty has a positive effect on the number of ballots rejected.

8 In the three northern regions, the average education rate is 49%, while the average mobile ownership rate is 14%. In the remaining seven regions (Ashanti, Brong Ahafo, Central, Eastern, Greater Accra, Volta, and Western), the average education rate is 81%, while the average mobile ownership rate is 34%.



Note: From light grey to black=1%; 12%; 23%; 34%; 4%. White=missing data.

Figure 1: Map of ballots rejected in parliamentary elections

Variables and Model: Regression Analysis

As the dependent variable, I use *Parliamentary ballots rejected*, which counts the number of ballots rejected. It ranges from zero to 5 590, the highest number of ballots rejected in any election in my dataset (the 2008 election in Ellembele). Data were collected from the Electoral Commission. No further adjustments were necessary.

My model suggests that MPs rig elections in the grey zone when they fear electoral defeat and have deep clientelist networks, which means they can distribute goods to co-opt election officers and deploy and maintain polling agents to monitor and enforce compliance during the counting. To capture the first factor, the MPs' fear of electoral defeat, I use *Parliamentary win-margin*$_{t-1}$, which measures the win-margin in the last parliamentary election. Past win-margins have been used as a measure of electoral confidence in other studies, and, in the context of information scarce environments, where pre-election polls are either unavailable or unreliable, have been found to perform better than other measures (Eibl & Lynge 2017). MPs in Ghana will most certainly use all information available to them when they gauge their electoral prospects. I simply argue that the informational weight they give to past win-margins is higher than the weight

they give to other sources, which means they follow a pattern of Bayesian learning under conditions of limited information.

To capture the second factor, their clientelist networks, I use *MP party tenure duration*, which counts the number of years the party of the incumbent MP has held the constituency seat. My assumption is that the longer a party has held a constituency seat, the more established are the party's clientelist networks. This assumption is supported by a large body of research, arguing that clientelism increases when there is limited party competition (e.g., Della Porta 2004; Heidenheimer & Johnston 2002),[9] including a few studies that have specifically examined the effect of party tenure duration. Zeng (2019, p. 76), for example, in a comparative study of 30 African countries drawing on Afrobarometer data, finds that party tenure duration is positively correlated with the distribution of personalised and club goods, leading him to the conclusion that 'lengthy party duration makes the promise of distributing selective goods more credible and facilitates the politicization of bureaucracy and other state resources essential for clientelist exchanges'. Paget (2014) comes to similar conclusions in his case study of the Multiparty Movement for Democracy (MMD) in Zambia. In the year after winning the first multiparty elections in 1991, the MMD's 'infrastructure was anaemic, unable to effectively access resources or reach out to votes to mobilise support' (ibid., p. 154). However, after the 2001 elections, when the party's vote share dropped to 29%, the MMD responded by 'shifting its electoral base away from urban areas that proved elusive and malcontented, towards rural areas where the party could channel state resources into patron-client relationships' (ibid., p. 163).

While these studies have focused on party competition and clientelism at national level, the argument may be extended to include constituency level, certainly in the context of Ghana. In Ghana, local politics is dominated by the MP and the district chief executive (DCE). The MPs derive their mandate from the local party branches and voters more generally. The district chief executives are appointed by the president, but they require approval by the District Assemblies where the MPs are *ex officio* members, which means they also tend to 'emerge from within the party's local branch' (Driscoll 2018, p. 408). The MPs have access to funds through the District Assemblies Common Fund (DACF),[10] but the DCEs control the district administration, and hence most of the local level spending and patronage jobs. This means the MPs and the DCEs must cooperate to optimise their party machines. However, even when they do not, meaning when they represent different parties, opposition MPs are still able to maintain considerable

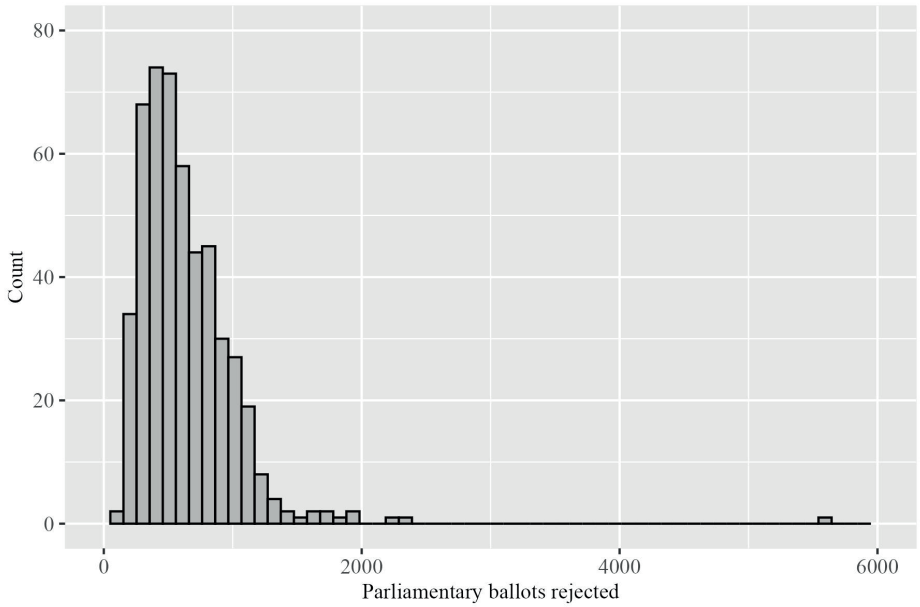
9 I recognise that some studies have reached the opposite conclusion (e.g., Driscoll 2018).

10 In 2020, the MPs share of the DACF amounted to GHC 420 000 (USD 75 000) for each MP (Suhuyini et al. 2023, p. 2)

clientelist networks. With three alternations of power since 2000, they can make credible promises about future goods especially in party strongholds, where the relationships between parties and voters have been forged over multiple electoral cycles. With resources MPs can build clientelist networks. However, it takes time and most likely multiple parliamentary candidates to perfect them and develop the norms that drive some election officers to silently rig the elections in favour of the incumbent MP.

The interaction between *Parliamentary win-margin*$_{t-1}$ and *MP party tenure duration* captures the conditional effect. All data were extracted from official election results.

A party's clientelist networks may suffer shocks when the incumbent MP decides to run as an independent candidate. To control for this, I include *MP running independent*, which indicates whether the incumbent MP ran as an independent candidate. The number of ballots rejected captures both electoral manipulation and unintentional violations of the electoral laws, caused by voter error or errors by the election officers (Challú et al. 2020). I use three different variables to control for this: *Population literate*, which measures the fraction of the constituency population that was literate; *Population employed*, which measures the fraction of the constituency population that was employed; and *Population with a mobile*, which measures the fraction of the constituency population that owned a mobile phone. Data were extracted from the 2010 Population and Housing Census. Census data are available only at district-level. Some districts contain more than one constituency. In those cases, I had to apply district-level census data to all constituencies within a given district. Also, I had to apply data from 2010 to parliamentary elections in both 2008 and 2012. This violates the assumed independence of observations. I therefore use an alternative control variable, when I test the robustness of my results: *Constituency metropolitan*, which indicates whether the constituency was in one of the six metropolitan districts. *Constituency metropolitan* is closely correlated with *Population literate*, *Population employed*, and *Population with mobile*, and captures many of the same underlying dynamics. The marginal direct benefit of electoral manipulation depends on the number of voters registered. In constituencies with more voters registered, the parliamentary candidates must steal more votes to change the electoral outcome, making expensive retail manipulation less attractive. To control for this, I include *Voters registered (log)*, which provides the natural logarithm of the number of voters registered in the constituency. Finally, there may be temporal shocks in my data caused by the 2008 presidential election, which was very close. To control for this, I include an election-year dummy variable, with 2008 as the reference category.



Note: Data extracted from official election results

Figure 2: Histogram of parliamentary ballots rejected

Figure 2 provides a histogram of the dependent variable. It shows that it is bounded below zero and positively skewed, meaning that in most constituencies, relatively few ballots are rejected. This suggests that a linear least square model would be inappropriate. Instead, I use a negative binomial model, which is the appropriate model for over-dispersed, event count data (event count data where the variance is greater than the mean). Failure to account for over-dispersion could bias the standard errors downwards (Long 1997). Note that the negative binomial model assumes the mean differs from the variance. It captures the difference by estimating a dispersion parameter that is held constant in the Poisson model, which is the model most often used for event count data. The Poisson model is therefore nested in the negative binomial model. The fully specified model looks as follows:

$$E(Y)=\beta_0+\beta_1\, MP\ party\ tenure+\beta_2\, Parliamentary\ win\ margin_{(t-1)} +\beta_3\, MP\ party\ tenure \times Parliamentary\ win\ margin_{(t-1)}+\beta_4\, X+\varepsilon +offset(log\ (Parliamentary\ ballots\ cast))$$

where β_0 is the constant; $\beta_{4\ X}$is a vector of control variables; and ε is the error term. Following Brambor et al. (2006), I include the constitutive terms of the interaction variable, although I do not necessarily expect any independent effect

of *Parliamentary win-margin*$_{t-1}$. Also, note that the model offsets the number of registrations challenged by the number of voters registered, which means it estimates the dependent variable as fraction.

Results

The results are reported in Table 2. Model 1 maximises the goodness of fit (minimises Akaike's Information Criterion). Model 2 includes all control variables. Model 3 replaces *Population literate*, *Population employed*, and *Population with mobile* with *Constituency metropolitan*. Model 4 excludes the interaction term. The results are consistent with my model. *MP party tenure duration* is positive and statistically significant in all models, while the interaction between *MP party tenure duration* and *Parliamentary vote-margin*$_{t-1}$ is negative and statistically significant. In other words, more ballots were rejected when the last election was won by a smaller margin and the party of the incumbent MP had held the constituency seat for more years. As expected, *Population literate*, *Population employed*, and *Population with mobile* are negative and statistically significant in all models, where included, as is *Constituency metropolitan*. This confirms the effect of voter error. Finally, *Voters registered (log)* is negative and statistically significant in all models, suggesting that miscounting is less attractive in constituencies with fewer voters registered, while *MP running independent* is positive and statistically significant, implying that it is more attractive when the incumbent MP ran as an independent candidate, whether because the incumbent MP brings the clientelist networks of their former party or because it drives the new parliamentary candidate to rig the elections.

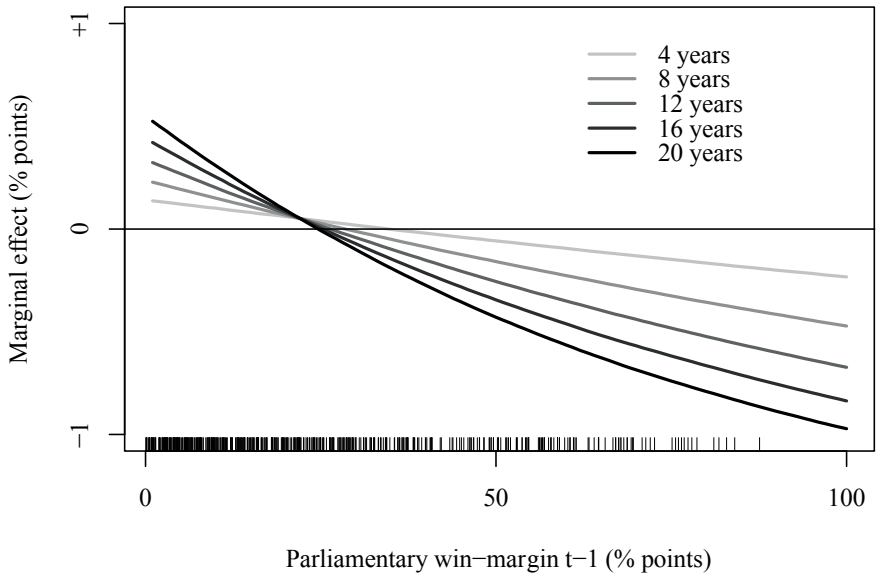
Table 2: Regression results

Models	**(1)**	**(2)**	**(3)**	**(4)**
	Parliamentary ballots rejected			
MP party tenure duration	**0.013****	**0.013****	**0.014****	0.002
	(0.005)	(0.005)	(0.007)	(0.004)
Parliamentary win-margin$_{t-1}$	0.421	0.391	0.051	**-0.392*****
	(0.302)	(0.318)	(0.381)	(0.103)
MP running independent	**0.248***	**0.249***	**0.346****	0.218
	(0.142)	(0.142)	(0.171)	(0.143)

Population literate	-1.103***	-1.102***		**- 1.089***
	(0.318)	(0.318)		(0.321)
Population employed	**-1.347***	**-1.347***		**-1.429***
	(0.503)	(0.503)		(0.506)
Population with mobile	**-2.567***	**-2.563***		**-2.555***
	(0.262)	(0.262)		(0.264)
Constituency metropolitan			**-0.691***	
			(0.074)	
Voters registered (log)	**-0.109****	**-0.110****	**-0.478***	**-0.115****
	(0.053)	**(0.053)**	**(0.054)**	**(0.053)**
2012		-0.012	-0.061	
		(0.040)	(0.049)	
MP party tenure duration x Parliamentary win-margin$_{t-1}$	**-0.061***	**-0.059***	**-0.057****	
	(0.021)	(0.022)	(0.027)	
Constant	-0.763	-0.742	**1.203****	-0.508
	(0.664)	(0.667)	**(0.590)**	(0.664)
N	505	505	505	505
AIC	6,959.991	6,961.903	7,156.597	6967

Notes: Negative binomial models. Standard errors in parenthesis.
*p<0.10, **p<0.05, ***p<0.01.

Figure 3 plots the marginal effect of *Parliamentary win-margin*$_{t-1}$ for different values of *MP party tenure duration*. The coefficients are extracted from model 1 in Table 5.2 (see appendix), which produces the best goodness of fit. The figure shows that for values of *MP party tenure duration* between four and eight, the marginal effect of *Parliamentary win-margin*$_{t-1}$ is below 0.5% point, across the range of the variable. For values between 16 and 20, the marginal effect is around 1.5% points in a 'typical' constituency, with 52 000 registered voters and a voter turnout around 75%, that is 585 votes. By comparison, there are 29 cases (6%) in my dataset, where the win-margin was below 585 votes.



Notes: Coefficients extracted from Model 1 in Table 2

Figure 3: Marginal effect of interaction

Robustness Tests

The appendix contains several robustness tests which further explore the data. First, I replace *MP party tenure duration* with the interaction between *MP tenure duration* and *MP running*, which counts the number of years the incumbent MP has held a constituency seat and indicates whether they ran for re-election; and with *Minister running*, which indicates whether a minister or deputy minister contested the election (Table 5 in the appendix). Second, I replace *Parliamentary win-margin*$_{t\text{-}1}$ with *Presidential vote-margin*$_{t\text{-}1}$, which measures the vote margin between the NDC and the NPP presidential candidates in the last presidential election in the constituency (Table 5 in the appendix). Given the presence of independent candidates, it is possible that the MPs use the win-margin in the last presidential election as a more accurate reflections of the popularity of the two dominant parties. Third, I introduce the following, additional control variables: *Candidates*, which counts the number of parliamentary candidates contesting the election; *Constituency size*, which measures the size of the constituency in squared kilometres; *Ethnic voters*, which measures the fraction of the constituency population that is Akan and Ewe; *Ethnic fractionalisation*, which provides the (one minus the) Herfindal index score for the nine ethnic groups used in the 2010 Population and Housing Census; and *Ethnic polarisation*, which the Montalvo and Reynal-Querol (2005a; 2005b) index score also provides for the nine ethnic

groups used in the census (Table 6 in the appendix). Finally, I exclude elections where the adjustments made to the data violate the assumed independence of observations (Table 7 in the appendix).

The results are almost identical to the results in Table 2. *MP party tenure duration* is positive and statistically significant in all models, where included, while the interaction between *MP party tenure duration* and *Parliamentary win-margin*$_{t-1}$ is negative and statistically significant. Similarly, *Population literate*, *Population employed*, and *Population with mobile* are negative and statistically significant, as is *Voters registered (log)*. Note that the interaction between *MP tenure duration* and *MP running* and *Minister running* are not statistically significant. In other words, it appears to be the clientelist networks of the parties, rather than those of the incumbents, that enable them to co-opt election officers.

Alternative Interpretations

In this section, I briefly consider three alternative interpretations. The first is that the results are driven not by election officers who reject ballots correctly cast in favour of the challenger, but by election officers who count wrongly cast ballots in favour of the incumbent MP. This could explain why fewer ballots are rejected in constituencies with lower levels of electoral uncertainty. Votes represent capital and the incumbent MP would prefer to win by large margin. While I cannot rule out this possibility, I do not believe it is the primary explanation. If so, I would expect the distribution of *Parliamentary ballots rejected* to be negatively skewed; i.e. the mean should be lower than the median. As Figure 2 demonstrated, this is not the case. On the contrary, the distribution is positively skewed, meaning the outliers are located above the mean and the median.

The second interpretation is that the election officers contribute to the rigging not by selectively rejecting ballots during the counting but by looking the other way when agents of the incumbent MP destroy ballots before they are counted. While this certainly contributes to the results, I do not believe it is the primary driver. The agents are not allowed to touch the ballots before they are counted, and when they do, it is usually challenged by other agents or election observers. By contrast, the election officers are required to reject wrongly cast ballots and during any given counting there are many genuine grey zone cases.

The final alternative interpretation is that the results are entirely driven by voter error. All measures of electoral manipulation are liable to bias. The one I use in this paper is no exception. Ballot rejections capture both electoral manipulation (possibly even multiple types of electoral manipulation) and unintentional violations of the electoral laws. I have tried to address this bias by using multiple and different control variables. However, illiteracy, inexperience, and misinformation, certainly still contribute to the results.

CONCLUSION

This paper has examined miscounting, one of the subtler ways in which political candidates can rig elections. It has shown that the effect of electoral uncertainty on miscounting is conditional on resources. All political candidates who fear electoral defeat have an incentive to rig. However, only political candidates with established clientelist networks can choose this specific type of electoral manipulation. The model proposed in this paper is restricted to parliamentary elecions in FPTP systems, where the interests of the parliamentary candidates tend to take precendence over those of the the presidential candidates, and where electoral manipulation is an option. That being said, the basic arguments about risks, direct costs, and resources, should apply also to other elections, including parliamentary elections in proportional representation systems and in presidential elections. Future research should explore this further.

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APPENDIX

Table 3: Ballots rejected in recent parliamentary elections in Africa

Country	Year	Constitutional system	Electoral system for parliament	Ballots rejected (% of ballots cast)
Angola	2017	Presidential	List PR	3.9
Benin	2003	Presidential	List PR	13.8
Botswana	2014	Parliamentary	FPTP	1.2
Burkina Faso	2020	Semi-presidential	List PR	4.8
Burundi	2015	Presidential	List PR	4.2
Cameroon	2013	Presidential	Parallel	4.4
Cape Verde	2021	Semi-presidential	List PR	2.4
Central African Republic	**2016**	**Presidential**	**TRS**	**4.7**
Chad	1997	Presidential	PBV	3.3
Comoros	2020	Presidential	TRS	4.6
Congo-Brazzaville	2017	Presidential	TRS	2.2
Congo-Kinshasa	2011	Semi-presidential	NA	4.1
Cote d'Ivoire	**2021**	**Presidential**	**FPTP**	**4.2**
Djibouti	2013	Semi-presidential	PBV	1.8
Equatorial Guinea	2004	Presidential	List PR	0.4
Eritrea	NA	One-party	NA	NA
Eswatini	NA	Monarchy	FPTP	NA
Ethiopia	NA	Parliamentary	FPTP	NA
Gabon	**NA**	**Presidential**	**TRS**	**NA**
Gambia	**2007**	**Presidential**	**FPTP**	**0.0**
Ghana	**2020**	**Presidential**	**FPTP**	**1.6**
Guinea	**2020**	**Presidential**	**Parallel**	**4.2**
Guinea-Bissau	2019	Semi-presidential	List PR	6.5
Kenya	**2017**	**Presidential**	**FPTP**	**2.0**
Lesotho	2017	Parliamentary	MMP	1.0
Liberia	**2017**	**Presidential**	**FPTP**	**5.1**
Madagascar	**2014**	**Semi-presidential**	**FPTP**	**4.7**

Malawi	**2014**	**Presidential**	**FPTP**	**1.4**
Mali	**2020**	**Semi-presidential**	**TRS**	**4.5**
Mauritania	**2018**	**Semi-presidential**	**TRS**	**31.6**
Mauritius	2010	Parliamentary	PBV	0.9
Mozambique	2019	Presidential	List PR	10.4
Namibia	2009	Presidential	List PR	1.3
Niger	2020	Semi-presidential	List PR	7.6
Nigeria	**2003**	**Presidential**	**FPTP**	**3.2**
Rwanda	2018	Presidential	List PR	0.2
Sao Tome and Principe	2018	Semi-presidential	List PR	4.1
Senegal	2017	Semi-presidential	Parallel	0.8
Seychelles	2020	Presidential	Parallel	2.7
Sierra Leone	**2018**	**Presidential**	**FPTP**	**7.4**
Somalia	1984	Parliamentary	NA	0.1
South Africa	2019	Parliamentary*	List PR	1.3
Sudan	2015	Presidential	Parallel	8.3
Tanzania	**2005**	**Presidential**	**FPTP**	**5.3**
Togo	**2018**	**Presidential**	**TRS**	**6.3**
Uganda	**2016**	**Presidential**	**FPTP**	**4.9**
Zambia	**2021**	**Presidential**	**FPTP**	**2.3**
Zimbabwe	**2013**	**Presidential**	**FPTP**	**1.9**
Mean				6.4

Notes: The table includes the last parliamentary elections in each country for which data on ballot rejections were available. Elections in bold are elections in countries with political and electoral systems similar to Ghana's. FPTP=First-past-the-post; List PR=List proportional representation; Parallel=Parallel system; PBV=Party block vote; TRS=Two-round system. Data from International IDEA (2016).Data from International IDEA (2016).

* South Africa has a president who is elected by parliament.

Table 4: Descriptive statistics

Variable name	Variable description	Mean	SD	Min	Max	N
Election year 2012	Variable indicating whether the election year was 2012	0.545	0.499	0	1	505
Ethnic fractionalisation*	Variable measuring the level of ethnic fractionalisation	0.423	0.217	0.024	0.852	503
Ethnic polarisation*	Variable measuring the level of ethnic polarisation	0.571	0.222	0.048	0.901	503
Population educated	Variable indicating the fraction of the constituency population with primary education	0.740	0.161	0.290	0.948	505
Population employed	Variable indicating the fraction of the constituency population that is economically active	0.522	0.060	0.333	0.711	505
Population with mobile	Variable indicating the fraction of the constituency population that owns a mobile phone	0.293	0.147	0.055	0.718	503
Constituency metropolitan	Variable indicating whether the election was in a sub-metro	0.121	0.326	0	1	505
Constituency size km2	Variable indicating the size of the constituency	1,006	1,220	0,016	10,831	505
Voters registered	Variable counting the number of voters registered for the election	52,500	25,381	12,082	185,627	505
Parliamentary win-margin$_{t-1}$	Variable indicating the difference, in votes, between the winner and the runner-up in the last parliamentary election	9,842	9,951	13	55,506	505

Presidential vote margin$_{t-1}$	Variable indicating the difference, in votes, between the candidate with the most votes and the candidate with the second most votes in the last presidential election	11,420	10,621	12	60,360	505
MP party	Variable indicating the party of the incumbent MP (1=NDC; 2=NPP; 3=PNC; 4=CPP; 5=Independent)	1.600	0.653	1	5	505
MP party tenure duration	Variable counting the number of years the party of the incumbent MP had held the constituency seat	11.747	5.279	4	20	505
MP running	Variable indicating whether the incumbent MP ran for re-election	0.681	0.466	0	1	505
MP running independent	Variable indicating whether the incumbent MP ran for re-election as an independent candidate	0.018	0.132	0	1	505
Minister running	Variable indicating whether a minister or deputy minister contested the seat	0.150	0.358	0	1	505
Candidates	Variable counting the number of candidates running	4.707	1.291	2	9	505
Parliamentary ballots cast	Variable counting the total number of ballots cast in parliamentary election	39,398	18,467	9,409	118,814	505
Parliamentary ballots rejected	Variable counting the number of ballots rejected in parliamentary election	628	395	0	5,590	505
Parliamentary votes NDC	Variable counting the number of votes for the NDC parliamentary candidate	17,574	10,537	0	77,837	505

Parliamentary votes NPP	Variable counting the number of votes for the NPP parliamentary candidate	18,379	12,535	0	65,978	505
Parliamentary votes other	Variable counting the number of votes for other parliamentary candidates	2.817	3.827	0	34.950	505
Parliamentary win-margin	Variable indicating the difference, in votes, between the winner and the runner-up	9.379	10.289	3	73.715	505

* Montalvo and Reynal-Querol (2005a; 2005b).

Table 5: Alternative independent variables

	(1)	(2)	(3)
	Parliamentary ballots rejected		
MP tenure duration	-0.007		
	(0.014)		
MP running	-0.198		
	(0.139)		
Minister running		-0.064	
		(0.083)	
Parliamentary win-margin$_{t-1}$	**-1.056*****	**-0.417*****	
	(0.377)	(0.103)	
MP party tenure duration			**0.013****
			(0.006)
Presidential vote-margin$_{t-1}$			0.242
			(0.243)
MP running independent			**0.259***
			(0.142)
Population literate	**-0.890*****	**-1.083*****	**-1.079*****
	(0.319)	**(0.321)**	**(0.322)**
Population employed	**-1.309*****	**-1.391*****	**-1.346*****
	(0.500)	**(0.506)**	**(0.505)**
Population with mobile	**-2.646*****	**-2.552*****	**-2.592*****
	(0.262)	**(0.264)**	**(0.265)**
Voters registered (log)	**-0.125****	**-0.119****	**-0.127****
	(0.052)	**(0.053)**	**(0.053)**
MP tenure duration × MP running	0.023		
	(0.017)		
MP tenure duration × Parliamentary win-margin$_{t-1}$	0.046		
	(0.042)		

MP running × Parliamentary win-margin$_{t-1}$	**0.742***		
	(0.438)		
MP tenure duration × MP running × Parliamentary win-margin$_{t-1}$	-0.039		
	(0.052)		
Minister running × Parliamentary win-margin$_{t-1}$		0.265	
		(0.263)	
MP party tenure duration × Presidential vote-margin$_{t-1}$			**-0.043****
			(0.017)
Constant	-0.517	-0.494	-0.569
	(0.663)	(0.664)	(0.669)
N	505	505	504
AIC	6,961	6,968	6,952

Notes: Negative binomial models. Standard errors in parenthesis.

*p<0.10, **p<0.05, ***p<0.01.

Table 6: Alternative control variables

	(1)	(2)	(3)	(4)
	Parliamentary ballots rejected			
MP party tenure duration	**0.013****	**0.013****	**0.014****	**0.014****
	(0.005)	**(0.005)**	**(0.005)**	**(0.005)**
Parliamentary win-margin$_{t-1}$	0.448	0.421	0.406	0.418
	(0.302)	(0.302)	(0.303)	(0.303)
MP running independent	0.195	**0.248***	0.259*	0.247*
	(0.144)	(0.142)	(0.142)	(0.142)
Population literate	**-0.958*****	**-1.104*****	**-1.479*****	**-1.102*****
	(0.328)	**(0.325)**	**(0.503)**	**(0.319)**
Population employed	**-1.314*****	**-1.346*****	**-1.306*****	**-1.299****
	(0.501)	**(0.504)**	**(0.503)**	**(0.517)**
Population with mobile	**-2.656*****	**-2.568*****	**-2.409*****	**-2.547*****
	(0.265)	**(0.266)**	**(0.303)**	**(0.265)**
Voters registered (log)	**-0.130****	**-0.109****	**-0.113****	**-0.109****
	(0.054)	**(0.053)**	**(0.053)**	**(0.053)**
Candidates	**0.028***			
	(0.016)			
Constituency size km2		-0.001		
		(0.002)		
Ethnic supporters			0.102	
			(0.110)	
Ethnic fractionalisation				-0.035
				(0.104)
MP party tenure duration × Parliamentary win-margin$_{t-1}$	**-0.062*****	**-0.061*****	**-0.061*****	**-0.062*****
	(0.021)	**(0.021)**	**(0.021)**	**(0.021)**
Constant	-0.777	-0.763	-0.549	-0.775
	(0.663)	(0.664)	(0.700)	(0.666)
N	505	505	505	505
AIC	6,958	6,961	6,961	6,961

Notes: Negative binomial models. Standard errors in parenthesis.
*p<0.10, **p<0.05, ***p<0.01.

Table 7: Subset

	(1)	(2)	(3)
	Parliamentary ballots rejected		
MP party tenure duration	**0.014****	**0.014****	**0.015****
	(0.006)	**(0.006)**	**(0.008)**
Parliamentary win-margin$_{t-1}$	0.529	0.415	0.167
	(0.332)	(0.345)	(0.423)
MP running independent	**0.280****	**0.285****	**0.373****
	(0.138)	(0.138)	(0.172)
Population literate	**-1.112*****	**-1.100*****	
	(0.342)	**(0.341)**	
Population employed	**-1.873*****	**-1.896*****	
	(0.546)	**(0.547)**	
Population with mobile	**-2.776*****	**-2.769*****	
	(0.273)	**(0.273)**	
Constituency metropolitan			**-0.714*****
			(0.077)
Voters registered (log)	-0.023	-0.023	**-0.437*****
	(0.058)	(0.058)	**(0.062)**
2012		-0.048	-0.074
		(0.042)	(0.053)
MP party tenure duration × Parliamentary win-margin$_{t-1}$	**-0.078*****	**-0.071*****	**-0.071****
	(0.024)	**(0.025)**	**(0.031)**
Constant	**-1.377***	**-1.350***	0.762
	(0.731)	**(0.730)**	(0.678)
N	420	420	420
AIC	5,759.118	5,759.867	5,946.994

Notes: Negative binomial models. Standard errors in parenthesis.
*p<0.10, **p<0.05, ***p<0.01.