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WORKING PAPER

January 2018

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Do Fair Elections Increase the Responsiveness of Politicians?*

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January 10, 2018

Abstract

I leverage novel experimental designs and 2, 160 months of Members of Parliaments' (MPs') Constituency Development Fund spending to test whether fair elections promote democratic responsiveness. I find that MPs elected in constituencies that were randomly assigned to high levels of election monitoring during Ghana's 2012 polls spend 19 percentage points more of their CDFs, on average, compared to those who were elected from districts that had fewer monitors. These legislators were equally absent from parliamentary meetings as their low-monitoring counterparts elected during their terms in office, which suggests that fair elections do not motivate politicians to substitute constituency service for parliamentary work. The results imply that higher-integrity elections incentivize incumbents to exert more effort to satisfy citizens' demand for constituency service. Regarding mechanisms, I provide tentative causal evidence that politicians substitute effort for fraud when they expect that similar intense future election monitoring will limit their ability to rig their reelection and enable voters to sanction poor performance. The paper demonstrates the downstream effect of election monitoring on elite behavior and provides causal evidence of the impact of election quality on democratic accountability.

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Election fraud is widely believed to undermine political responsiveness. While the theoretical link between election fraud and democratic responsiveness is not explicit in the literature, scholars and policymakers assume, implicitly, that vote rigging weakens the two channels through which elections are theorized to exert its influence on politician behavior: *selection* and *sanction*. When elections are rigged, it robs citizens' ability to select competent or public-spirited politicians who share their interests to office because the candidate who most voters prefer might simply not win (Miller and Stokes, 1963; Kingdon, 1989; Fearon, 1999; Besley, 2005).[1] Likewise, voters would not be able to retrospectively sanction (vote out) poor performing or corrupt incumbents if the election results are manipulated (Ferejohn, 1986). Accordingly, vote rigging breaks down the "electoral connection" between citizens and politicians, reducing the incentives for incumbents to work harder to win the hearts of voters.

However, in spite of the widespread belief that credible elections should induce political responsiveness, we do not have solid evidence that improving the quality of elections incentives politicians to be more responsive to citizens' needs, and, if so, through what mechanism.[2] Moreover, despite the little or no evidence, multilateral organizations invest approximately US$5 billion annually to support programs including domestic election monitoring to bolster electoral integrity around the globe (Norris, 2014).[3] Indeed, these investments are based on democracy promoters' firm belief that, beyond guaranteeing the fundamental democratic principle of political equality, honest elections yield tangible benefits including the delivery of public goods and services, especially in developing countries (Annan et al., 2012). In this article, I contribute one of the first systematic analyses of the causal relationship between fair elections and political responsiveness in Ghana, a model "third-wave" democracy in Africa.

To be sure, the effects of interventions such as election monitoring on the integrity of election have been the subject of empirical research in the past two decades. Scholars have shown that election observation, which involves the deployment of trained personnel to monitor voting at polling stations, reduces fraud and violence (Hyde, 2010; Ichino and Schündeln, 2012; Enikolopov et al., 2013; Asunka et al., 2017).[4] However,

[1] I use preference aggregation to refer to the counting and collating of ballots cast and not in the sense of citizens' social choice process which is shaped in important ways by the electoral system (Arrow, 1963). Indeed, electoral systems, especially Single Member Plurality (SMP), may rule out the possibility of electing the candidate "most" voters prefer. However, my argument pertains to fairly aggregating the votes cast for candidates holding fixed the electoral system. Because this study is sited in a single country, the electoral system is held constant.

[2] Norris (2014), for example, asserts that the "instrumental consequences of elections need to be demonstrated with systematic evidence, however, rather than simply assumed carte blanche, or patched together based on limited support derived from selected case studies that fit the pattern."(pg. 7) By instrumental consequences, Norris (2014) was referring to: citizens' trust in the electoral process and confidence in democracy, voter turnout, and civic engagement, and political representation (responsiveness).

[3] A handful of cross-national studies examine the relationship between the integrity of elections and government economic performance. However, these studies have produced mixed results on government performance. Specifically, while Collier and Hoeffler (2015) find that fraudulent elections increase the incentives for national governments to deliver good economic performance, van Ham (2009) finds a negative and statistically insignificant association between the integrity of elections and subsequent economic growth. Similarly, Bratton (2013) finds no significant relationship between citizens' perceptions of election integrity and their assessments of politicians' responsiveness in Sub-Saharan Africa.

[4] Likewise, in the case of election administration, scholars have found in Sub-Saharan Africa and Latin America that autonomous bodies are more likely to conduct honest elections compared to those controlled by the government (Pastor, 1999; Mozaffar, 2002; Hartlyn, McCoy and Mustillo, 2008; Kerr, 2013).

to date, we have no evidence that these interventions, through its impacts on election integrity, ultimately improve the responsiveness of politicians to the needs of citizens.

Indeed, there are at least two theoretical reasons why improved election quality may have no effect on political responsiveness or perhaps increase corruption. First, many efforts to reduce electoral fraud, including the one in this study, are concentrated on election-day balloting and vote-counting processes. Thus, politicians may shift their illegal tactics to the period before election day instead of responding to the needs of citizens (see Ichino and Schündeln, 2012; Daxecker, 2014). Second, improving election quality may generate negative externalities through increased rent seeking. Incumbents may just discount their reelection in the future and rather increase their rent seeking efforts, exacerbating corruption (Bates, 2008).[5] In spite of these theoretical possibilities, and despite the vast sums spent on programs to promote election integrity, we have limited evidence to support the idea that improved election quality produces concrete benefits for citizens.[6]

The reason we do not have a firm causal evidence of election integrity on the efforts that officeholders take in promoting the interests of citizens is that such investigation poses significant inferential challenges. Politicians who are responsive to their constituents, less corrupt, and behave in ways that we associate with a well-functioning democracy may also desist from election-day fraud. On the other hand, political actors who are unaccountable and corrupt are also the kind that tend to rig the polls and intimidate voters to win elections. Accordingly, to establish the causal relationship between fair elections and the responsiveness of officeholders, scholars need to find a way to manipulate the quality of elections in which politicians are elected.

Equally challenging is the ability to disentangle the possible channels through which credible elections may influence incumbents' behavior. For example, if we observe that an incumbent elected in an honest election performing better than her peer selected in a fraudulent election, is this because: a) voters succeeded in selecting competent candidates who share their preferences, or b) incumbents' fear of electoral sanction in the next elections, or c) both. Because of these challenges, scholars have struggled to discern the direction of the causal arrow (and mechanisms) that runs between fraud and responsiveness.

To overcome these challenges, I use two experimental designs informed by recent work on election observation. First, I leverage a field experiment that randomized the intensity of election observation across electoral districts in Ghana's 2012 elections. *Intensity of observation* is the proportion of sample polling stations in an electoral district that is monitored by observers. In Asunka et al. (2017), my collaborators and I deployed $1,300$ election observers to polling stations nested in 60 electoral constituencies that we randomly assigned to receive one of three levels of intensity of observation (IO): *low*, *medium*, or *high* in which 30, 50, and 80 percent of sampled polling stations within constituencies were monitored, respectively.[7] Given

[5] The logic here is similar to that of the scholarship on term limits. Scholars have found that in many cases when incumbents are term-limited, they have fewer incentives to provide services to their constituents (e.g., Ferraz and Finan, 2011; Christensen and Ejdemyr, 2016).

[6] Some scholars also contest the assumption that in general election induce political responsiveness. A recent provocative work by Achen and Bartels (2016) follows in this ongoing debate on the connection between elections and democratic responsiveness, and why that link often fails.

[7] For each constituency, we first sampled 30 percent of polling stations to form our study sample. Thus, the intensity of observation refers to the proportion of the subset (30 percent) of polling stations within constituencies that were monitored. On

that observers reduce fraud, and that greater intensities of observers reduce fraud more, I use the intensity of election observers within a constituency as an exogenous instrument for election integrity. I refer to this as *Actual Intensity of Observation (AIO)* from which citizens chose their representatives. To measure the effects of election integrity on responsiveness, I compare the performance of legislators elected in low AIO constituencies to those in higher (medium and high) AIO constituencies during their four-year terms in office.[8] Because the intensity of observation was randomized, this allows me to make causal claims about the impact of election integrity on responsiveness.

Second, and to systematically test the causal mechanisms that may explain the connection between fair elections and incumbent performance, I randomize information (a letter) to half (30) of the MPs in my initial sample a year prior to their reelection race. The letter stated that prior research has documented a significant effect of election monitoring in reducing fraud and violence and that their constituency has been selected to *potentially* receive especially high numbers of observers in their reelection race in Ghana's December 2016 general elections. Those in the control did not receive such a letter. Because election observers reduce fraud and violence, I assume that such news would influence incumbents' beliefs about their ability to rig their re-election and thus the prospects of electoral sanction. I refer to this as an incumbent's *Expected Intensity of Observation (EIO)* in the next elections.

By sending letters to MPs who received intensive and less-intensive observation during the 2012 elections, during their last year in office, my experiments yields a 2×2 design with four type of incumbents: 1) elected in high AIO and received letter to expect high IO; 2) elected in high AIO but did not receive a letter; 3) elected in low AIO and received a letter to expect high IO; and 4) elected in low AIO and did not receive letter to expect high IO. These set of potential outcomes allow me to examine whether changes in incumbent behavior (if any) is due to voters selecting quality officeholders through heavily-monitored election, or incumbents' expectations of high election-day monitoring that would make rigging their reelection futile.

To measure responsiveness, I use fined-grained new data on Members of Parliament's (MPs) spending of their state-provided individual Constituency Development Funds (CDFs) during their four-year terms. MPs must exert effort to use their funds to provide constituency service and public infrastructure because doing so involves satisfying a set of bureaucratic regulations.[9] Also, analyzing CDF spending provides an opportunity to examine what types of voter preferences politicians prioritize. MPs have discretion over the use of their funds; they may construct local public goods or simply offer private benefits to constituents. The availability of these data allows me to assess the proportion of funds legislators spend on both public goods and private benefits with the expectation that greater spending on public goods is indicative of high responsiveness. For these reasons, CDF spending is an appropriate measure of legislator effort on behalf of

average, the actual proportion of polling stations that received monitors in constituencies in *low*, *medium*, and *high* IOs were 14, 18, and 30 percent, respectively.

[8] Owing to the limited number of cases in the initial study, I combine medium and high constituencies in my main analysis. Moreover, the difference between the overall effect of observers in medium and high intensity of observation are not statistically distinguishable zero.

[9] Prior work in India finds that representatives often do not make use of their funds unless they face high levels of electoral competition (Keefer and Khemani, 2009).

citizens. I complement the information on CDF spending with data from closed-ended survey with MPs and administrative records on their attendance in parliament. Together, my use of a rich set of information on MPs' behavior allows me examine which dimension of legislator representation roles fair elections impact and whether there are substitution effects (Eulau and Karps, 1977).

My results are fourfold. First, I find that politicians elected in intensely-monitored elections use higher shares of their allocated CDFs, which implies that they exert greater levels of effort to meet constituents' demands. Specifically, politicians elected in high AIO constituencies spend 19 percentage points more of their total funds compared to MPs selected in low AIO constituencies. Second, I find that MPs elected in intensely-monitored elections spend more than double of their funds on public infrastructure projects compared to those in low. Third, whether elected in low or high intensely-monitored elections, MPs allocate a similar proportion of their funds to provide private benefits. Taken together, these findings imply that the significant differences in the level of total expenditure among legislators are driven by greater levels of spending on public goods, and not spending on private benefits, by MPs elected in high AIO constituencies. Finally, I find that politicians elected in high AIO constituencies are equally as absent as their counterparts elected in low AIO constituencies during parliamentary meetings, which suggests that fairer elections do not encourage officeholders to substitute constituency service for legislative work.

I provide (tentative) causal evidence to suggest that the effects of intense election observation most likely run through incumbents' expectation of possible *sanction* by voters through cleaner elections. First, using data from a survey I conducted with MPs, I show that, even three years after the initial intervention, politicians elected in an intensely-monitored election were more likely to report that they saw observers at polling stations they visited. Moreover, such MPs were able to proffer guesses about the proportion of polling stations in their constituencies that observers monitored which, on average, were consistent with the empirical intensities. I argue that because MPs saw such rigorous election observation, which they say is effective in reducing fraud in their constituencies, they estimate that future rigging may be futile. Such expectations may explain the improved performances of politicians elected in intensely monitored constituencies. In fact, and second, findings from the follow-up experiment (EIO) suggest that, MPs who received letters to expect intense election observation during their reelection race boosted their level of spending by about 5 percentage points. The effect of election observation on performance was more profound among those who were elected in high AIO and also received letters to expect intense monitoring. These effects are substantively significant (but not statistically). Accordingly, these results only provide a preliminary support for my proposed mechanism.

On the contrary, I find no systematic evidence that the intervention affected the number of candidates or the observable qualities of those who were ultimately elected, which would indicate a selection effect (Besley, 2005). Also, drawing on Afrobarometer data, I find no support for an alternative explanation

that suggests that high-intensity observation may have heightened citizens' pressure on politicians to supply public goods and services.[10]

With this study, I make four contributions to the literature. First, this paper is, to my knowledge, the first to show that rigorous election monitoring, by decreasing fraud and violence, also produces a downstream causal effect on the responsiveness of politicians, suggesting that quality elections generates concrete benefits for citizens. This breaks new ground in providing empirical support to justify the billions of dollars that the international community dedicates to promoting electoral integrity. My work complements existing research that shows that electoral integrity matters for outcomes such as political participation (Birch, 2010; Hyde and Marinov, 2008), regime legitimacy (Birch, 2008; Berman et al., 2014; Hall, Hyde and Wellman, 2015), and stability (Hyde and Marinov, 2008). Second, I contribute to the literature on election observation. I show that observers can affect political outcomes long after the election day itself. I therefore extend prior work that focuses on the effect of observers before the polls (Ichino and Schündeln, 2012), and on election day at the polling station level (Hyde, 2008, 2010; Sjoberg, 2012; Enikolopov et al., 2013; Asunka et al., 2017). Third, a large literature asks under what conditions politicians "give up" clientelism (Lindberg and Morrison, 2008; Young, 2009; Weitz-Shapiro, 2012; Fujiwara and Wantchekon, 2013). As far as scholars take the distribution of private benefits as clientelistic, I show in this case that fairer elections neither exacerbate clientelism nor reduce it, but they do increase spending on local public goods. Finally, I contribute to the literature on electoral accountability, which to date has only considered institutional determinants of political responsiveness such as term limits, electoral systems and rewards (wages) from office (see Ashworth, 2012). I explore the effects of electoral fraud and demonstrate that, beyond formal institutional rules, election manipulation also affects democratic accountability.

1 Electoral integrity and the responsiveness of politicians

In theory, competitive elections should improve political responsiveness of leaders, aligning political outcomes with the preferences of voters. A growing consensus in the literature is that the effects of elections on performance can arise through two distinct but reinforcing channels (Miller and Stokes, 1963; Fearon, 1999; Mansbridge, 2009). First, elections can help to screen candidates, *selecting* competent or public spirited types who they believe tend to work harder in office, and rejecting or discouraging low quality types (Miller and Stokes, 1963; Kingdon, 1989; Fearon, 1999; Besley, 2005). Indeed, empirical evidence suggests voters prefer such honest and high-performing politicians in diverse settings (Besley, 2005; Galasso and Nannicini, 2011; Bratton, 2013).[11]

[10] This also obviates concerns that the effect of election observation may have worked to improve performance of politicians through channels other than its effect on election-day fraud and thus violating the exclusion restriction assumption of my instrument (see results in Table $H.4$ in Appendix H).

[11] For example, survey data from the United States (i.e., NES survey) suggest that American voters express deep concern about potential "crooks" in Congress (Besley, 2005). Similarly, in Sub-Saharan Africa, findings from the Afrobarometer survey suggests African voters care about legislators that exhibit high levels of performance, and that such concerns can eclipse their possible vote choice based on social identity (Bratton, 2013, pg. 11). Further, evidence from Italian parliamentary elections suggests that

Second, elections can provide incentives for officeholders to perform well, irrespective of type, because voters can retrospectively *sanction* poor performance (Ferejohn, 1986). In this view, politicians are self-interested and rent-seeking, but also seek to be re-elected (Mayhew, 1974). Thus, electoral discipline motivates incumbents to put in optimal efforts, choosing a (costly) level of effort to satisfy voters' endogenously established welfare utility threshold (Austen-Smith and Banks, 1989).

While the selection and sanctioning models of electoral accountability provide plausible explanations for an incumbent's performance in office, both models typically assume that elections are run honestly—that the will of the voters is accurately reflected in the results. I argue that both channels of influence can be subverted by politicians' ability to rig elections. The underlying assumption in the connection between cleaner elections and responsiveness is that the extent to which politicians can rig elections influences their incentives to cater to the demands of citizens (Collier and Hoeffler, 2015).

In the case of selection, other things being equal, election-day fraud may undermine citizens' ability to elect politicians who share their interests simply because the candidate most voters cast their votes for is not declared as the winner.[12] Because the "winner" may not share the preferences of voters, the incumbent is unlikely to behave in ways consistent with the needs of citizens. Regarding sanctioning, I assert that, in practice, incumbents can either rig elections to remain in office or "earn" their reelection by working harder to meet the expectation of voters. Obviously, incumbents can win office through other factors such as vote buying, access to more campaign funds, and media coverage (incumbency advantage). Nevertheless, because officeholders cannot rely on these methods they often supplement these assets in their disposal with vote rigging. I suggest that, all else equal, when it is easy for incumbents to engage in election-day fraud, they can reduce the time, personal resources, and the amount of effort they devote to address the needs of constituents, and instead pursue their private business activities to earn outside rents (in addition to their salaries as politicians).

My argument implies that if an intervention, such as election observation, places a constraint on the ability of politicians to rig their reelections, they will need to exert more effort to win the support of voters. Such interventions, therefore, should encourage political responsiveness because by increasing the integrity of elections, voters can, in principle, select quality candidates who they believe will serve their interests, and sanction those who shirk.

Focusing on election-day observation, I argue that by increasing the probability that fraud will be detected and reported, observers deter incumbents from obvious vote manipulation (Hyde, 2011; Kelley, 2012). If apprehended, incumbents may face legal punishment or reputational damage (i.e. being caught in an illegal or socially reprehensible act) (Snyder, 1987). In fact, empirical studies have shown that the presence

in response to voters' desire for competent officeholders, parties do compete to field quality candidates, especially in competitive districts (Galasso and Nannicini, 2011).

[12] In theory, voters' ability to elect a candidate they believe is the "best" may be influenced by other factors such as the availability of quality candidates in the electoral competition (Caselli and Morelli, 2004; Besley, 2005), information about incumbents performance and other candidates, and voters ability to coordinate on high-quality candidates (Besley and Coate, 1997; Keefer and Khemani, 2005). I examine the independent effect of election-day fraud in the process of political selection.

of observers reduces the number of illegal votes that a cheating incumbent can obtain on election day through ballot stuffing, multiple voting, or the intimidation of voters (Hyde, 2007; Enikolopov et al., 2013; Asunka et al., 2017). In turn, this reduces the vote share and the chances of reelection for nonperforming officials, which implies that election observation increases the political cost for incumbents.

I argue that faced with vote rigging constraints, reelection-seeking incumbents will work harder to meet their constituents' demands to win their support on election day. Specifically, I hypothesize that incumbents who are elected in intensely monitored elections and thus had limited ability to rig the ballot would be more responsive to the demands of citizens compared to those who had a fewer presence of monitors and had significant room to commit fraud. I contend that incumbents are likely to significantly discount their ability to rig their reelection if a substantially large number of observers were present in the prior election and thus expect similar rates of monitoring in the future. This motivates them to put in more effort to win the support of citizens.

By definition, responsiveness, which involves doing what voters want, is context-specific. Voters in developing countries may demand a different form of representation from their elected officials compared to citizens in developed countries. Politicians in developed countries are generally considered to be responsive if they take positions on policy issues that are similar to that of their constituents (see Miller and Stokes, 1963; Fiorina, 1974; Peress, 2013). Of course, many scholars have also considered the focus of politicians elected in single-member districts on constituency service including the provision of 'pork' to 'cultivate personal vote' in advanced democracies (see Fenno, 1978; Searing, 1994). However, in developing countries, some studies suggest that voters primarily demand the delivery of local public infrastructure and personal benefits from politicians. In such contexts, being responsive implies providing concrete benefits to constituents. Therefore, to examine responsiveness, we first need an understanding of what voters want in a given context.

Unfortunately, there is no consensus on what informs voter choice in elections in young democracies, including those in Sub-Saharan Africa. In fact, there are two views on the subject. The dominant view of African politics is that it is clientelistic—a system of politics where an individual or a group's access to resources is contingent on their provision of political support (Hicken, 2011). According to this view, in African elections, votes are exchanged for cash or gifts, or given freely for political backing and ethnic loyalties (van de Walle, 2003; Kramon, 2013). Scholars find that voters are more responsive to clientelistic than to programmatic appeals (Wantchekon, 2003), and are more likely to turn out at the polls in response to vote buying (Vicente and Wantchekon, 2009). Several scholars have also shown evidence of voting based on ethno-regional identities (see Mozaffar, Scarritt and Galaich, 2003; Posner, 2005; van de Walle, 2007). Second, an emerging body of work argues that performance evaluation plays a role in determining voters' choice in Africa. According to this view, African voters grant their votes to politicians in exchange for local public goods and services. Indeed, pressures to provide public goods leads politicians to engage in projects that are easily attributable to political action, such as the construction of local roads (Harding, 2015).

Accordingly, these two views lead to two main predictions about the type of effort to expect from reelection-seeking politicians in response to an increase in election quality. If politics is clientelistic, then

cleaner elections might exacerbate such practices. If voters prefer private benefits in exchange for their votes, then it is reasonable to expect that responsiveness will take the form of politicians providing more private goods to citizens. Accordingly, in this settings, higher-integrity elections may increase the provision of private benefits to citizens.

The second view leads to a different prediction. If voters use elections to evaluate incumbents' records of providing public goods, then we would expect higher quality elections to generate responsiveness to these demands. In particular, politicians would deliver more roads, schools, clinics, and toilets to their constituents, goods that are likely to be attributed directly to their political action and thus enhance their reelection prospects. Therefore, higher-integrity elections would increase the provision of public goods to citizens.

However, there is also a third possibility; politicians may deliver a combination of public and private goods (Asante, Brobbey and Ofosu, 2011; Diaz-Cayeros, Estévez and Magaloni, N.d.). The few studies on legislators in Africa suggest that they face enormous pressure to supply both types of goods (Lindberg, 2010; Hyden, 2010). Therefore, it is possible that politicians would increase the provision of both types of goods. The more savvy politicians may, however, weight the electoral benefits of these goods. For example, Lindberg (2010) reports that some Ghanaian legislators are beginning to realize that providing private benefits does not have a high electoral payoff, especially in urban areas. Accordingly, they dedicate more of their resources to the provision of public goods.

The politicians I analyze in this study are legislators elected from single-member districts. Across the world, legislators perform four core functions: legislation, executive oversight, constituency representation, and constituency service. The first three constitute work in the legislature (parliamentary work) while the latter (constituency service) involves satisfying the non-policy concerns of citizens including the provision of local public goods and private benefits. I use a combination of data to examine the impact of the integrity of elections on how legislators respond to different citizens' demands.

2 Electoral politics and election fraud in Ghana

Ghana is an ideal setting to study the effect of elections because the level of competitiveness and turnover means that politicians have real incentives to think about how they use their resources when seeking reelection. Similar to many other countries, the country adopted multiparty elections in the early 1990s. Ghana's 2012 general elections, which elected the 2013-2017 Parliament, were the sixth since the country's return to multiparty politics in 1992.[13] Ghanaian legislators are elected for four-year terms from single-member districts using plurality rule. There are no term limits for MPs. Currently, the Parliament is composed of 275 members.[14] During the 2013-2016 Parliament, 148 MPs belonged to the ruling National Democratic Congress (NDC), 123 to the main opposition party, the New Patriotic Party (NPP), and one to the People's

[13] Ghana held concurrent presidential and parliamentary elections in 1992, 1996, 2000, 2004, and 2008.

[14] The number of MPs has increased since 1992. Between 1993 and 2004, there were 200 MPs. The number rose to 230 in 2005 and 275 in 2012.

National Convention. There were three independent MPs. The NPP and NDC have dominated Ghanaian electoral politics since 1996 with the two parties controlling over 98 percent of seats.[15] However, parliamentary races are increasingly competitive. Between 1996 and 2012, the average vote margin declined by about 11 percentage points, which represents a 38 percent decrease. Also, between 2000 and 2012, the average turnover rates for incumbents seeking reelection was 24 percent. Scholars have noted similar high turnover rates in many African legislatures (e.g. Barkan and Mattes, 2014; Opalo, 2017).[16]

While Ghana is touted as a democratic success in sub-Saharan Africa, several studies suggest that the country's elections are often characterized by fraud and violence (Gyimah-Boadi, 2007; Jockers, Kohnert and Nugent, 2010; Ichino and Schündeln, 2012; Straus and Taylor, 2012; Asunka et al., 2017). These studies suggest that the prevalence of fraud and violence in Ghanaian elections may be explained by the rewards politicians receive from office and the ability of politicians and their agents to avoid prosecution for engaging in illicit electoral practices. On the former, the literature suggests that the enormous benefits and patronage resources that elected officials receive from office ensure that politicians are willing to adopt illicit tactics including rigging and violence to win a seat in Parliament (Gyimah-Boadi, 2009; Ninsin, 2016).[17] On the latter, the 2012 general elections is a case in point. Following the polls, the main opposition party (NPP) filed a petition in the country's Supreme (highest) Court pointing to several irregularities in the polls. While the Supreme Court eventually acknowledged some of the allegations in its verdict, no official or party was indicted, and the case was dismissed, suggesting that politicians may use fraud and violence while facing little risk of punishment. Accordingly, fraud and violence are viable options for officeholders who face stiff competition or simply seek to ward off strong competitors.

To curb electoral fraud, civil society groups, with support from international donors, have monitored the country's elections since 1996. Prominent among these groups is Ghana's Coalition of Domestic Election Observers (CODEO). Since its formation in 2000, CODEO has observed all of the country's general and local government elections. The group is now composed of about 34 independent civil society organizations including religious, professional, and student bodies. In 2012, CODEO deployed about

[15] The NPP, then the opposition, boycotted the December 28, 1992 Parliamentary elections accusing the incumbent NDC of rigging the presidential polls held earlier in November 3, 1992. In the 1992 elections, the NDC was led by Jerry Rawlings who seized power in the early 1980s in a military coup. Thus, Ghana's First Parliament of its Fourth Republic was a single-party deliberative chamber.

[16] According to my calculation, the overall turnover rates for the Ghanaian Parliament between 2000 and 2012 is 45.38 percent (i.e., either losing through party primaries or general elections), and the average percentage of seats changing between parties averaged 22.45 percent (Election data from Ghana's Electoral Commission). In my calculation, I use the official list of MPs who appeared on the official ballots for reelection.

[17] In 2012, the salary of MPs was increased from $\$2,225$ to $\$3,800$ a month, which is fifty times the monthly minimum wage of \$70 and more than seven times the average monthly salary of civil servants, such as teachers (\$500) (see `http://www.bbc.com/news/world-africa-20188452`). Beyond their salaries, MPs are also entitled to *ex gratia* after each term in office. In 2013, those who served in the 2009-2012 Parliament received $\$138,000$ (GHC $276,000$) each in *ex gratia* payments (see `http://www.graphic.com.gh/news/politics/mps-receive-gh-47-million-as-ex-gratia.html`, accessed July 12, 2016.)

4,000 observers to polling stations around the country on election day.[18] Similar to other election observation missions, CODEO's aim was to promote the integrity of the electoral process and strengthen political accountability. At the time of the December, 2012 elections, my collaborators and I leveraged CODEO's observation mission to measure the effects of election observers on indicators of election day fraud and violence (Asunka et al., 2017). In collaboration with CODEO, we randomized the intensities of observers across electoral constituencies. I suggest that such random assignment of the intensity of election observation across constituencies provides exogenous variation in election quality (see below). Accordingly, Ghana provides a unique setting for this initial study of the causal link between election integrity and democratic responsiveness.

3 Reseach design

I employ a field experimental approach to test the impact of credible elections on incumbents' behavior and to examine the possible mechanisms through which cleaner elections influences legislator responsiveness. To lay out the logic of my experimental design, imagine an *electoral accountability game*. The game involves three stages and two sets of actors; voters and candidates (including an incumbent). An election is held in stage one (i.e., time $t-1$) in which voters elect among the available set of candidates for a political office. Candidates vary in their types (competence or preferences).[19] To simplify, the quality the election at time $t-1$ can be one of two types: *High* and *Low*, and it is observed by all candidates. In the second stage (time t), the period before her reelection race, an incumbent chooses a level of (costly) effort for her parliamentary work and constituency service. Voters reward the incumbent at time $t+1$ if her level of effort satisfies their expectations or punish her otherwise. Under the sanction model, I assume that incumbents condition their actions on their anticipation of how fairly citizens' votes will be translated into election outcomes. Beliefs about the fairness of the election in time $t+1$ may be influenced by the quality of the prior election or knowledge about an intervention that aim to detect fraud. I assume that incumbents who believe that they cannot rely on vote rigging to retain their position would work harder to satisfy the need of their constituents while those who hold the opposite view would shirk. Again to simplify, I assume that an incumbent may expect the election quality at time $t+1$ to be either *High* or *Low*. Indeed, it is reasonable to expect that incumbents elected in high-quality election who expect to be able to rig in the next polls may exert a lower effort compared to those elected in high and expects a high-quality reelection race.

To examine the causal effect of election quality and examine possible channels through which it (election quality) influences behavior, we need to manipulate the credibility of the polls at time $t-1$ as well as incumbents' beliefs about how honest their reelection race would be run at time $t+1$. The merit

[18] The United States Agency for International Development (USAID) supported CODEO's observation mission with US$1.2 million in the 2012 elections `http://ghana.usembassy.gov/peaceful_elections.html`, last accessed, July 28, 2016.

[19] It is worth noting here that while candidates types is a necessary assumption for the selection model of electoral accountability, this does not necessarily apply to the sanction model of accountability. In the sanction model, voters are assumed to randomly choose a candidate at stage one and observe their behavior in time t.

of this method is that it allows us to causally identify the effect of our independent variable (here, election quality) by purposely assigning its values (e.g. high or low quality) to our unit of analysis to assess its impact on the outcome of interest (here, legislator behavior). I leverage insights from recent work on election-day observation in Ghana (and elsewhere) to achieve both goals in the *real* world.

3.1 Experimental design

3.1.1 Intensity of (actual) election observaton as instrument for election-day quality

First, to manipulate the quality of elections in which politicians are elected to office at time $t-1$, I leverage a field experiment I conducted with co-authors in Ghana's 2012 elections. The research employed a randomized saturation design pioneered by Baird et al. (2012) to measure the impact of election-day monitors on fraud and violence at polling stations and across electoral constituencies. The randomized saturation design is a multilevel experimental design in which the percentage of stations in a constituency that is monitored by observers is randomly assigned. Furthermore, within a constituency, monitors are assigned to a random set of polling stations. Thus, the probability that a station monitored is equivalent to its constituency's randomly assigned saturation level. For example, if a constituency is assigned to 50% saturation, then the probability of a station within this constituency being monitored is half.

The advantage of the randomized saturation design is that it allows, among other things, to estimate the total causal effect of monitoring taking into account the well-noted possible spillover effects of observers (Ichino and Schündeln, 2012). The key idea is that since monitors cover a fraction of stations within a constituency, fraud prevented from monitored stations may be displaced to unmonitored stations, or monitors may perhaps also deter fraud in nearby polling stations. By assigning some constituencies to receive fewer monitors and others to receive significantly high concentration of observers, we can estimate the net effect of observers on fraud within constituencies by comparing average electoral outcomes for (monitored and unmonitored) polling stations in intensely-monitored districts to control stations in districts with few monitors, which by design are less susceptible to spillover effects. Details of the design (and results) are presented in Appendix C.

In partnership with CODEO, we deployed about $1,300$ monitors to 60 constituencies located in four of Ghana's ten regions that we assigned to one of three election observation intensities: *low* (13), *medium* (24), and *high* (23). We find that taking into account potential spillover effects, increases in the intensity of observation reduces the overall levels of fraud (measured by turnout and candidates' vote share) and intimidation of voters at polling stations within a constituency. Specifically, increasing the IO from low to medium and high reduces turnout by 5.6 and 4.5 percentage points, respectively at polling stations in medium and high IO constituencies. Similarly, increasing a constituency's IO from low to high reduces the incidence of intimidation of voters during voting at polling stations by 4.5 percentage points. In further analysis, I find that candidates from both major parties, NDC and NPP saw a reduction in their vote shares, which sug-

gest that the effects of observation were not confined to candidates from a particular party, providing good grounds to examine the behavior of all legislators irrespective of party affiliation.

Based of the outcome of the above study, I argue that because the intensity of observation across constituencies was randomized, it provides exogenous variation in election-day quality. That is, through the design, I manipulate the intensity of observation that serves as a *relevant* instrument for the election fairness in constituencies from which incumbents were elected. I refer to this initial random assignment of intensity of election-day monitoring as *Actual Intensity of Observation (AIO)*. Since the effects of medium and high saturations appears similar and the initial sample (of 60) limits the statistical power of the study (especially in the follow-up experiment described below), I consider both medium and high constituencies as *high* AIOs (47), comparing the behavior of its incumbent legislators at time t to those elected from *low* AIO (13) electoral districts.[20]

3.1.2 Manipulating expectations about future election quality

To systematically examine whether expectations about future cleaner elections drives changes (if any) in the behavior of incumbents who were elected in intensely-monitored constituencies, I dispatched letters to a random set of 30 of my initial 60 MPs (blocking on their initial AIO). In consultation with CODEO, I wrote a letter which stated that evidence from academic research on the country's 2012 elections shows that more observers in a constituency reduced overall levels of fraud (i.e., suspicious turnout rates and more people voting than were registered at polling stations) and voter intimidation. The legislators were then told that, to corroborate these results, I was collaborating with CODEO to replicate the study because, if true, the findings hold promise for democratic consolidation in the country.

The letter then informed the MPs that as part of the study, CODEO *plans* to deploy observers to 80 *percent of polling stations* in some constituencies in the upcoming (2016) elections and that their electoral districts happens to be one of those. I did not send the letter to MPs in the control group. The letter was stated in probabilistic terms because the number of observers CODEO could eventually deploy was dependent on the availability of donor funds, which was not known at the time I circulated the letters. Moreover, CODEO was cautious in giving details of its observation plans at the time because it may pose a risk to its observers. However, I needed to send out the letters at the time I did to give incumbents enough time to respond to the treatment in meaningful ways.[21] In fact, Harris and Posner (2017) find that in Kenya 56 percent

[20] The findings reported in this paper does change if the results are disaggregated.

[21] In the letter, I informed MPs that I was still in consultation with CODEO on the actual implementation of my study, but that I was almost sure of the roll out of my plan on election day. It is worth noting that it is the effect of the *expectation* of intense observation in their constituencies that is relevant for this part of the study and not the *actual* intensity. Nevertheless, since its establishment in 2000, CODEO had deployed observers to all constituencies and are well known by politicians. The only difference my intervention sought to make was to inform a set of randomly selected MPs to expect a potential increase in the presence of observers in their constituencies. In 2016, observers were deployed to all constituencies, but CODEO rather deployed more observers to potential "trouble spots" in addition to their nationally representative sample to conduct a Parallel Vote Tabulation (PVT) (You may listen to Dr. Kojo Asante's interview with Kim Yi Dionne on Ufahamu Africa podcast at: `https://ufahamuafrica.com/2017/01/07/from-episode-1-what-were-reading-this-week/`, accessed

of the projects implemented by MPs using their CDFs took a year while about a quarter took 2 years. Accordingly, the probabilistic nature of the letter represents a compromise with CODEO and implies that the treatment may be weak. Nevertheless, it provides a useful first step to understand the effects and potential causal channels through which quality elections influence political responsiveness.[22]

While my letter intervention is, in part, based on the results of the randomized saturation experiment describe above, it is also informed by insights from the literature on monitoring corruption (Olken, 2007; Callen et al., 2016). Empirical research on corruption shows that when (election-day) monitoring is announced it can alter the expectations of incumbents about the chances of fraud detection. That is, officeholders would come to belief that the chances that illegal activities will be detected on election day is high (Becker and Stigler, 1974). Indeed, in my interviews with Ghanaian legislators in 2015, more than half (58 percent) said that election observers are able to reduce fraud in their constituency. Assuming some non-zero probability that fraud will be detected (because some observers are often deployed to all constituencies in Ghana), I suggest that announcing to MPs that more observers might be present in their constituencies would increase the salience of election-day observation among treated incumbents and therefore increase the likelihood that they increase their efforts to satisfy citizens' demands to get reelected.

I refer to the letter treatment as *Expected Intensity of Observation (EIO).* I sent these letters to treated MPs in November 2015 in person reading the content of the letter to them.[23] Another letter was sent to MPs' mailboxes (followed by phone calls to confirm receipt) in April 2016 as a reminder. Copies of these letters are provided in Appendix D. By sending letters to MPs who received intensive and less-intensive observation during the 2012 elections, during their last year in office, my experiments yield a 2×2 design with four type of incumbents (see Table 1).

	Expected Intensity of Observation (EIO) $(t+1)$		
	Received letter (t)		N
Actual Intensity of Observation $(t-1)$	$Yes(l=1)$	$No(l=0)$	
$High(i=1)$	Y_{11} (21)	Y_{10}(26)	47
$Low(i=0)$	Y_{01}(9)	Y_{00}(4)	13
N	30	30	

Table 1: Experiment Design

April 14, 2017). On average, therefore, one would expect similar levels of intensity across electoral constituencies in the treated and control groups.

[22]It is possible that MPs in the control group will hear about my intervention and, potentially, also come to expect that their constituencies will also be intensely monitored on election day. While plausible and, if true, poses a threat to inference about the unbiased effect of the treatment on legislator responsiveness, two key factors mitigate such concerns. First, I personalized my letters to individual MPs and did not say that CODEO will deploy no observers to other constituencies. The letter simply notified treated MPs that the presence of observers in their constituencies would be higher compared to others. Moreover, if some control MPs mimic the behavior of treated MPs by increasing their level of responsiveness, this will reduce the treatment effect.

[23]For the few (5) MPs who my RAs could not meet in person, I first delivered their letters to their mailboxes in Ghana's Parliament House and followed up with a call to inform them about the letter and its content.

Specifically, in 2016, the two treatments at times $t-1$ (AIO (a)) and t (EIO (l)) generates four sets of the MPs (Y_{al}) represented by the row and column cells of Table 1 as follows:

1. Y_{11}: MPs elected in high AIO and received a letter to expect a large number of observers in their constituency in the impending elections
2. Y_{10}: MPs elected in high AIO but did not receive a letter
3. Y_{01}: MPs elected in low AIO and received a letter to expect high IO
4. Y_{00}: MPs elected in low AIO and did not receive letter to expect high IO

These rich set of potential outcomes allows us to not only test whether intensely-monitored election induces a higher incumbent effort but also examine the potential causal mechanisms. Regarding performance, we can compare the performance of incumbents elected in intensely-monitored elections but do not receive a letter to those who were elected in constituencies with fewer monitors and did not receive a letter ($E[Y_{10}] - E[Y_{00}]$). On mechanisms, I state above that scholars suggest that election may exert its influence by enabling voters to select high-quality candidates or through incumbents' fear being voted out in fair elections. To examine the former, I compare the observable characteristic (i.e., quality) of incumbents elected in high AIO and those elected in low AIO ($E[Y_{10}] - E[Y_{00}]$). On the latter, I examine whether receiving a letter to expect a higher monitoring boosts performance ($E[Y_{01}] - E[Y_{00}]$, and $E[Y_{11}] - E[Y_{10}]$).

Obviously, these set of analyses are limited to the last year of the four-year terms of MPs in the initial sample and also constrained by the limited number of cases in each of the treatment conditions (as shown in parentheses). However, it provides an important complement to the primary analysis of whether improving the quality of election at time $t-1$ increase the responsiveness of politicians during their terms in office. In particular, it helps to test my assumption that it is incumbent's expectation of future sanction that drives the causal relationship between honest elections and politicians' behavior (if any).

4 Measuring the responsiveness of legislators: the use of CDFs

Measuring the responsiveness of legislators to voters' demands is difficult because their actions are often not directly observable. Accordingly, scholars rely on different proxies to measure lawmakers' levels of effort. Such proxies have included: legislators' subjective assessment of their priorities for constituency service (Heitshusen, Young and Wood, 2005); committee membership, on the assumption that membership of some committees facilitates legislators' abilities to provide benefits to their voters (Stratmann and Baur, 2002); and sponsorship of relevant legislative bills (Schiller, 1995; Wawro, 2001). As Keefer and Khemani (2009) argue, while these proxies are useful measures of legislator activity, they hardly tell us the actual amount of work an individual representative does, and who directly benefits.

To obtain a more direct measure of MPs' efforts, I measure responsiveness using legislators' spending of their Constituency Development Funds. The central government allocates equal amounts of money in

CDFs to help MPs provide services and public infrastructure within their constituencies each year. Between 2014 and 2016, each Ghanaian MP was allocated GHC $1,264,987$ ($\approx$ \$316,246).[24] Unspent funds are rolled over to the next year. MP spending of CDFs is an appropriate measure of responsiveness for two reasons.

First, MPs have to exert a significant amount of effort to use their funds. For example, to construct a bridge or repair a road in a local community, an MP must submit at least three price quotations from different vendors (Section 43 of the Public Procurement Act 663, 2003). The CDF regulations require MPs to pass their plans and all their payments through their local governments, which maintain the accounts to which the Fund Administrator (FA) deposits disbursed funds. The mayor and the procurement entity of the local government will then approve payment for the winner of the bid. These processes take time and energy.[25] In the case of providing personal assistance such as paying school fees or medical bills of individual constituents, MPs must write letters providing reasons for the requests and the lists of selected recipients. Because MPs can decide to use or not use their funds, aggregate levels of fund spending provides a useful proxy of effort. In this regard, this study joins an emerging literature that uses politician spending of CDFs or other central government's transfers in their electoral districts as measures of responsiveness (e.g. Keefer and Khemani, 2009; Chong et al., 2014; Harris and Posner, 2017)

Second, when MPs decide to use their funds, they have discretion over the allocation. They can either decide to provide public goods or private benefits to their constituents. Data on how MPs allocate their funds provide an avenue to examine which types of citizens' demands they prioritize. In settings such as Ghana, where scholars argue that legislators face enormous pressure to provide clientelistic goods, politicians may use CDFs to provide benefits to their supporters (Van Zyl et al., 2010). A legislator may, for example, allocate her funds to friends or party supporters under the pretext of "self-help" projects. Therefore, I consider the proportion of funds that each legislator spends on public goods and private benefits with the assumption that spending on the former is more responsive to the demand of more voters.

I gained access to the official expenditure records of legislators from the administrators of the CDF for three years (2014-2016) of their four-years terms.[26] These are monthly ledger records of legislator spending on various items for the period. I digitized $2,160$ months of spending records from these paper-based reports. I then constructed an original database on how MPs' allocate their funds among five principal expense categories: *personal assistance* to constituents (e.g., school fees, medical bills, business support, roofing of house, etc.); *local public goods* (e.g., construction or repairs of local roads, construction or rehabilitation of schools and clinics, streetlights, and bridges); *monitoring of constituency projects and office expenses*; *transfers*

[24] The government allocated each MP GHC 348, 667, GHC 403, 688, and GHC 512, 632 in 2014, 2015, and 2016, respectively.

[25] Indeed, this requirement often results in rancorous relationships between MPs and their local governments because some legislators attempt to circumvent such laws. For example, see `http://www.myjoyonline.com/politics/2016/may-14th/mp-and-suhum-mce-haggle-over-release-of-common-fund.php`, last accessed, May 14, 2016.

[26] Data for the first year are incomplete because new administrative districts were established prior to the elections were not fully functional. Accordingly, they are not included in my study.

towards local government projects and activities (e.g., funds for national independence day or farmers' day celebration); and *donations to support local groups to undertake projects or activities* (e.g., traditional authorities, religious groups, and youth associations). A last category of expenditure, which I code as *unclear*, are expenses for which the purpose or beneficiary was not clear from the ledger. In Appendix E, I provide my coding rules (Table $E.2$) and show examples of the expenses sheets (Figures $E.1$ and $E.2$), as well as the summary statistics of these data (Table $E.3$).

In general, I code MPs' allocations that benefit individuals as private goods and those that serve communities as public goods. However, the purpose of expenses that went towards supporting MPs' local government activities or projects is hard to determine from the books. In some cases, the records show that these amounts paid were to support activities organized by the local governments, while in other instances they are reported as 'loans' deducted from an MP's CDF account to his or her, perhaps cash-strapped, local government. These expenses may be an MP's support towards local public goods provision, but because the local government implements such activities, I consider them as separate. Also, MPs' payouts to groups only benefit the stated identifiable groups (clubs) within their constituencies, and do not necessarily benefit entire communities. Some of the expenses in this category may serve patronage purposes but may also be intended to help build skills and sports development especially of the youth or, in the case of traditional authorities, facilitate provision of public goods (Baldwin, 2013).

Monitoring and office expenses provide insight on MPs' personal activities in their constituencies. These expenses are for inspecting the implementation of development projects in MPs' constituencies and operating an office (including staff salaries) where citizens can visit instead of going to an MP's political party office or residence. Such expenses indicate an MPs' dedication to constituency services and listening to constituents needs. Although I do not verify that the stated expenses were actually provided, MPs' do not control these data and are submitted by the local government that supervises the corresponding legislator spending and thus can be trusted.[27]

4.1 Balance statistics

Before I report the results of the effect of the intensity of observation on the responsiveness of politicians, I show the difference- in-means tests for a set of covariates across the two levels of assigned treatment (i.e., *low* and *high*). Table $B.2$ in Appendix A shows the covariates balance statistics of the sample constituencies across the different treatment conditions in my sample. It is important to note here that, on average, across the two treatment arms constituencies had an equal number of candidates (4.5) contesting in the 2012 polls, suggesting the AIO did not influence the number of candidates. I return to this fact in section 6. Also, across treatment arms, constituencies are equidistant from the Parliament house in the capital (about 183 kilometers), which suggests that elected MPs would have to travel similar distances to visit their constituencies, on

[27] In my interviews, many MPs referred me to the CDF administrator for details of their expenses when I asked them to mention projects or activities they have funded using their CDFs.

average.[28] There is also balance across treatments on citizens' assessment of the performance of the previous MP on constituency service, as well as support for the major parties. I report similar balance statistics for the follow-up letter treatment in Table $B.3$ of Appendix B.

5 Results

In this section, I present results from the initial assignment of actual intensity of observation on the behavior of MPs during their four-year terms. Because the follow-up experiment (EIO) that randomized letters to MPs was implemented during legislators' last year (2016) in office, I discuss its results in Section 6 where I examine the possible causal explanations for the main results.

5.1 Estimating the causal effect of AIO on legislator responsiveness

I estimate the average intention-to-treat (ITT) effect of the actual intensity of observation on the responsiveness of legislators.[29] Specifically, I compare the average outcomes for representatives elected in constituencies randomly assigned to high AIO to those elected in low. The random assignment of intensities of observation allows me to interpret any significant differences as the causal effect of higher-intensity observation on my outcome measures. Formally, let $Y_i(M_i)$ denote the outcome of interest for legislator i elected from a constituency with an intensity of observation M. I estimate:

$$ITT = E[Y_i \mid M_i = \text{high}] - E[Y_i \mid M_i = \text{low}]$$

where $E[Y_i \mid M_i = \text{high}]$ is the average level of responsiveness of legislators elected in intensely-monitored elections and $E[Y_i \mid M_i = \text{low}]$ represents that for those in low.

5.2 Average ITT effect of AIO on the use of CDFs

Before presenting results for the ITT effects of AIO on the use of the CDF, I first show a breakdown of the average actual total amounts spent by legislators of their allocated GHC $1,264,987$ on the various expenditure categories by treatment (between 2014 and 2016). I also disaggregate MPs' expenditures over time to examine possible time trends. Table 2 displays four interesting patterns of spending among incumbents in the two treatment conditions. First, MPs elected from intensely-monitored constituencies spent more of their allocated funds. Specifically, MPs elected from high AIOs paid out GHC $573,548$ (45.3 percent) while

[28] Scholars find that the distance to an MP's district influences how often they visit, which indicates levels of constituency service (e.g., Mayhew, 1974). I find similar evidence for Ghana (result are not shown).

[29] While I use the AIO as an exogenous instrument that influences the outcome of interest, "election fairness," I use the reduced form of the ideal Two Stage Least Squares (2SLS). Ideally, one would estimate the Local Average Treatment Effeect (so-called LATE). The ITT is appropriate in this context because there are no direct measures of the overall "election fairness" at the constituency level. Nevertheless, I show in Appendix C that polling stations located in high AIOs constituencies had, on average, lower levels of fraud and violence. The AIO therefore serves as a weak intrument for election fairness (see Chernozhukov and Hansen, 2008) and the results can be interpreted as a lower bound estimate of the intensity of observation on responsiveness.

those from low AIO spent only GHC 336, 630 (26.6 percent), on average, from their available funds. While the level of spending increased over time across treatments, MPs in the intensely-monitored constituencies consistently outspent their counterparts elected in low.[30] Insofar as the level of expenditure is indicative of an MP's effort, higher AIO elections increase democratic responsiveness.

Second, when I break down the total expenditure into categories, I find that MPs elected from high AIO constituencies spent significantly more of their CDFs on local public goods. However, MPs in the treatment appear to spend only slightly more of their funds on providing private benefits to citizens compared to those on the control. Third, MPs elected in higher-quality elections donate more to organized groups, spend more on their local government activities, and spend more on monitoring local projects and the running of their constituency offices. Finally, MPs elected in low intensely-monitored constituencies spent more on items that I could not easily detect its purpose or who benefited based on the expenditure records, which may signal a lack of transparency.

[30] That MPs spent more of their funds towards elections is consistence with empirical findings in the US, which suggest that legislators exerts higher efforts closer to the polls (see Christensen and Ejdemyr, 2016).

	Total		2014		2015		2016	
	Intensity of Observation		*Intensity of Observation*		*Intensity of Observation*		*Intensity of Observation*	
	Low	*High*	*Low*	*High*	*Low*	*High*	*Low*	*High*
Expenditure Category	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Public goods	140,041	332,007	17,744	48,671	70,845	146,377	51,451	139,937
Private goods	122,003	129,832	15,735	21,175	45,434	48,830	60,834	61,127
Donations to local groups	15,113	35,651	1,500	3,088	6,333	15,643	7,279	17,288
Transfers to local government	9,675	45,057	1,316	8,833	1,735	17,489	6,625	19,142
Monitoring and office expense	3,282	9,778	1,119	2,645	829	2,867	1,334	4,359
Unclear purposed expenditure	46,516	21,223	4,806	2,396	15,330	8,733	26,380	10,313
Total	336,630	573,548	42,221	86,808	140,506	239,939	153,903	252,166

Table 2: Average CDF spending across six expenditure categories by the intensity of election observation

Notes:

1. Table 2 shows the average amount of CDF funds spent by Members of Parliament (MPs) in the sample between 2014 and 2016 by treatment conditions. Columns (1)-(2) shows total for the three year period while columns (3)-(8) breaks the spending for each year by treatment. These estimates suggest that MPs elected through intensely monitored election spent more of their available funds overall and in each year compared to their counterparts elected in constituencies with fewer monitors. Amounts are in Ghana Cedis (GHC) ($\$1 \approxeq 4$)
2. *Source:* Author's coding of original expenditure sheets collected from Ghana's District Assemblies' Common Fund Administration.

To simplify the analysis, I focus on the causal effects of AIO on MPs' total expenditure (*utilization*), and allocations to public and private goods (i.e., the first two items in Table 2).[31] The former measures the general level of MPs' efforts on behalf of constituents while the latter examines which citizens' demands politicians mostly provide.

Figure 1 shows the results for CDF utilization. The results confirms a significant difference in effort between incumbents elected in high versus low intensely-monitored constituencies. The *left* side of Figure 1 shows average use of CDFs by legislators in the two treatment conditions along with the 95 percent confidence intervals (CIs). The average CDF spending in the low AIO constituencies is 26.6 percent (s.e. 3.2) while the average use in intensely-monitored constituencies is 45.7 (s.e. 3.3).[32] The *right* side of Figure 1 shows the ITT effect (difference-in-means) as well as the 95 percent CI. The results show that MPs elected in high AIO constituencies spent 19 percentage points (s.e. 4.7) more of their allocated CDFs during the period, on average, which represents about 71 percent increase from a baseline of 26.6 percent in low AIO constituencies. The 95 percent CIs show that these effects are statistically significant as they do not cross the horizontal-dashed zero line.[33] These results support the idea that increase in intensity of observation cause politicians to exert more effort to get re-elected.

[31] Appendix $E.1$ shows the density plots for my dependent variables in treatment and control groups.

[32] Panel B of Table E.3 in the Appendix shows that between 2014 and 2016, MPs spent, on average, 41.5 percent of their allocated funds. While this suggests that MPs were exerting some efforts on behalf of constituents, it also indicates low spending of funds among MPs in general. The lack of full use of available CDFs to improve constituents' welfare is not unique to Ghana. Other scholars have reported similar results in other developing democracies. For example, in India, Keefer and Khemani (2009) find that until the country's press shone some light on the use and abuses of the Member of Parliament Local Area Development Scheme (MPLADS) in 1999, the use of the fund was 36 percent between 1993 (when it was begun) and 1999. Spending went up to 85 percent, on average, between 1999 and 2003. In Mexico, Chong et al. (2014) find that mayors for the municipalities in their study sample spend, on average, only 56 percent of the funds they receive through the central government's allocated municipal infrastructure fund (FISM). The FISM is meant to improve the delivery of service in poor areas in the country. Finally, in Kenya, Harris and Posner (2017) find that MPs spent, on average, 84 percent of the funds allocated to them through the country's CDF on projects. However, while the low spending in Ghana may reflect the lack of attention paid to the use of CDFs, it may also be due to low levels of actual disbursements. For example, in 2014 only 40 percent of the promised funds were disbursed to MPs. To my knowledge, there is no systematic study of the utilization of CDFs by Ghanaian MPs.

[33] Appendix F provides robustness checks for all the results presented in this section. Specifically, I rerun the estimates leaving out the data for one MP at a time (i.e., Jacknife analysis). This ensures that the results are not driven by any single observation.

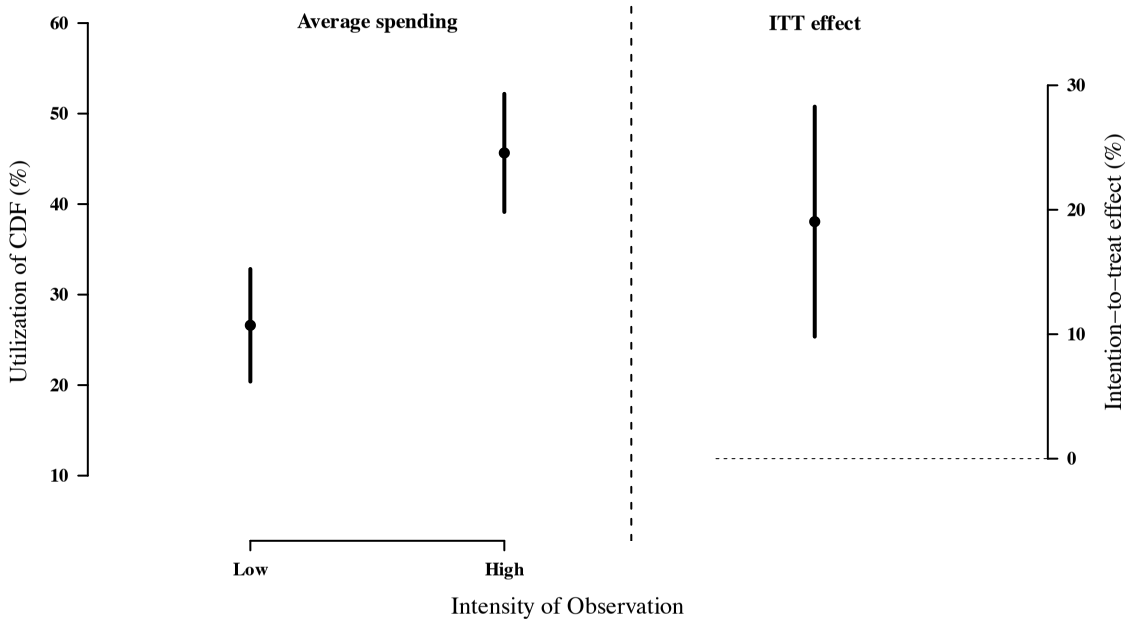

Figure 1: Members of Parliament elected in intensely-monitored constituencies spent more of their available CDFs compared to those elected from electoral districts with fewer observers

Notes: The left panel of Figure 1 shows the mean of the percentage of available CDF (GHC 1, 264, 987) between 2014 and 2016 that was used by MPs elected from constituencies monitored at low and high levels of election monitoring intensities. The right panel of Figure 1 shows the average intention-to-treat (ITT) effect of high election observation on average CDF spending. These estimates are presented along with 95% confidence intervals. The average ITT effect is the difference-in-means estimate between low and high intensely monitored constituencies. Robust standards errors (HC2) are used to generate the 95% intervals around the average ITT effect.

In Figure 2, I disaggregate the results by the type of expenditure: public goods (left figure) and private benefits (right figure). I find that higher-intensity of monitoring increases legislator spending on public goods, but not on private goods. In the *left* side of Figure 2, the average use of CDF for public goods are 11.1 (s.e. 1.9) and 26.4 (2.8) percent in low and high AIO constituencies, respectively. An increase in the treatment from low to high led to an increase of about 15 percentage points in spending on public goods, which is substantially and statistically significant. An increase in the intensity of observation more than doubles legislators' spending on local public goods, suggesting higher-integrity elections improves spending on public works. The *right* panel of Figure 2 shows the results for spending on private goods. The average spending in low and high AIO constituencies are 9.6 (s.e. 2.1) and 10.3 (s.e. 1.1), respectively. The 95 percent CI around the ITT effect suggests that the difference in spending between low and high are not statistically significant. This implies that intense election observation does not lead to significant increase (or decrease) in spending on private goods. In sum, the findings indicate that an increase in the quality of elections, induced by increase election monitoring, raises the responsiveness of politicians to constituents' demands for public goods.

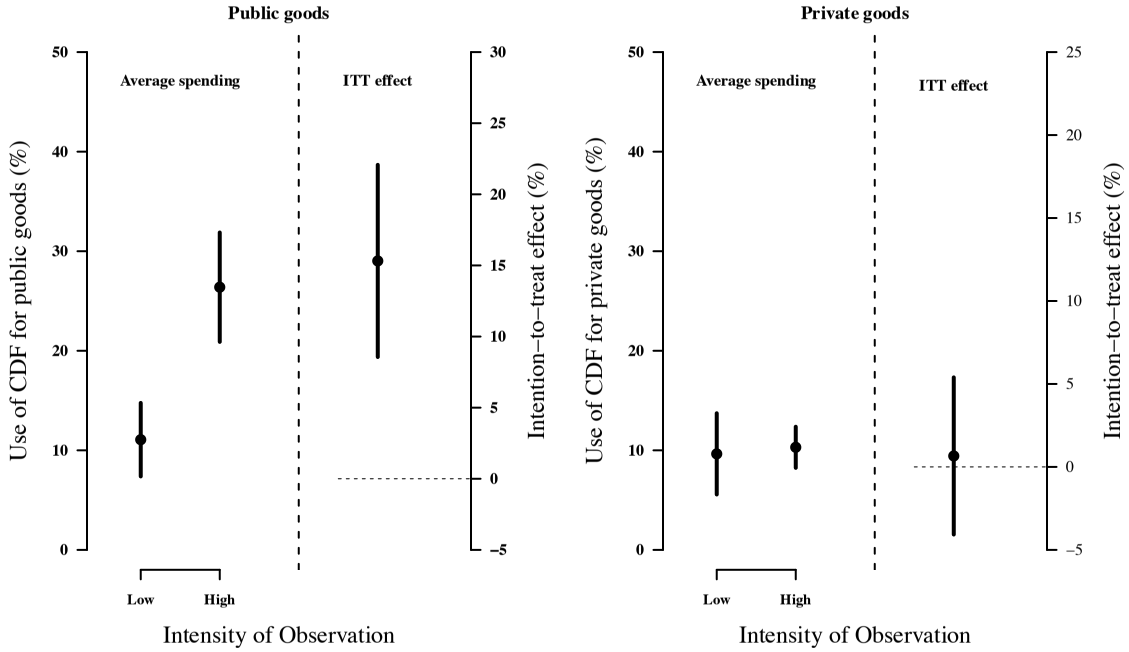

Figure 2: Compared to MPs elected in low-intensely monitored constituencies, MPs elected in high-intensely monitored constituencies spent a higher proportion of their available CDFs on public goods, but a similar proportion of funds on private goods for constituents.

Notes: Figure 2 shows results of MPs' use of CDFs for local public goods (left panel) and private goods (left panel) for constituents. In both cases, the left sides of the figures displays the average for constituencies in each treatment condition along with 95% confidence intervals. The right sides of each panel shows the ITT effect estimates as the difference-in-means between low and high intensely monitored constituencies. Robust standards errors (HC2) are used to generate the 95% intervals around these ITT estimates.

The above results on CDF spending support MPs' self-reported frequency of visits to their constituencies and the activities they prioritize when they visit, which are used in the literature as indicators of constituency services. In section G of the Appendix A, I show that legislators elected in intensely-monitored elections report spending more time in their constituencies compared to those elected in constituencies with proportionally fewer observers (34 percent in low and 43 percent in high). Also, compared to their counterparts in low intensely monitored electoral districts, these legislators were more likely to report that they organize monthly meetings to listen to constituents' needs (40 vs. 70 percent of MPs in low and high, respectively), and that they spend a significant proportion of their time inspecting constituency development projects when in their constituency (10 vs. 30 percent). Together, these results indicate that MPs elected through intensely monitored elections work harder in providing local public goods.

5.3 Do legislators substitute for legislative work with constituency services?

One possible implication of the above findings is that improvement in election quality might lead legislators to shirk on their equally important roles as legislators in parliament and overseers of the executive, since constituency service may be more visible than lawmaking and oversight functions (Ashworth and Bueno de Mesquita, 2006). This potential trade-off is of particular importance in this study because I find that cleaner elections increase levels of constituency service.

To examine this potential substitution effect, I estimate the ITT effect of high AIO on legislator absence at Parliamentary meetings. Ghana's Parliament meets four times a week (Tuesday to Friday).[34] For each session, an MP may be present, absent with permission, or absent without permission. Using Parliamentary Hansards, I code legislators' absence (without permission) for 346 parliamentary meetings between January 2013 and October 2016.[35] I compare the absence rates for legislators elected from constituencies that received low and high levels of observation.

I find that intense election observation has no effect on MPs' absence rates in Parliamentary sessions. Table 3 shows the average absence rate in the full sample in Column (1), and in low and high AIO constituencies in Columns (2) and (3), respectively. Standard errors of these estimates are shown in parentheses. The results show that MPs in the sample were absent about a quarter (26 percent) of the time during their four-year terms in office, on average. The absence rate was 25.4 and 26.2 percent in low and high AIOs, respectively. The difference-in-means estimate indicates no significant difference in the absence rates among legislators across the two treatments.

These results suggest that higher-quality elections do not cause MPs to shirk or improve on their legislative duties (at least concerning attending parliamentary meetings). The results may be explained by the fact that MPs can undertake the delivery of constituency service when they visit their constituencies during the weekend and on Mondays, when Parliament is not is session, or during their recess, when many of them go to live in their constituencies.

[34] MPs must seek permission from the Speaker to excuse themselves from these meetings (Article 97(1c), 1992 Constitution).

[35] The rate of absence with permission was about three percent and including such absences does not impact the results.

		Intensity of Observation		
	Full sample	Low	High	ITT
	(1)	(2)	(3)	(4)
Average absence rate	0.260	0.254	0.262	0.009
	(0.019)	(0.030)	(0.023)	(0.039)
N	60	13	47	

Table 3: Similar absence rates in parliament among MPs elected from low and high intensely- monitored constituencies

Notes: Table 3 reports the intention-to-treat effect of intensity of observation on the absence of MPs from Parliamentary sessions. Columns (1)- (3) shows the means and standard errors for absence rate in the full sample, and the low and high intensities, respectively. Columns 4 reports the average ITT effect. Each unit is weighted by the inverse of its treatment probability. Robust standard errors are reported in parentheses. Significance level indicated by $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$ are based on two-sided hypothesis test.

6 Exploring the causal mechanism between election quality and responsiveness

To my knowledge, the findings presented above provide the first causal evidence that improvements in the quality of elections, as induced by election observation, improve political responsiveness regarding constituency service. The results, however, raise a second order question. What might explain the causal relationship between election observation and incumbents' performance in office? I have argued above that election observation may strengthen the electoral connection by empowering citizens to either *select* a preferred candidate or *sanction* a poorly-performing incumbent or both. To examine these possible mechanisms, I first draw on features of the initial randomization of intensity of election observation (AIOs), electoral outcomes, and data collected through interviews with 47 out of the 60 MPs in the study. Second, and importantly, I report results from randomizing letters to 30 (of 60) MPs in the initial sample that informed them to expect intense monitoring (EIO) in the next elections.

Theoretically, election fraud may undermine citizen's ability to select competent or service-oriented politicians at two stages. First, Besley (2005) argues that for political selection to work, quality candidates must be attracted to contest the polls, succeed in these elections, and be rewarded with reelection. The prospects of fraudulent elections can discourage quality candidates from entering the race in the first place. Second, rigging on election day would reduce the chances that the candidate for whom most voters cast their ballot wins.

While selection is a plausible mechanism, I argue that it may only play a minimal role in explaining the behavior of incumbents in this case for two main reasons. First, the intensity of election observation was not announced in constituencies ahead of the 2012 elections when the initial experiment was implemented. Thus, the treatment could not have influenced the candidate pool in the first stage of selection. In fact, as I show in Table B.2 in Appendix A, an equal number of candidates contested across the different treatment conditions. Second, although I show in my analysis, here and in Asunka et al. (2017), that the presence of observers reduced the level of fraud and violence at polling stations, I do not believe the effects were enough to affect who eventually won the elections at the constituency level (second stage). While the treatment reduced the vote margins at the constituency level (results not shown), especially in competitive districts, the reduction is not statistically significant. Also, the treatment did not produce legislators who were qualitatively different, on average, across multiple characteristics such as education, age, party affiliation, or term-in-office as I show in Table H.1 in Appendix H. Obviously, voters' choice may have been influenced by other candidate features that I do not capture here. However, based on the empirical evidence presented, the treatment is unlikely to have a major influenced on responsiveness through selecting "quality" politicians.

Turning to the *sanction* mechanism, I provide tentative evidence to suggest that it provides a plausible explanation for incumbent's behavior in this study. I argue that, for election observation at time $t-1$, to affect the performance of incumbents in time t, during her tenure in office, at least two conditions must hold. First, incumbents must be aware of the intensity of election observation in their constituencies in the prior election (at time $t-1$) and believe that election observation was effective at reducing electoral fraud.

Second, incumbents must believe that the intensity of election observation in their constituencies will be repeated during their re-election race (at time $t+1$), reducing their ability to rig.

To test the first condition, I conducted interviews with MPs in the study sample to check if they became aware of the intense observation in their constituencies. I asked them whether they saw observers at polling stations they visited during the 2012 polls. I find a positive association between a higher AIO and MPs reporting that they saw observers. A higher concentration of observers in a constituency increased the probability that an MP reports that he or she personally saw an observer at polling stations they visited by about 17 percentage points (41.67 percent in low compared to 58.82 percent high).[36] Moreover, MPs elected from intensely-monitored elections report that a higher proportion of polling stations (28 percent) were monitored in their constituencies, on average, compared to those who had fewer monitors (who reported only 13 percent of stations were monitored), which represents a 15 percentage point increase.[37] These estimates are similar to the empirical saturation of monitors deployed, on average, as shown in Table H.3 in Appendix H. While these results are large, the estimates are not statistically significant at conventional levels. However, these results, estimated almost three years after the intervention, provide suggestive evidence that incumbents became aware of the significant presence of observers in their constituencies during the elections in 2012. I argue that such awareness coupled with the reduction in vote shares induced by observers indicates to MPs that they cannot rely on future rigging.

Testing the second condition that MPs' past experiences influences their future beliefs is, however, challenging. It is not clear that incumbents' experiences with observers in their constituencies at time $t-1$ will automatically shape their beliefs about the intensity of observation in time $t+1$. While we can safely assume that MPs would expect some future monitoring in their constituencies because CODEO, Ghana's domestic election observation group, is credibly committed to observing each elections, we cannot be certain about the actual intensity of observation that MPs would expect. Furthermore, we cannot be sure that these expectations map on to the treatment assignment in the 2012 elections. A randomized belief about future monitoring would allow me to make such causal claims about the sanctioning mechanism.

Therefore, to examine whether expectations of future sanctioning through a fairer election boosts incumbent's responsiveness, I turn to the outcome of my follow-up experiment that randomized letters to 30 of the initial 60 MPs a year before the 2016 elections as described in section 3. Table 4 presents the outcome of the experiment.[38] Column (1) shows the the average proportion of CDF spent in 2016 by incumbents elected in low-intensely-monitored elections in 2012 who received a letter or not from me to expect more observers during their impending reelection race. Column (2) shows the results for MPs elected in intensely-monitored elections. The change in spending among these set of MPs (conditional effect of the letters on spending) are shown below with standard errors presented in parentheses. Further, Panel A presents results for total spending (*utilization*) while Panels B and C show the results for spending on local public goods

[36] See Table H.2 in Appendix H.

[37] See Table H.3 in Appendix H. However, only 18 MPs provided a response to this survey question and thus this result is only suggestive.

[38] See Table I.1 in Appendix I for actual amounts of spending.

and private benefits, respectively. It should be noted that in all types of spending, the average proportion of funds spent by incumbents elected in low and high AIOs who did not receive the letter (EIO) are similar to those reported in the full sample in section 5. Consistent with expectation, in Panel A, the results show that receiving a letter to expect future high monitoring increases the proportion of CDF spent in 2016 by 5.9 and 4.6 percentage points for incumbents elected in low and high AIOs, respectively. These effects are large (although not statistically significant), representing about 23 and 10 percent increase, respectively. Moreover, while, in 2016, incumbents who were merely elected in intensely-monitored elections increased their CDF spending by 21.1 percentage points, those who also received a letter to expect future high monitoring increased their payouts to 25.8, a 4.7 percentage points increase (an 18 percent rise). I suggest that these letters may have reinforced the initial treatment and generated further fear of future sanction through fairer elections, and thus the further improvements in effort.

Disaggregating these result into public goods (Panel B) and private benefits (Panel C), I find that a rise in payments to individual requests drives the increase in CDF spending. Specifically, while MPs who received the letter may not have substantially increased, if not decreased (in the case of those elected in low treatment), their expenditure on public goods, both types of incumbents raised their level of spending on private goods. Specifically, for MPs who were elected in low AIOs, sending them a letter boosted their spending on individual benefits by 4.9 percentage points, a 58 percent increase. Those in high-intensity spent 3.2 percentage points more, a 30 percent increase, and also represents more than one-and-half fold increase in their expenditure on private benefits if they had not received the letter.

In interpreting these results, I argue that the timing of the EIO treatment may explain the high spending on private benefits. MPs had a year to respond to the treatment. While it may take a while to plan and execute another public infrastructure project, it makes minimal efforts to underwrite constituents' school fees, medical bills, and grant financial support to individuals to start businesses. While such expenditures raise concerns over clientelistic behavior during an election year, it is consistent my argument that expectations of future monitoring increase effort.

Together, these results provide tentative causal evidence that expectation of high election-day monitoring increase the responsiveness of incumbents. A well-powered designed is required to provide a firm grounds for these results.

Type of spending	Expected IO	Intensity of observation Low (1)	 High (2)
Utilization (total)			
	Received letter	0.318	0.517
		(0.068)	(0.071)
	No letter sent	0.259	0.471
		(0.045)	(0.062)
	Conditional ATEs	**0.059**	**0.046**
	of EOI (letters)	(**0.082**)	(**0.094**)
Public Goods			
	Received letter	0.092	0.282
		(0.022)	(0.056)
	No letter sent	0.118	0.266
		(0.024)	(0.045)
	Conditional ATEs	-0.026	0.016
	of EOI (letters)	(0.033)	(0.072)
Private Goods			
	Received letter	0.134	0.137
		(0.039)	(0.029)
	No letter sent	0.084	0.105
		(0.038	(0.025)
	Conditional ATEs	0.049	0.032
	of EOI (letters)	(0.055)	0.038)

Table 4: Effect of expectation of intense election monitoring conditional on prior intensity of observation

Notes: Table 4 shows the proportion of legislator spending in each experimental cell. It also shows the effect of expectation of intense observation on spending conditional on prior intensity of election monitoring in MPs' constituencies.

7 Conclusion

In this study, I described a field experiment that randomized the intensity of election monitoring across constituencies in Ghana's 2012 general elections that I leverage to examine the effect of election integrity on political responsiveness. I argue that because higher intensity election observation reduces the ability of politicians to commit election-day fraud, it incentivizes incumbents to improve their efforts to meet citizens' needs. The random deployment of observers at different intensities across constituencies serves as an exogenous instrument for election quality and allows me to interpret as causal any significant difference in performance between incumbents elected in low-intensity monitored districts and those elected from constituencies with a higher concentration of election observers.

Using original data on MPs' allocation of their CDFs as my measure of responsiveness, I demonstrate that fair elections produce concrete benefits for citizens. I find that representatives elected from intensely monitored elections spend more of their available funds. Since MPs need to exert a significant amount of effort to use these resources, I interpret higher levels of spending as indicative of improved responsiveness. Disaggregating MPs' spending by payouts to private benefits versus local public works, I find that higher intensity of observation increases the provision of public infrastructure and services and has no effect on the supply of private goods. The interpretation of this finding is twofold. First, this result implies that fair elections incentivize incumbents to provide public goods that benefit whole communities. Second, fairer elections do not change MPs' provision of private benefits to constituents. If we are to interpret the provision of private benefits, in this context, as clientelistic, then fairer elections seem to have no effect on such exchanges in the case of CDF spending.

Taken together, these results provide evidence that election integrity is causally related to responsiveness regarding local public goods. Moreover, I find evidence that indicates that quality elections do not encourage politicians to shirk their parliamentary duties (attendance in parliament). Preliminary experimental evidence suggests that politicians' expectations of future intense monitoring elections drive these results, which is consistent with the sanctioning mechanism of electoral accountability.

The results of this research hold implications for both pro-democracy actors and scholars of democratic consolidation and electoral fraud. For promoters of democracy, these results suggest that the systematic monitoring of elections by local civil society groups plays a significant role in promoting electoral integrity, corroborating earlier findings. Moreover, election observation eventually promotes democratic accountability and reduces corruption. However, Ghana's well-established civil society groups, which regularly undertake election monitoring during national and local elections and make the threat of electoral sanction more credible, may drive these results. Accordingly, efforts to strengthen such independent civil society organizations may be required to achieve similar results elsewhere. Nevertheless, my findings are important in contexts where elections remain the primary mechanism through which citizens demand accountability from their representatives. My results suggest that, in these settings, attention must be paid not only to the regular conduct of elections, but also to strengthening their integrity. In light of my findings, scholars should also

carefully consider the impacts of interventions aimed at reducing electoral fraud, in the pre-election and election day periods, and on downstream political outcomes that are germane to citizen welfare. This research agenda will advance our understanding of electoral fraud and democratic accountability in new democracies.

References

Achen, Christopher H and Larry M Bartels. 2016. *Democracy for realists: Why elections do not produce responsive government*. Princeton University Press.

Annan, Kofi, Ernesto Z. Ponce de Léon, Martti Ahtisaari, Madeleine K. Albright et al. 2012. "Deepening democracy: a strategy for improving the integrity of elections worldwide. Report of the Global Commission on Elections." *Democracy and Security, Stockholm* .

Arrow, Kenneth Joseph. 1963. *Social choice and individual values*. New York, NY: John Wiley & Sons, Inc.

Asante, Kojo P., Victor Brobbey and George Ofosu. 2011. "Responding to Constituent's Demands: Survival Strategies of Legislators in Ghana's Fourth Republic." *Available at SSRN 2353296* .

Ashworth, Scott. 2012. "Electoral accountability: recent theoretical and empirical work." *Annual Review of Political Science* 15:183–201.

Ashworth, Scott and Ethan Bueno de Mesquita. 2006. "Delivering the goods: Legislative particularism in different electoral and institutional settings." *Journal of Politics* 68(1):168–179.

Asunka, Joseph, Sarah Brierley, Miriam Golden, Eric Kramon and George Ofosu. 2017. "Electoral Fraud or Violence? The Effect of Observers on Party Manipulation Strategies." *British Journal of Political Science* .

Austen-Smith, David and Jeffrey Banks. 1989. "Electoral accountability and incumbency." *Models of strategic choice in politics* 121:122.

Baird, Sarah, Aislinn Bohren, Craig McIntosh and Berk Ozler. 2012. "Designing experiments to measure spillover and threshold effects." Unpublished.

Baldwin, Kate. 2013. "Why vote with the chief? Political connections and public goods provision in Zambia." *American Journal of Political Science* 57(4):794–809.

Barkan, Joel D. and Robert Mattes. 2014. Why CDFs in Africa? In *Distributive Politics in Developing Countries: Almost Pork*, ed. Mark Baskin and Michael L. Mezey. Lexington Books pp. 27–47.

Bates, Robert H. 2008. *When Things Fell Apart: State Failure in Late-Century Africa*. Cambridge University Press.

Becker, Gary S and George J Stigler. 1974. "Law enforcement, malfeasance, and compensation of enforcers." *The Journal of Legal Studies* 3(1):1–18.

Berman, Eli, Michael J. Callen, Clark Gibson and James D Long. 2014. Election fairness and government legitimacy in Afghanistan. Technical report National Bureau of Economic Research.

Besley, Timothy. 2005. "Political selection." *The Journal of Economic Perspectives* 19(3):43–60.

Birch, Sarah. 2008. "Electoral institutions and popular confidence in electoral processes: A cross-national analysis." *Electoral Studies* 27(2):305–320.

Birch, Sarah. 2010. "Perceptions of electoral fairness and voter turnout." *Comparative Political Studies* 43(12):1601–1622.

Bratton, Michael. 2013. *Voting and democratic citizenship in Africa*. Lynne Rienner Publishers chapter Where do elections lead in Africa?, pp. 17–38.

Bruhn, Miriam and David McKenzie. 2009. "In pursuit of balance: Randomization in practice in development field experiments." *American economic journal: applied economics* 1(4):200–232.

Callen, Michael, Clark C Gibson, Danielle F Jung and James D Long. 2016. "Improving electoral integrity with information and communications technology." *Journal of Experimental Political Science* 3(01):4–17.

Chernozhukov, Victor and Christian Hansen. 2008. "The reduced form: A simple approach to inference with weak instruments." *Economics Letters* 100(1):68–71.

Chong, Alberto, Ana L De La O, Dean Karlan and Leonard Wantchekon. 2014. "Does corruption information inspire the fight or quash the hope? A field experiment in Mexico on voter turnout, choice, and party identification." *The Journal of Politics* 77(1):55–71.

Christensen, Darin and Simon Ejdemyr. 2016. "Elections and Shirking: An Empirical Reappraisal." Unpublished.

Collier, Paul and Anke Hoeffler. 2015. "Do elections matter for economic performance?" *Oxford Bulletin of Economics and Statistics* 77(1):1–21.

Daxecker, Ursula E. 2014. "All quiet on election day? International election observation and incentives for pre-election violence in African elections." *Electoral Studies* 34:232–243.

Diaz-Cayeros, Alberto, Federico Estévez and Beatrix Magaloni. N.d. "forthcoming. Strategies of Vote Buying: Democracy, Clientelism, and Poverty Relief in Mexico.".

Enikolopov, Ruben, Vasily Korovkin, Maria Petrova, Konstantin Sonin and Alexei Zakharov. 2013. "Field experiment estimate of electoral fraud in Russian parliamentary elections." *Proceedings of the National Academy of Sciences* 110(2):448–452.

Eulau, Heinz and Paul D Karps. 1977. "The puzzle of representation: Specifying components of responsiveness." *Legislative Studies Quarterly* pp. 233–254.

Fearon, James D. 1999. Electoral accountability and the control of politicians: selecting good types versus sanctioning poor performance. In *Democracy, Accountability, and Representation*, ed. Adam Przeworski, Susan C. Stokes and Bernard Manin. New York: Cambridge University Press pp. 55–97.

Fenno, Richard F. 1978. *Home style: House members in their districts*. Pearson College Division.

Ferejohn, John. 1986. "Incumbent performance and electoral control." *Public Choice* 50(1):5–25.

Ferraz, Claudio and Frederico Finan. 2011. "Electoral accountability and corruption: Evidence from the audits of local governments." *The American Economic Review* 101(4):1274–1311.

Fiorina, Morris P. 1974. *Representatives, roll calls, and constituencies*. Lexington Books.

Fujiwara, Thomas and Leonard Wantchekon. 2013. "Can informed public deliberation overcome clientelism? Experimental evidence from Benin." *American Economic Journal: Applied Economics* 5(4):241–255.

Galasso, Vincenzo and Tommaso Nannicini. 2011. "Competing on good politicians." *American Political Science Review* 105(01):79–99.

Gyimah-Boadi, Emmanuel. 2007. *Votes, money and violence: political parties and elections in Sub-Saharan Africa*. Nordiska Afrikainstitutet; Kwazulu-Natal Press, South Africa chapter Political parties, elections and patronage: Random thoughts on neo-patrimonialism and African democratization, pp. 21–33.

Gyimah-Boadi, Emmanuel. 2009. "Another step forward for Ghana." *Journal of Democracy* 20(2):138–152.

Hall, Thad E., Susan Hyde and Beth Wellman. 2015. "Election Quality and Public Confidence in Political Institutions: Revisiting the Orange Revolution." Working paper.

Harding, Robin. 2015. "Attribution and accountability: Voting for roads in Ghana." *World Politics* 67(04):656–689.

Harris, J. Andrew and Daniel N. Posner. 2017. "(Under what conditions) Do politicians reward their supporters? Evidence from Kenya's Constituency Development Fund.".

Hartlyn, Jonathan, Jennifer McCoy and Thomas M Mustillo. 2008. "Electoral Governance Matters Explaining the Quality of Elections in Contemporary Latin America." *Comparative Political Studies* 41(1):73–98.

Heitshusen, Valerie, Garry Young and David M Wood. 2005. "Electoral Context and MP Constituency Focus in Australia, Canada, Ireland, New Zealand, and the United Kingdom." *American Journal of Political Science* 49(1):32–45.

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

Hyde, Susan D. 2007. "The observer effect in international politics: Evidence from a natural experiment." *World Politics* 60(01):37–63.

Hyde, Susan D. 2008. "The Obsever Effect in International Politics:Evidence from a Natural Experiment." *World Politics* 60(1):37–63.

Hyde, Susan D. 2010. "Experimenting in democracy promotion: international observers and the 2004 presidential elections in Indonesia." *Perspectives on Politics* 8(02):511–527.

Hyde, Susan D. 2011. *The Pseudo-Democrat's Dilemma: Why Election Monitoring Became an International Norm*. Cornell University Press.

Hyde, Susan and Nikolay Marinov. 2008. "Does information facilitate self-enforcing democracy? The role of international election monitoring." *Unpublished manuscript, Yale University* .

Hyden, Goran. 2010. "Political accountability in Africa: is the glass half-full or half-empty?" *Africa Power and Politics Programme Working Paper Series* (6).

Ichino, Nahomi and Matthias Schündeln. 2012. "Deterring or displacing electoral irregularities? Spillover effects of observers in a randomized field experiment in Ghana." *The Journal of Politics* 74(01):292–307.

Jockers, Heinz, Dirk Kohnert and Paul Nugent. 2010. "The successful Ghana election of 2008: a convenient myth?" *The Journal of Modern African Studies* 48(01):95–115.

Keefer, Philip and Stuti Khemani. 2009. "When Do Legislators Pass on Pork? The Role of Political Parties in Determining Legislator Effort." *American Political Science Review* 103:99–112.

Kelley, Judith G. 2012. *Monitoring Democracy: When International Election Observation Works, and Why It Often Fails*. Princeton: Princeton University Press.

Kerr, Nicholas. 2013. "Popular evaluations of election quality in Africa: evidence from Nigeria." *Electoral Studies* 32(4):819–837.

Kingdon, John W. 1989. *Congressmen's voting decisions*. University of Michigan Press.

Kramon, Eric. 2013. "Vote Buying and Electoral Turnout in Kenya." *Voting and Democratic Citizenship in Africa, Boulder/Colorado: Lynne Rienner* .

Lindberg, Staffan I. 2010. "What accountability pressures do MPs in Africa face and how do they respond? Evidence from Ghana." *The Journal of Modern African Studies* 48(01):117–142.

Lindberg, Staffan I. and Minion K. C. Morrison. 2008. "Are African voters really ethnic or clientelistic? Survey evidence from Ghana." *Political Science Quarterly* 123(1):95–122.

Mansbridge, Jane. 2009. "A "Selection Model" of Political Representation." *Journal of Political Philosophy* 17(4):369–398.

Mayhew, David R. 1974. *Congress: The electoral connection*. Yale University Press.

Miller, Warren E. and Donald E. Stokes. 1963. "Constituency influence in Congress." *American Political Science Review* 57(01):45–56.

Mozaffar, Shaheen. 2002. "Patterns of electoral governance in Africa's emerging democracies." *International Political Science Review* 23(1):85–101.

Mozaffar, Shaheen, James R. Scarritt and Glen Galaich. 2003. "Electoral institutions, ethnopolitical cleavages, and party systems in Africa's emerging democracies." *American Political Science Review* 97(03):379–390.

Ninsin, Kwame A. 2016. *Issues in Ghana's Electoral Politics*. Dakar: CODESRIA chapter Elections and Representation in Ghana's Democracy, pp. 115–134.

Norris, Pippa. 2014. *Why electoral integrity matters*. Cambridge University Press.

Olken, Benjamin A. 2007. "Monitoring corruption: evidence from a field experiment in Indonesia." *Journal of Political Economy* 115(2):200–249.

Opalo, Ken. 2017. "Institutional Origins of Incumbency Advantage: Evidence from Legislative Elections in Kenya, 1963-2007.".

Pastor, Robert A. 1999. "The role of electoral administration in democratic transitions: Implications for policy and research." *Democratization* 6(4):1–27.

Peress, Michael. 2013. "Candidate positioning and responsiveness to constituent opinion in the US House of Representatives." *Public Choice* 156(1-2):77–94.

Posner, Daniel N. 2005. *Institutions and ethnic politics in Africa*. Cambridge University Press.

Schiller, Wendy J. 1995. "Senators as Political Entrepreneurs: Using Bill Sponsorship to Shape Legislative Agendas." *American Journal of Political Science* 39(1):186–203.

Searing, Donald. 1994. *Westminster's world: understanding political roles*. Harvard University Press.

Sjoberg, Fredrik M. 2012. "Making voters count: Evidence from field experiments about the efficacy of domestic election observation." *Columbia University Harriman Institute Working Paper* (1).

Snyder, Mark. 1987. *Public appearances, private realities: The psychology of self-monitoring*. W.H. Freeman & Company.

Stratmann, Thomas and Martin Baur. 2002. "Plurality Rule, Proportional Representation, and the German Bundestag: How Incentives to Pork-Barrel Differ across Electoral Systems." *American Journal of Political Science* pp. 506–514.

Straus, Scott and Charlie Taylor. 2012. Democratization and Electoral Violence in Sub-Saharan Africa, 1990–2008. In *Voting in Fear*, ed. Dorina A. Bekoe. Washington, D.C.: United States Institute of Peace.

van de Walle, Nicolas. 2003. "Presidentialism and clientelism in Africa's emerging party systems." *The Journal of Modern African Studies* 41(02):297–321.

van de Walle, Nicolas. 2007. "Meet the new boss, same as the old boss? The evolution of political clientelism in Africa." *Patrons, clients and policies: Patterns of democratic accountability and political competition* pp. 50–67.

van Ham, Carolien. 2009. Beyond Electoralism? Electoral fraud in third wave regimes PhD thesis University of Leiden.

Van Zyl, Albert et al. 2010. What Is Wrong with the Constituency Development Funds? Technical report.

Vicente, Pedro C. and Leonard Wantchekon. 2009. "Clientelism and vote buying: lessons from field experiments in African elections." *Oxford Review of Economic Policy* 25(2):292–305.

Vieta, Kojo T. 2013. *Know Your MPs (2013-2017)*. Flagbearers Publishers.

Wantchekon, Leonard. 2003. "Clientelism and voting behavior: Evidence from a field experiment in Benin." *World Politics* 55(03):399–422.

Wawro, Gregory. 2001. *Legislative entrepreneurship in the US House of Representatives*. University of Michigan Press.

Weitz-Shapiro, Rebecca. 2012. "What wins votes: Why some politicians opt out of clientelism." *American Journal of Political Science* 56(3):568–583.

Young, Daniel J. 2009. *Support You Can Count On?: Ethnicity, Partisanship and Retrospective Voting in Africa*. Institute for Democracy in South Africa.

A Appendix

	National			Sample region			Study constituencies		
Statistic	Mean	St. Dev.	N	Mean	St. Dev.	N	Mean	St. Dev.	N
# polling stations	94.553	32.276	275	96.074	30.707	122	99.333	30.049	60
Voters	51,024.700	23,702.350	275	52,217.480	20,654.510	122	53,546.850	19,421.790	60
Candidates	4.682	1.003	275	4.496	0.887	122	4.517	0.868	60
Distance (Km)	239.142	178.880	256	186.356	63.184	104	181.860	68.037	53
Ln Area (Km^2)	5.946	1.584	275	5.873	1.414	122	5.996	1.340	60
Ln Voter Density (Area (Km^2)/# voters)	4.789	1.850	275	4.910	1.572	122	4.812	1.501	60
% rural	0.564	0.301	275	0.587	0.291	122	0.557	0.290	60
% electricity	0.542	0.230	275	0.586	0.188	122	0.584	0.177	60
% households with electric/gas	0.120	0.142	275	0.112	0.112	122	0.111	0.110	60
% Cement walls	0.480	0.265	275	0.532	0.227	122	0.539	0.210	60
% Muslim	0.183	0.212	275	0.105	0.063	122	0.107	0.074	60
% population in Agric.	0.490	0.280	275	0.463	0.247	122	0.465	0.240	60
% Ashanti	0.140	0.229	275	0.256	0.295	122	0.257	0.303	60
% Fante	0.097	0.183	275	0.165	0.250	122	0.147	0.231	60
% Ewe	0.132	0.219	275	0.188	0.300	122	0.197	0.318	60
% Primary education or less	0.902	0.072	275	0.905	0.062	122	0.902	0.068	60
% employed	0.521	0.057	275	0.498	0.047	122	0.495	0.046	60

Table B.1: Study constituencies (60) are regionally and nationally representative

Notes: Table B.1 shows the summary statistics constituency characteristics. I obtained data on the electoral characteristics of constituencies from Ghana's Electoral Commission. To calculate distances from the capital to constituencies, I use the `geocode` function in the `ggmap` package in R to take the geocordinates of constituency capitals. Using the geo-coordinates of Ghana's parliament, I calculated the euclidean distances between constituency capitals and the Parliament. Data on the socio-economic characteristics of constituencies are from Ghana's 2010 national census.

B Summary statistics of sample constituences and covariate balance statistics

	Intensity of observation			
Variable	Low	High	Difference	P-value
N	(13)	(47)		
Part A: Constituency electoral characteristics				
# polling stations	95.462	100.404	4.943	0.597
# registered voters (2012)	53,021.080	53,692.280	671.200	0.919
Valid votes (2012)	41,183.310	40,259.710	-923.595	0.835
# candidates 2012 polls	4.500	4.521	0.021	0.944
Area (Km. sq.)	526.984	762.376	235.392	0.127
Distance to constituency	177.636	182.966	5.331	0.829
# voters per Km. sq.	786.787	422.508	-364.279	0.380
Part B: Constituency characteristics-district census				
% rural population	0.523	0.566	0.044	0.654
% households with electricity	0.591	0.582	-0.008	0.884
% households with electric/gas	0.117	0.109	-0.008	0.827
% Cement walls	0.564	0.532	-0.032	0.655
% Muslim	0.099	0.110	0.011	0.581
% population in Agric.	0.453	0.468	0.015	0.860
%Ashanti	0.303	0.244	-0.060	0.559
%Fante	0.125	0.153	0.028	0.684
%Ewe	0.190	0.199	0.009	0.932
% Primary education or less	0.899	0.903	0.005	0.860
% employed	0.494	0.496	0.002	0.887

Table B.2: Covariate balance across three treatments

Notes: Part A of Table B.2 shows the covariate balance for electoral and geographic variables across treatments. To calculate distances from the capital to constituencies, I use the `geocode` function in the `ggmap` package in R to take the geocordinates of constituency capitals. Using the geo-coordinates of Ghana's parliament, I calculated the euclidean distances between constituency capitals and the Parliament. Part B of Table B.2 shows balance for socio-economic characteristics per Ghana's 2010 Population and Housing Census across treatment. The group means and p-values corresponding to the t-test statistic of all two treatment conditions are shown in the last column of the table.

Variable	Incument received letter (Treatment) No N= 30	Yes N= 30	Difference-in-means	$P-value$
# Polling stations	103.767	94.900	-8.867	0.257
# Voters	54,564.300	52,529.400	-2,034.900	0.689
Proportion of monitored ps (2012)	0.224	0.216	-0.008	0.696
Valid votes (2012)	41,277.130	39,642.520	-1,634.617	0.645
# Candidates (2012)	4.467	4.567	0.100	0.659
Vote margin (2012)	0.294	0.341	0.046	0.506
Turnout (2012)	0.775	0.761	-0.014	0.262
Term of MP	1.867	1.867	0	1
Area (km. sq.)	749.573	673.176	-76.398	0.654
Distance to constituency	192.785	169.624	-23.161	0.223
Rural population	0.590	0.523	-0.067	0.374
Proportion of pop. with electricity	0.575	0.593	0.019	0.684
Fuel (electric and gas)	0.100	0.122	0.023	0.430
Cement walls	0.520	0.559	0.039	0.474
Muslim population	0.119	0.096	-0.024	0.214
Population in Agriculture	0.483	0.446	-0.037	0.557
%Ashanti	0.264	0.249	-0.015	0.851
%Fante	0.163	0.130	-0.033	0.585
%Ewe	0.175	0.219	0.044	0.593
%Dagomba	0.008	0.007	-0.002	0.577
Education (primary or less)	0.909	0.896	-0.013	0.450
Employed	0.500	0.490	-0.009	0.436
NDC (incumber party)	0.533	0.500	−0.033	0.718

Table B.3: Balance statistics for letter treatment

Notes: Table B.3 shows the covariate balance for electoral and geographic variables across treatments. To calculate distances from the capital to constituencies, I use the `geocode` function in the `ggmap` package in R to take the geocordinates of constituency capitals. Using the geo-coordinates of Ghana's parliament, I calculated the euclidean distances between constituency capitals and the Parliament. Table B.3 also shows the balance for socio-economic characteristics per Ghana's 2010 Population and Housing Census across treatment. I collected the election day from Ghana's Electoral Commission, and the socio-economic data was compiled using Ghana's 2010 Population and Housing census. I ran 58 iterations of randomization until I obtained a treatment and control group where the smallest p-value associated with the covariates' difference in means was $p\text{-}value \geq 0.21$. This approach is referred to as "big stick" method (Bruhn and McKenzie, 2009).

C Total causal effect of observers on fraud and violence

C.1 Experimental design

C.2 Two-stage randomization of observers

The experimental design involves a two-stage randomization of treatment (i.e., observation). In the first stage, we assigned the 60 constituencies in our study to one of three *intensity of observation (IO)* levels: *low*, *medium*, or *high*. We then randomly sampled 30 percent of polling stations from our selected constituencies to form our study sample. In *low* intensity constituencies, CODEO agreed to send observers to 30 percent of polling stations in the sample. In the *medium* and *high* intensities, CODEO deployed observers to 50 percent and 80 percent of polling places of the study samples, respectively. We assigned the 60 constituencies to

low IO with 20 percent probability and to medium and high IOs with 40 percent probabilities.[39] To estimate spillover effects, we compare average outcomes of fraud measures in control units in the low-intensity observation constituencies to controls in the medium and high electoral districts. Since there are relatively few control stations in the higher intensity constituencies, we assigned more constituencies to the medium and high conditions. This increases our statistical power to detect spillover effects. Accordingly, 13 constituencies are assigned to low IO, while 24 and 23 were assigned to medium and high, respectively. Figure C.1 shows the treatment conditions of constituencies in the sample.

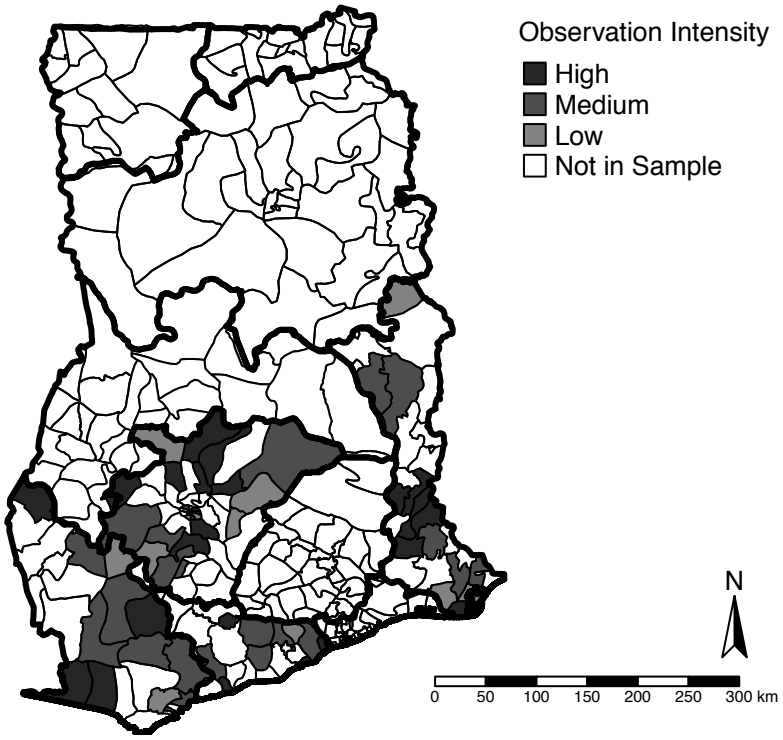

Figure C.1: Map of Ghana: treatment conditions of constituencies

In the second stage, we assigned our sampled polling stations nested within each of the 60 constituencies to treatment (i.e., *observation*) with probabilities based on the intensities assigned to their constituencies in the first stage.[40] There were 2,310 polling stations in the sample and 1,292 were assigned to treatment.

C.3 Measuring the total causal effect of intensity of observation on electoral fraud

To estimate the total average causal effect of observers at the constituency level, TCE, I compare the average fraud and violence outcomes for all stations (treated and control) at medium (high) IO constituencies to the average outcome in control units in low IO constituencies. The control stations in the low IO constituencies

[39] Our decision to adopt these probabilities was based on how we compute spillover effects of observers. See Asunka et al. (2017) for details.

[40] The actual concentration of observers in a constituency is, therefore, lower than the assigned intensities. Let PS represent the total number of polling stations in a constituency and $m \in \{0.3, 0.5, 0.8\}$ represent the assigned intensity of observation. Then the proportion of stations assigned to treatment in a constituency is $m * 0.3 * PS$.

serve as the estimate of the level of fraud in the absence of observers at a given IO taking into account potential spillover effects.[41] Thus, I calculate the $TCE(m)$ as follows:

$$TCE(m) = E(Y_{ij}|M_j = m) - E(Y_{ij}|T_{ij} = 0, M_j = low)$$

where $E(Y_{ij}|M_j = m)$ is the average level of fraud or violence for polling station i located in constituency j with intensity of observation $m \in \{medium, high\}$. $E(Y_{ij}|T_{ij} = 0, M_j = low)$ measures the average outcome for all control stations in low IO constituencies. $T_{ij} = t$ represents the treatment status of polling station i located in constituency j, where $t \in \{\text{treated} = 1, \text{control} = 0\}$. [42]

C.4 First-stage results of treatment

Table C.1 reports the treatment effect of IO on fraud and violence. I include the results for indicators of fraud and violence, *turnout* and *intimidation of voters* during voting, reported in Asunka et al. (2017). I extend these findings to estimate the treatment effect of observation on the vote counts for the major parties: *Logged NDC votes* and *Logged NPP votes*. To be sure, turnout and vote counts for parties are not fraudulent in themselves. These outcomes only serve as indicators of fraud insofar as they systematically vary with randomly placed observers. That is, in the absence of fraud in the form of multiple voting and ballot stuffing, we should expect similar turnout rates and vote counts for parties, on average, in treated (monitored) and control (unmonitored) polling stations.

The last two columns (4 and 5) report the TCEs for increasing the IO from low to medium, and from low to high, respectively. I confirm that increasing the intensity of election observation reduces fraud at polling stations within these constituencies. Specifically, increasing the IO from low to medium reduces turnout by 5.6 percentage points. The treatment decreases turnout by 4.5 percentage points at polling stations in high IO constituencies. Similarly, increasing a constituency's IO from low to high reduces the incidence of intimidation of voters during voting at polling stations by 4.5 percentage points. I find neither substantive nor statistically significant decrease in such incidents in the medium IO constituencies.

Turning to vote counts for the two major parties, I find that an increase in IO reduces both of the main parties' overall vote counts at polling stations within constituencies, on average, which suggests that election observation reduced the ability of candidates and agents from both parties to commit fraud. In particular, I find that increasing the IO from low to high leads to a 14 percent decrease in the (geometric) average

[41] Spillover effects occur when in the presence of observers at a given station, perpetrators of fraud shift their activities to unmonitored stations (i.e., displacement or positive spillover effect) or desist from such acts in unmonitored stations with the assumption of heightened oversight by observers (i.e., deterrence or negative spillover effects). The saturation design helps to account for such potential spillover effects to estimate the unbiased effect of observers. The control polling stations in the low IO constituencies are less susceptible to such spillover effects and thus serve as "uncontaminated" counterfactual units. The direct and spillover effects of observers are presented in Asunka et al. (2017). Here I focus on the overall effect of observers within constituencies, which the relevant quantity of interest. It answers the question: taking the potential (negative and positive) spillover effects of observers, do polling stations in constituencies with higher intensity of observation have lower levels of fraud?

[42] Based on the operational structures of political parties in Ghana, we assume that spillover effects will be confined within constituencies. That is, we assume no interference across constituencies.

number of votes cast for the NPP and 11 percent for the NDC. As suggested above, the two parties have dominated Ghanaian politics since 1996 and have strong organizational capacity on the ground to commit fraud. Therefore, the results suggest that the effects of observation were not confined to candidates from particular parties, providing good grounds to examine the behavior of all legislators irrespective of party affiliation.

In sum, these first-stage results suggest that increasing the intensity of observation in a constituency reduces overall levels of fraud and violence. Further, they justify using IO as an instrument for the integrity of elections.

	Intensity of Observation			Total Causal Effect	
Fraud indicators	Low	Medium	High	Medium	High
Turnout	0.889	0.833	0.841	-0.056**	-0.048**
	(0.022)	(0.010)	(0.008)	(0.024)	(0.024)
Intimidation during voting	0.102	0.098	0.057	-0.004	-0.045*
	(0.025)	(0.012)	(0.008)	(0.028)	(0.026)
Log NPP votes	5.104	5.076	4.952	-0.028	-0.151*
	(0.085)	(0.034)	(0.037)	(0.092)	(0.093)
Log NDC votes	5.255	5.271	5.140	0.016	-0.116*
	(0.056)	(0.026)	(0.029)	(0.062)	(0.063)
N	163	676	766		

Table C.1: Higher-intensity of election observation reduce constituency-level fraud and violence

Notes: I use four indicators of electoral fraud and violence: *turnout*, *NPP votes (log)*, *NDC votes (log)*, and *intimidation during voting*. The unit of analysis is the polling station. For each indicator, Columns 1, 2, and 3 reports the mean and standard errors (in parentheses) for polling stations located in constituencies in low (control units), medium (treated and control units), and high (treated and control units) election observation intensities, respectively. Columns 4 and 5 shows the *Total Causal Effect (TCE)*, the *overall effect* of observers within constituencies monitored at medium and high intensities, respectively. *TCEs* is the difference-in-means estimates for constituencies in low and medium IOs, and in low and high IOs. In calculating these estimates, each unit (polling station) is weighted by the inverse of its treatment probability. Standard errors of the difference-in-means estimates are reported in parentheses. Data source: Asunka et al. (2017). $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

D Treatment letters

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December 16, 2015

CDDRL
Stanford University Encina Hall
Stanford, CA 94305,USA.

Dear [redacted]

As you may recall, I asked during our interview whether you or your agents saw independent election observers at polling stations in your constituency during last years elections. In 2012, I was part of a research team from UCLA that worked with CODEO to study the impact of observers on election day irregularities at a sample of the polling stations in the country. As part of this study, some constituencies were randomly selected to have a higher proportion (about 80 percent) of their polling stations monitored by observers during the polls.

We found that constituencies that had a higher proportion of their polling stations monitored by observers had lower incidence of electoral fraud. This was a credit to domestic election observation and the important role they play in promoting electoral integrity and democracy in Ghana.

To validate our finding, I am seeking to collaborate with CODEO to repeat this study in a random set of constituencies. While I await confirmation to implement this study, I have already selected my sample of constituencies and randomly assigned some to have about 80 percent of stations observed. As a courtesy, I want to inform you that your constituency happened to be one of those that will receive observers at 80 percent of stations.

I will get back in touch with you once I have confirmation that the study will go ahead, but I am at this point very hopeful that it will happen.

Sincerely,

George Ofosu
Doctoral Candidate, UCLA.
Predoctoral Fellow, Stanford University.

Figure D.1: Treatment: letter to Members of Parliament

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EMAIL: ofosu@ucla.edu
April 15, 2016

Hon. [redacted]
Parliament House
Accra.

Dear **Hon.** [redacted]

Thank you for your participation in my MPs' survey last year (November and December, 2015).

As you may recall, I mentioned that I am seeking to collaborate with the Coalition of Domestic Election Observers (CODEO) to study the impact of domestic election observers on election day processes in Ghana's November 2016 general elections. While I await confirmation to implement this study, I have already selected my sample of constituencies and randomly assigned some to have about 80 percent of stations observed by CODEO monitors.

As a courtesy, **I want to remind you that your constituency is one of those that would receive observers at 80 percent of polling stations on election day**.

I will get back in touch with you once I have confirmation that the study will go ahead, but I am at this point very hopeful that it will happen.

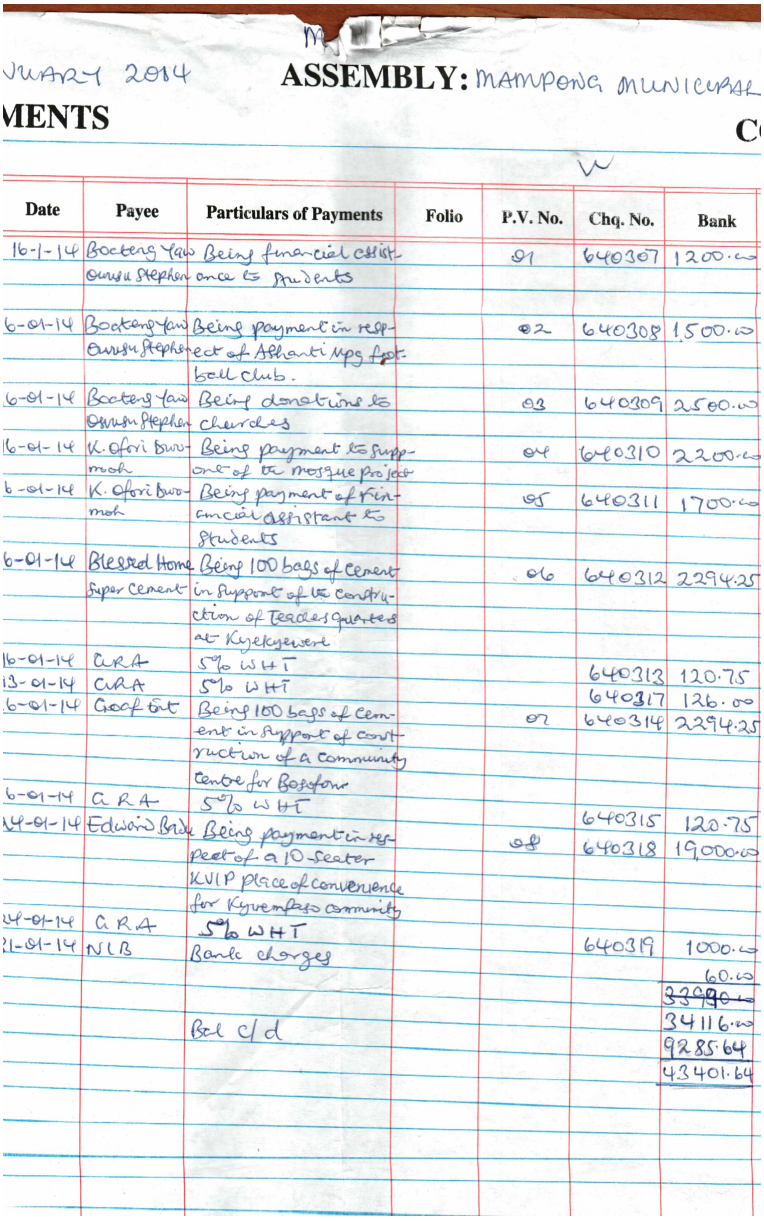
Sincerely,

George Ofosu
Doctoral Candidate, UCLA.
Pre-doctoral Fellow, Stanford University.

Figure D.2: Treatment: follow-up letter to Members of Parliament

E Measuring responsiveness: use of Constituency Development Funds

I use legislators' spending of their state-provided CDFs as my measure of responsiveness regarding constituency service. I use monthly reports of MPs' expenses to record and classify the type of goods and services to which MPs allocate their funds. Figures E.1 and E.2 provide examples of the expense sheets I coded. These records submitted by the local government (District Assembly) of the MPs are available at the Ghana District Assemblies' Common Fund Administration (DACF) at Accra in Ghana. I coded MPs expenses between 2014 and 2016 that were available in the archives of the DACF office. Between this period I coded 2,160 months of expenditure sheets for 60 MPs. Table E.2 shows the six main expenditure types as well as their sub-categories and my coding rule.



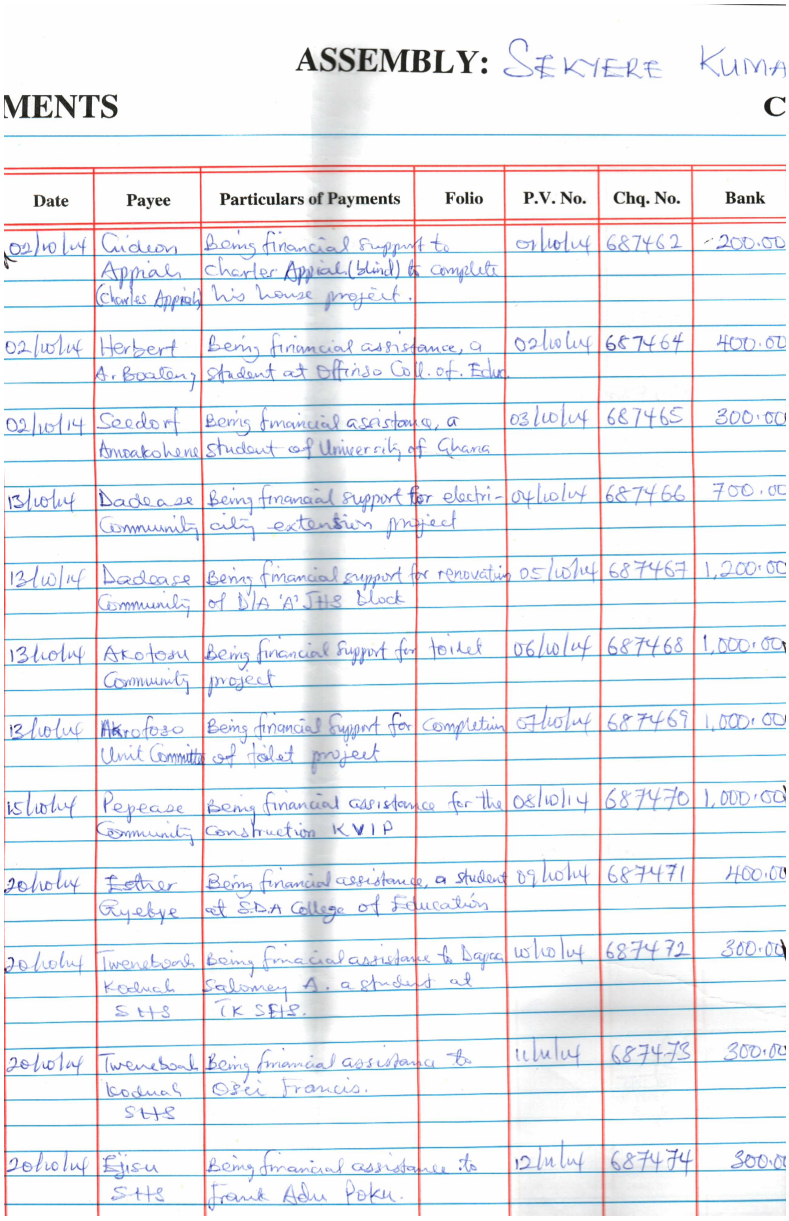
JUARY 2014 **ASSEMBLY:** MAMPONG MUNICIPAL

MENTS C

Date	Payee	Particulars of Payments	Folio	P.V. No.	Chq. No.	Bank
16-1-14	Boateng Yaw Owusu Stephen	Being financial assistance to students		01	640307	1200.00
6-01-14	Boateng Yaw Owusu Stephen	Being payment in respect of Ashanti Mpg foot-ball club.		02	640308	1500.00
6-01-14	Boateng Yaw Owusu Stephen	Being donations to cherdes		03	640309	2500.00
16-01-14	K. Ofori Buo-mah	Being payment to support of the mosque project		04	640310	2200.00
6-01-14	K. Ofori Buo-mah	Being payment of financial assistant to students		05	640311	1700.00
6-01-14	Blessed Home Super Cement	Being 100 bags of cement in support of the construction of Teachers Quarters at Kyekyewere		06	640312	2294.25
16-01-14	CRA	5% WHT			640313	120.75
13-01-14	CRA	5% WHT			640317	126.00
6-01-14	Goof Bit	Being 100 bags of cement in support of construction of a community centre for Bosofoso		07	640314	2294.25
6-01-14	CRA	5% WHT			640315	120.75
14-01-14	Edwin Bio	Being payment in respect of a 10 seater KVIP place of convenience for Kyeremfaso community		08	640318	19000.00
14-01-14	CRA	5% WHT				60.00
21-01-14	NIB	Bank charges			640319	1000.00
						~~33990.00~~
		Bal c/d				34116.00
						9285.64
						43401.64

Figure E.1: Exhibit 1: MPs' CDFs expenditure sheet

Notes: MPs' CDFs expenditure sheets are month-by-month reports of itemized spending by an individual legislator. These sheets are submitted by MPs' local governments to the national fund administrator.



ASSEMBLY: SEKYERE KUMA

MENTS **C**

Date	Payee	Particulars of Payments	Folio	P.V. No.	Chq. No.	Bank
02/10/14	Gideon Appiah (Charles Appiah)	Being financial support to Charles Appiah (blind) to complete his house project.		01/10/14	687462	200.00
02/10/14	Herbert A. Boateng	Being financial assistance, a student at Offinso Coll. of Edu.		02/10/14	687464	400.00
02/10/14	Seedorf Amoakohene	Being financial assistance, a student of University of Ghana		03/10/14	687465	300.00
13/10/14	Dadease Community	Being financial support for electri-city extension project		04/10/14	687466	700.00
13/10/14	Dadease Community	Being financial support for renovation of D/A 'A' JHS Block		05/10/14	687467	1,200.00
13/10/14	Akotosu Community	Being financial support for toilet project		06/10/14	687468	1,000.00
13/10/14	Akrofoso Unit Committee	Being financial support for completion of toilet project		07/10/14	687469	1,000.00
15/10/14	Pepease Community	Being financial assistance for the construction KVIP		08/10/14	687470	1,000.00
20/10/14	Esther Ayekye	Being financial assistance, a student of S.D.A College of Education		09/10/14	687471	400.00
20/10/14	Tweneboah Kodua SHS	Being financial assistance to Dapaa Salomey A. a student at TK SHS.		10/10/14	687472	300.00
20/10/14	Twenebah Kodua SHS	Being financial assistance to Osei Francis.		11/10/14	687473	300.00
20/10/14	Ejisu SHS	Being financial assistance to Frank Adu Poku.		12/10/14	687474	300.00

Figure E.2: Exhibit 2: MPs' CDFs expenditure sheet

Notes: MPs' CDFs expenditure sheets are month-by-month reports of itemized spending by an individual legislator. These sheets are submitted by MPs' local governments to the national fund administrator.

Type	Categories	Criteria
Public goods	Education	Construction or repair of school buildings, extra classes for schools, mock exams for final year students, and textbooks and other school supplies distributed to schools.
	Health	Construction or repair of local clinics, clearing of community dumpster, immunization exercises, and health awareness programs.
	Repair and construction	Road, bridges, water pumps, and purchase of construction materials to support community initiated projects (electoral area is specified).
	Safety and Security	Police operations (i.e., providing security for community events) and providing street lights or replacing street bulbs.
Personal goods	Education	Scholarship for "needy but brilliant" students, including scholarships for education abroad. Also include sponsorship for apprenticeships (driving school, hairdressing, and dressmaking).
	Health	Medical bills for individuals (including medical surgeries).
	Business	Support constituents to start their own businesses including farms and retail shops.
	Needy	Replacing roofing sheets, and pocket money (general financial assistance).
Donation to groups	Religious/traditional authorities	Donation to church fundraising activities (e.g., church building and annual harvest). Donation to traditional festivals, funerals, and repairs of the chief's palace.
	Youth organizations	Sponsor capacity building workshops and soccer tournaments.
Transfers to District Assembly	Organization of national events locally	Payment for national events held locally, including independence day celebration and national farmers' day celebration.
	Operational cost	Repair works on local government buildings and infrastructure, fuel local government vehicles and maintenance of machinery. Transfers to local government account often stated as a loan.
Monitoring and Office Expense	Monitoring of MPs' project	Paid directly to MPs to cover their inspection of projects in their constituency.
	Office expense	Office building rent, operational expenses, and staff salary for MPs' office in the constituency.
Unclear Purpose Expenditure	Beneficiary or purpose of payment is unclear	Examples include: MP direct purchase (e.g., TV sets, cutlasses, etc.) for which the Fund Manager deducted amounts; purchase of building materials for which the purpose was not stated; purchase of motorbikes with no stated beneficiary or purpose; purchase of food items (e.g., bags of rice, oil etc.) with no stated beneficiaries; and transfers to individuals or business organizations with no stated service provided or materials supplied.

Table E.2: Classification of MPs' spending of Constituency Development Funds

E.0.1 Summary statistics of expenses

Table E.3 presents the summary statistics of MPs' use of their CDF in general (total spending) and across different expenditure categories (Panel A). The total amount of funds that MPs expect in any particular fiscal year is contained in a legislation referred to as the District Assemblies Common Fund Formula, which is passed each year. Funds are then released to MPs in four tranches during the fiscal year. In anticipation of these disbursements, MPs may provide benefits to their constituencies and reimbursed their creditors when funds are released. When MPs make direct purchases, the FA deducts the amount used before transferring the remaining (net amount) to MPs' CDF account managed by their local governments. These deductions are reflected in the records submitted by the DA and often *unclear* what goods were purchased or who the target beneficiaries.

Table E.3 Panel B shows the summary statistics of the dependent variables used in my analysis, which I created using the data on expenditure. *Utilization* measures the proportion of allocated funds (i.e., GHC 1, 264, 987) spent between 2014 and 2016. *Public Goods* and *Private Goods* measures the proportion of allocated funds used by an MP to provide public and private goods, respectively.

Statistic	N	Mean	St. Dev.	Min	Max
		GHC	GHC	GHC	GHC
Panel A: CDF Spending					
Public goods	60	290,414	233,426	0	1,169,500
Private goods	60	128,136	91,951	0	447,886
Donation to local groups	60	31,201	37,499	0	185,489
Transfers to local government	60	37,391	66,637	0	344,885
Monitoring and office expenses	60	8,371	13,826	0	60,681
Unclear purposed expenditure	60	26,703	42,834	0	198,811
Total spending	60	522,216	283,345	111,400	1,308,597
Panel B: Dependent variables					
Utilization	60	0.415	0.223	0.088	1.034
Private goods	60	0.102	0.072	0.000	0.354
Public goods	60	0.231	0.184	0.000	0.925

Table E.3: Summary statistics of MPs' use of their CDFs between 2014 and 2016

Notes: Table E.3 shows the summary statistics of the use of CDFs by MPs. Part A presents the summary statistics of legislators' itemized expenses as well as their total expenditure in actual amounts. Part B shows the proportion of available funds between 2014 and 2016, GHC 1, 264, 987 that were used up by MPs in general (*Utilization*) as well as the proportion spent on *public* and *private goods*. Amounts are in Ghana Cedis (GHC)(the exchange rate was $GHC3.72 = \$1$ in August 2014).

E.1 Density distribution of dependent variables across treatment conditions

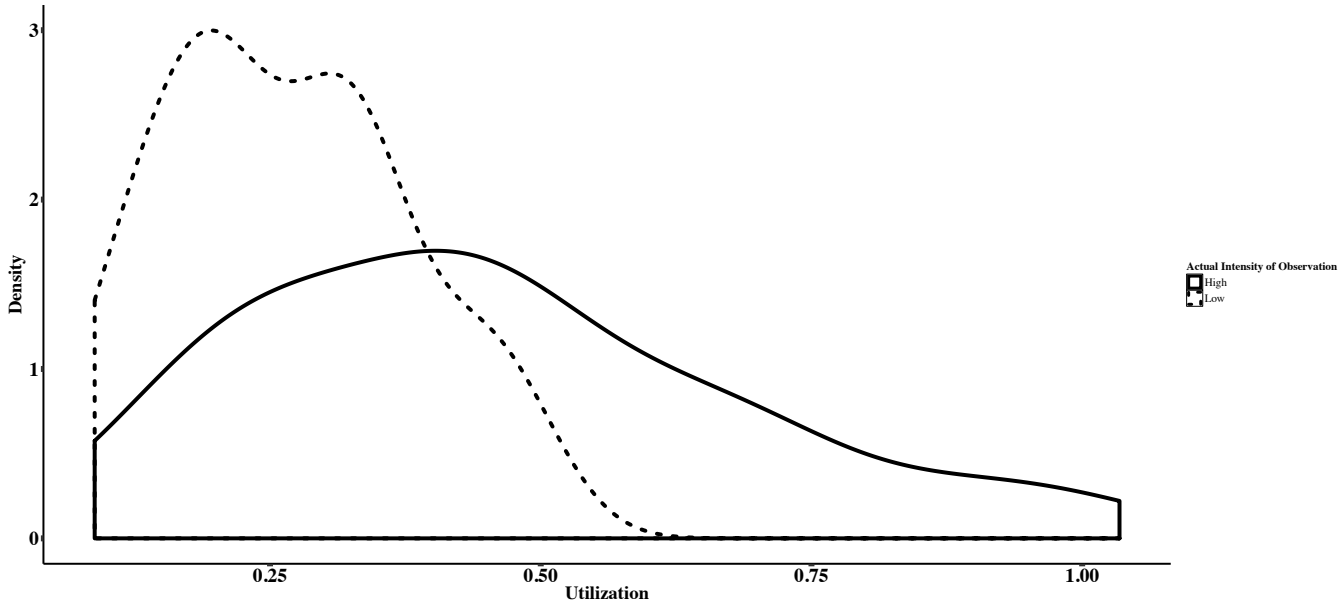


Figure E.3: Density plots of the percentages of CDFs used by MPs across treatments conditions

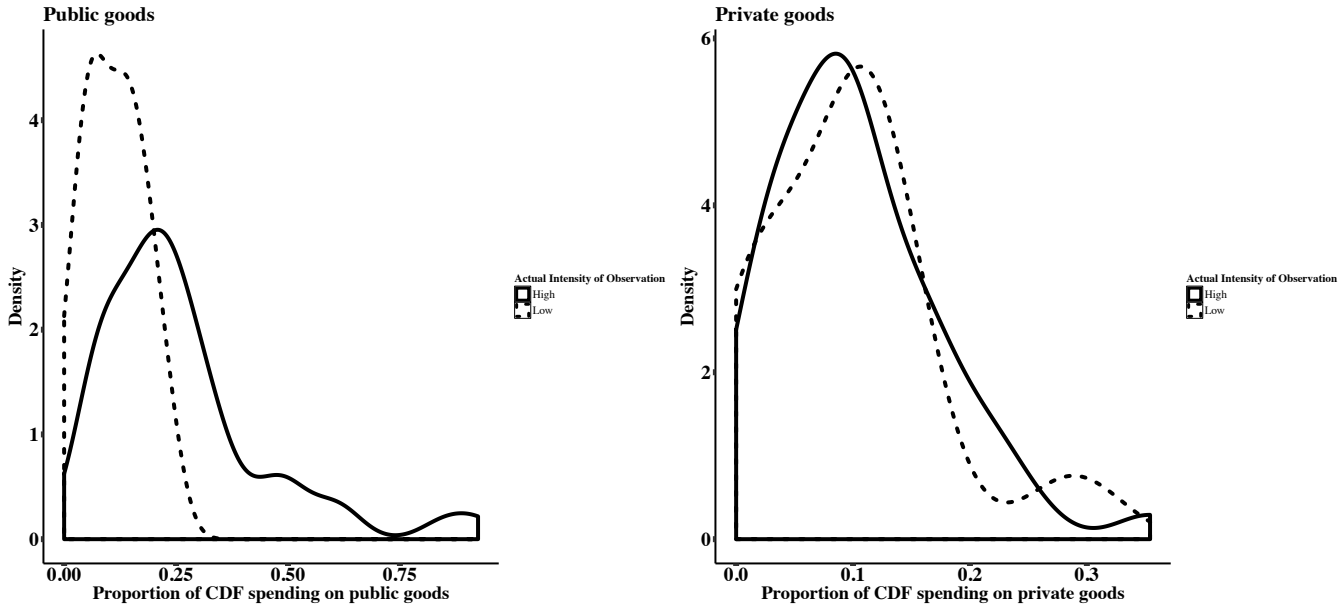


Figure E.4: Density plots of the percentages of CDFs used by MPs for public and private goods provision by treatment conditions

F Robustness checks

In this section, I show that the main results reported in Section 5 are robust to potentially influential observations or outliers. To examine the robustness of the results presented in Section 5 to influential observations, I reestimate the various ITT effect coefficients 59 times sequentially removing one observation at a time. The estimated ITT effects for *utilization*, and *public* and *private* expenditures are displayed in Figures F.1.

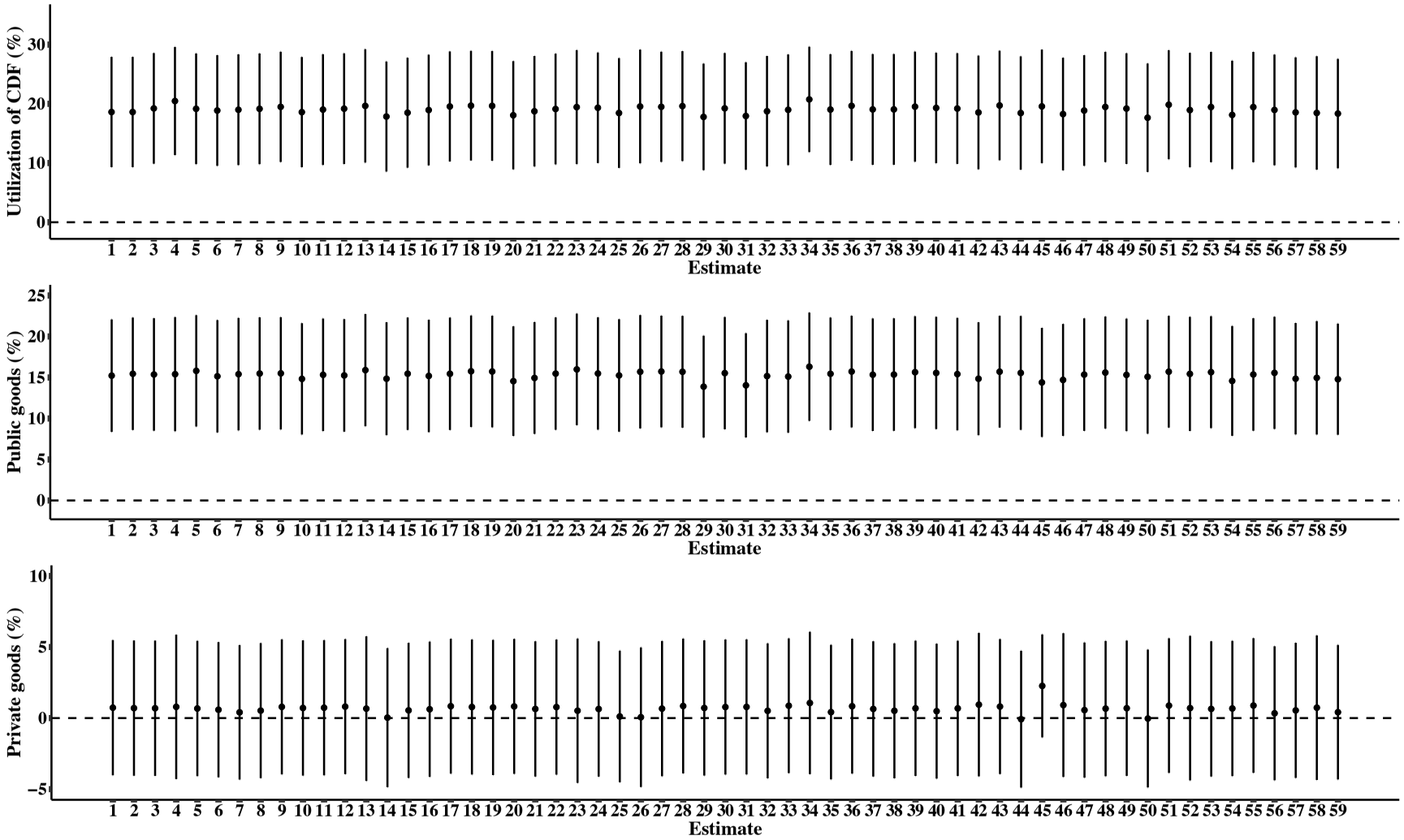


Figure F.1: Estimates of the intention-to-treat effect of intensity of observation on MPs' use of CDFs is not driven by a single case

G Interviews with MPs

I conducted interviews with 47 out of 60 MPs in my sample between November 2015 and January 2016. The purpose of these interviews was twofold. First, it was to assess MPs' responsiveness to their constituents indicated by how they report allocating their time. Second, it was to examine some potential mechanism that drives the results in this study. I show some of the interview results on the latter in Section H. In this section, I report on the first. The results broadly support the findings presented in the paper that MPs elected in intensely monitored constituencies provide greater constituency services.

Table G.1 shows MPs' self-reported levels of provision of constituency services (Part A) and legislative activities (Part B). In Part A, I show results for the following: (1) the percentage of MPs' times spent in the constituency (during parliamentary sessions); (2) number of times they visit their constituency in a year; (3) whether they have applied for external funds to support constituency development projects; and (4) whether they organize monthly meetings to listen to constituents demands. In Part B, I report results on whether an MP has spoken frequency (7 or more) during their term in office on: (1) National policy or project implementation issues; and (2) Constituency development issues.

The results show that MPs elected from intensely monitored constituency report to spend a higher proportion of their time in their constituencies compared to those elected from low-intensity observation constituencies. They also visit more annually. Also, representatives elected from high-integrity elections report to seek external funds to support projects in their constituencies and organize meetings frequently (monthly) to listen to their constituents concerns. While not all estimates on these indicators are statistically significant, they appear substantively large. Together, these results suggest that high-election integrity increases the level of effort legislators exert in constituency services. However, while those elected in intensely-monitored elections also appear to report slightly more activities in the legislature, these differences are neither substantively nor statistically significant.

		Actual Intensity of Observation		*ITT*
	Full sample	Low	High	
	(1)	(2)	(3)	(4)
Constituency Services				
Percentage of MPs' time spent in constituency	41	34.33	43.29	8.95**
	(11.34)	(10.57)	(10.8)	(3.17)
# of MP visits to constituency annually	38.35	33.82	39.77	5.95
	(12.03)	(15.01)	(10.8)	(5.09)
MP applied for donor funds to support constituency	0.28	0.17	0.31	0.15
	(0.45)	(0.39)	(0.47)	(0.14)
MP organizes monthly constituents' meeting	0.62	0.4	0.69	0.29
	(0.49)	(0.52)	(0.47)	(0.19)
Legislative Activities				
National policy or project implementation	0.38	0.25	0.43	0.18
	(0.49)	(0.45)	(0.50)	(0.16)
MP raise concerns of constituency	0.38	0.33	0.40	0.07
	(0.49)	(0.49)	(0.50)	(0.17)
N	47	12	35	

Table G.1: Higher-intensity of observation increases MPs' constituency services, but have no effect on MPs' legislative activities

Note: Table $G.1$ presents result from a survey of MPs on their constituency services and legislative activities. A standard instrument was used to conduct these interviews with the help of research assistants. Columns (1)-(3) report the means and standard deviation (in parentheses) for each MPs self-reported activities in the Full sample, and Low and High intensely-monitored constituencies, respectively. Columns (4) report the average ITT effects (difference in means) of the treatment with robust standard errors (HC2). *p<0.1; **p<0.05; ***p<0.01

Table G.2 display results for how MPs report spending their time on the top three activities that take the most of their time when they visit their constituency. I provided MPs with six items (and they were free to add other activities). I gave MPs the following options: holding a one-to-one meeting with constituents; holding community with constituents; holding meetings with community leaders; holding meetings with party executives; inspecting constituency projects; and attending social events such as funerals, religious activities, traditional festivals, etc. They were first to choose the three activities and then divide their 100 percent working time to these three things. For most of these activities, I find no significant difference among MPs across the treatment who chose them, suggesting they dedicate a similar amount of time. Interesting, among the few MPs who chose "inspecting constituency projects" as one of their three key activities, those elected in intensely-monitored constituencies spend a higher percentage of their time on this activity. They, however, dedicate less time to social events such as funerals and church services. These results support my claim that high-integrity elections encourage legislators to exert a higher effort in providing public goods (works) to their constituents.

		Intensity of Observation		
	Full sample	Low	High	*ITT*
	(1)	(2)	(3)	(4)
Holding one-to-one meeting with your constituents	38.32	36.30	39.29	2.99
	(12.42)	(10.55)	(13.35)	(4.61)
Holding community meeting with your constituents	34.77	30.38	36.36	5.99
	(14.70)	(16.47)	(14.07)	(6.94)
Holding meetings with community leaders	19.09	15	20	5
	(4.91)	(7.07)	(4.33)	(7.23)
Holding meetings with party executives	34.82	32.50	35.33	2.83
	(13.83)	(11.90)	(14.48)	(7.72)
* Inspecting constituency projects	26.33	10	29.60	19.60**
	(10.23)	()	(7.13)	()
Attending events such as funerals, church services, durbars (festivals), etc.	32.71	38.55	30.57	-7.98 *
	(12.54)	(12.14)	(12.19	(4.46)

Table G.2: When visiting their constituency, MPs elected from higher-intensity observation districts spend more time on inspecting constituency development projects, and less on attending social events

Note: Table G.2 presents results from a survey of MPs on how they divide their time when they visit their constituencies. MPs were provided with all the activities in the table and asked to choose the top three that took most of their time. They were then asked to allocate what proportion of their time they assigned to their top three choices. The specific question was: "When in your constituency, which THREE of the following activities take up the most of your time? Please tell me what percentage of your time you spend on each of these three:. " Table G.2 Columns (1)-(4) reports the means and standard deviations (in parentheses) of the time MPs report they allocate to each of these activities, if they selected it as one of their top three, in the Full sample, and Low, Medium, and High intensely monitored constituencies, respectively. Columns (5) and (6) report the ITT effects of intensity of observation in Medium and High IO constituencies, respectively along with robust standard errors. *p<0.1; **p<0.05; ***p<0.01

H Testing the mechanisms through which electoral integrity affect MPs' behavior

		Intensity of observation			
Incumbents Characteristics	N	Low	Medium	High	P-value
# Parliamentary Terms-incumbent MP	60	1.4615	2.1667	1.7826	0.6131
Female	60	0.0769	0.1667	0.00	0.2652
Minister	60	0.1538	0.2083	0.00	0.0953
Incumbent Party MP	60	0.3846	0.7083	0.4783	0.8666
Age	60	47.6923	50.2917	45.4348	0.2309
Highest education	60	5.0769	5.1667	5.1304	0.9073

Table H.1: The intensity of observation has no effect on the characteristics of elected candidates

Note: Data on MPs' gender, age, and education was coded from the handbook "Know Your MPs (2013-2017)." (Vieta, 2013). I coded incumbents' term in office and party affiliation using election results obtained from Ghana's Electoral Commission. I coded ministerial status from parliamentary records. While there seem to be a significant difference across the treatment codition on the ministerial status of legislators, including it in a multivariate regression does not change the results of my analysis. Results is not presented but available by upon request. The group means and p-values corresponding to the F-test statistic of all three treatment conditions are shown in the last column of the table.

	Actual Intensity of Observation	
	Low	High
MP saw Observers	41.67 (5)	58.82 (20)
MP did not see observers	58.33 (7)	41.18 (14)

Table H.2: Suggestive evidence that MPs elected in higher-intensity of observation are more likely to report they saw an observer at a polling station they visited

Notes: Specific question: "Did you personally see observers at some of the polling stations you visited?" N= 46 MPs, Chi-squared= 1.05, P-value= 0.31

	Intensity of Observation		
	Low	High	*ITT*
MPs estimate of intensity of observation	0.133	0.283	0.150
	(0.153)	(0.312)	(0.136)
N	3	15	
Empirical intensity of observation	0.145	0.249	0.104***
	(0.054)	(0.077)	(0.021)
N	13	47	

Table H.3: Suggestive evidence that MPs were aware of the intensity of observation within their constituencies

Note: Table H.3 (upper panel) report the average of MPs' estimates of the proportion of polling stations in their constituencies that were monitored by election observers with standard deviations reported in parentheses. Their estimates were in response to the question: *For every twenty (20) polling stations in your constituency, how many would you say were monitored by domestic election observers*. Table H.3 (lower panel) also provide the average of the empirical saturation of observation across the three treatment intensities below these estimates with standard deviations reported in parentheses. Empirical intensity of observation refers to the actual proportion of polling stations within the entire constituency, and not the experimental sample, that were monitored by observers. *p<0.1; **p<0.05; ***p<0.01

	Dependent variable:					
	Contacted MP	Attended Community Meeting	Joined Group to Raise Issue	Requested Government Action	Contacted Government Official	Voters' Duty that MPs' Work
	(1)	(2)	(3)	(4)	(5)	(6)
High Intensity of Observation	−0.020	−0.022	−0.063	−0.041	0.003	0.026
	(0.034)	(0.087)	(0.051)	(0.049)	(0.028)	(0.056)
Constant	0.123***	0.453***	0.406***	0.170***	0.132***	0.358***
	(0.029)	(0.077)	(0.042)	(0.045)	(0.023)	(0.047)
Observations	447	447	447	447	447	447
R^2	0.001	0.0003	0.003	0.003	0.00001	0.001
Adjusted R^2	−0.001	−0.002	0.001	0.0003	−0.002	−0.002

Table H.4: The intensity of election observation in a constituency neither affected citizens' pressures on MPs or government officials to provide public goods and services

Notes: Table H.4 presents results from analysis of Ghana's Afrobarometer Round 6 data conducted in 2014. I analyze questions related to potential increase in citizens pressures on MPs within constituencies to deliver public goods as a results of the treatment. For easy analysis and interpretation of results, I coded these questions as dummies indicating whether citizens took the stated action. The specific questions are as follows: Column (1): "During the past year, how often have you contacted any of the following persons about some important problem or to give them your views: A Member of Parliament"; Columns (2)-(3): "Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year ": Attended a community meeting (Column (2)), and Got together with others to raise an issue (Column (3)). Columns (4)- (5) : "Here is a list of actions that people sometimes take as citizens when they are dissatisfied with government. For each of these, please tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance?": Joined others in your community to request action from government" (Columns (4)) ; and Contacted a government official to ask for help or make a complaint (Column (5)). Column (6): "Who should be responsible for: Making sure that, once elected, Members of Parliament do their jobs?" [Coding: The voters (1) as oppose to The president/executive or The Parliament/local council, or their political party (0)]. Standard errors are clustered at the constituency level. *p<0.1; **p<0.05; ***p<0.01

I Effect of expectaion of intense monitoring on CDF spending

	Intensity of Observation			
	Low		*High*	
	MP received letter to expect high observation			
Expenditure category	No	Yes	No	Yes
Public goods	60,555	47,405	136,225	144,356
Private goods	43,314	68,621	53,617	70,067
Donations to local groups	12,927	4,769	16,816	17,849
Transfers to local government	1,375	8,958	15,933	22,964
Monitoring and office expense	0	1,926	4,004	4,781
Unclear purposed expenditure	14,786	31,533	14,888	4,867
Total	132,957	163,213	241,482	264,885
N	4	9	25	21

Table I.1: Average legislator CDF spending by intensity of observation and expectation of future high monitoring in 2016