

How Transparency Affects Distributional Politics: A Field Experiment among Elected Politicians in Malawi¹

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Abstract

How does transparency affect distributional politics? We show that it conditions officials' decisions to target political supporters and needy communities with development resources. We present the results of a unique experiment in which 333 locally elected politicians in Malawi made real decisions about the allocation of NGO-provided development materials to schools in their area. Prior to making these decisions, half of the politicians were randomly assigned to be informed that letters about their allocation decisions would be sent to local development committees. We demonstrate that increasing transparency in this way caused politicians to allocate more development resources to schools with greater economic need and less to politically pivotal areas. Many have theorized about the role of transparency in distributional politics; however this is the first evidence evaluating these claims using in-office elected leaders as participants, examining distributional decisions themselves rather than the downstream outcomes of these decisions, and randomizing the level of transparency in the allocation decision using an experimental design. The results provide policy-relevant insights into the role of institutional design in development.

1. Introduction

In making decisions about how goods, services, and policies should be allocated, politicians often face conflicting political incentives and efficiency concerns. Consequently, many long-term development outcomes, such as infant mortality, education, and public services, can be linked as much to political and social characteristics of citizens as to their economic need (Burgess et al. 2015; Jablonski 2014; Cruz et al. 2015; Franck and Rainer 2012; Kramon and Posner 2013). Moreover, politicians that engage in politically motivated targeting often under-provide public goods (Khemani 2013; Lizzeri and Persico 2001; Keefer and Khemani 2004). These contradictions between the efficient and the political are particularly poignant in developing, consolidating democracies such as Malawi where government development spending is often particularly politicized, biased by partisanship or ethnicity (Dionne et al. 2016; Ejdemyr et al. 2015; Chinsinga 2011; Resnick and Van de Walle 2013).

This well-documented effect of politicized allocation decisions raises the question: When might politicians opt out of politicized targeting and instead target based upon need? Our contention is that the decision by politicians to target efficiently depends in part upon the institutional transparency of the decision. When politicians are able to conceal their decisions so that only recipients are aware of the allocation of funds, then targeting to specific voters can be an efficient way to garner votes. However, when distributional decisions are public, politicians have to worry that excluded voters will sanction politicians, either for poor programmatic performance, or for political favouritism. Politicians often must also consider the possibility that institutional actors, such as donors, oversight committees or traditional authorities, will impose reputational or budgetary costs on those politicians who engage in political favouritism. As a consequence, transparency reduces the incentives of incumbents to engage in obviously politically motivated targeting, and increases incentives to target based upon more need-based criteria, particularly when these criteria are highly observable.

Empirically documenting the relationship between transparency and distributional decisions is challenging. One reason is that most spending decisions by elected officials are made in a kind of institutional black box. While we can observe the outcome of spending decisions, we rarely have any

kind of insight into how the decision was made, what actors were involved, or what incentives were at play. Peeking into this box is particularly challenging in a decentralized, developing context where spending decisions are the result of lengthy decision chains involving councils, committees, bureaucrats, and, often, donors and traditional leaders as well. This makes it even more difficult to come to clear conclusions about the incentives of specific politicians. Then, research on this topic is further stymied by the fact that politicians themselves often obscure the process of distributional decision-making because of its sensitive – and politicized – nature. Finally, even if researchers are able to observe the decision-making process, there is inherent selection bias in the level of transparency in the system; particularly transparent areas might also be least politicized, preventing researchers from understanding the causal effect of transparency on distributional decisions.

In this paper, we present the results of a unique field experiment in Malawi that allows us to overcome these three primary challenges in researching the politics of distributional decision-making. We conduct an experiment among elected officials in Malawi to identify the causal effect of transparency on distributional decision-making. The experiment participants are 333 in-office locally elected councillors in Malawi (72% of the councillors in the country). We observe these councillors as they make real decisions about the allocation of development materials provided by an international NGO, a common distributional decision for politicians in aid-dependent Malawi. Trained RAs provided each councillor with a set of maps showing the locations of schools in their ward, and asked her to select one school off of each map to receive a development good (either iron roofing sheets, teacher supply kits, or solar lamps). We carefully coded each school for its political and economic characteristics and then randomly selected schools to appear on each map. To alleviate the selection bias in observationally examining the relationship between transparency and distributional decisions, a randomly assigned half of the councillors were told before making their decisions that their school selections would be conveyed to the Area Development Committee (ADC), a multi-stakeholder group mandated to monitor and manage development initiatives in the area.

Consistent with our theory, we find that politicians who are given the “treatment” of transparency when making allocation decisions are more likely to distribute materials in line with need and less likely to target in line with the political characteristics of communities. However, this effect is only

detected among those politicians who demonstrate they are informed of the political and education characteristics of this constituency, suggesting that constituency knowledge may mediate the effect of transparency.

One contribution of this article is to unify several literatures in political science that have previously been separate. First, we build our theory on the literature regarding how and when politicians opt out of clientelistic or pork barrel type distributional strategies, and instead invest in public goods or programmatic spending (Stokes et al. 2014; Weitz-Shapiro 2012; Gottlieb 2016; Keefer and Vlaicu 2005; Robinson and Verdier 2013; Keefer and Khemani 2009). Methodologically, we draw on a rich literature showing that experimentally varying transparency can affect performance (Reinikka and Svensson 2005; Banerjee et al. 2011; Buntaine et al. 2016; Chong et al. 2015; Keefer and Khemani 2005; Ferraz and Finan 2011; Malesky et al. 2012), though we note that the effects of transparency on the behaviour of politicians observed in this literature are not always in the direction of programmatic appeals (e.g., see Cruz et al. 2015 or Malesky et al. 2012).

Finally, this research speaks to a vibrant debate over how international institutions can best channel development aid. Donors in poorly institutionalized settings face the often contradictory imperatives to both promote local capacity, and to minimize the political capture and corruption that arises from the delegation of decision-making to local actors (Gibson, Andersson, Ostrom and Shivakumar 2005). This conundrum often results in donors either disengaging from local government, or implicitly permitting some level of political capture and corruption (Jablonski 2014; Winters 2010; Dietrich 2013). Our study suggests that changing the way in which donors inform and interact with pre-existing institutional actors around distributional decisions can help align the preferences of donors and local elites, and prevent aid from just benefiting the politically powerful. To our knowledge, this is the first attempt to unify these literatures and to evaluate theories of transparency and distributional decisions using an experimental design that involves in-office elected officials as participants and examines the allocation decision directly.

In the following sections, we begin with an explanation of how transparency affects distributional politics and explain our pre-specified hypotheses about how we expect transparency to affect decisions among local councillors in Malawi. We then introduce our experimental instrument and

discuss our identification strategy. We conclude with a discussion of the results and broader theoretical and policy implications.

2. Theory: How Transparency Affects Distributional Politics

Most theories of distributional politics start with the assumption that voters are completely informed about government distributional decisions. How would such a model differ from one in which voters are incompletely informed? To evaluate this, consider the problem of an incumbent politician trying to allocate school goods across several communities. Consistent with other distributional politics studies (e.g., Persson and Tabellini 2002), our model of distributional decisions includes three assumptions. First, incumbents make this allocation decision considering the primary goal of maximizing future vote share. Second, the educational returns from this spending are not equal across these communities: some schools are likely to have greater overcrowding, fewer materials, or worse classrooms and will therefore benefit more from the spending than others. Third, these communities differ on the extent to which voters are pivotal in the election, so the returns in votes will differ across communities.

How might an incumbent make such a decision? Under complete information, the answer to this question largely depends upon what we think about voter preferences. If voters only care about the income effects of targeted transfers, than – all else equal – the vote maximizing strategy is to give goods first to the most pivotal village since they will be most likely to swing the election. Dixit and Londregan (1996), for instance, show that an incumbent who is targeting income maximizing voters with targeted transfers should just target those groups where there is a high density of core or swing voters since the marginal vote returns from targeted transfers are greatest in such communities.²

This logic changes, however, when we consider that voters also care about what happens outside of their community (Weitz-Shapiro 2014; Fujiwara and Wantchekon 2013). In particular, we are interested here in what we call “programmatically targeting” – that is, spending on those areas where we anticipate the most effective return for the constituency or state as a whole. Voters might care about

² In Dixit and Londregan, pivotal voters could be core voters or swing voters depending upon what assumptions we make about the efficiency of distribution across groups.

programmatic targeting for several reasons: They might expect that their income is tied more to public welfare or spillovers, rather than community-specific wealth; they might have normative concerns about the efficient and effective allocation of goods; or they may believe programmatic spending reveals a politician's type and future behavior (Weitz-Shapiro 2014; Keefer and Vlaicu 2006; Wantchekon 2003). Independent of these programmatic preferences, some voters might have normative concerns about the political targeting of development, and be willing to sanction incumbents who engage such activity (Lynch 2008; Klopp 2002).

If voters hold strong programmatic preferences, a political targeting equilibrium is unlikely to predominate. The reason is that political targeting is likely to cost the incumbent votes in all communities that care about programmatic outcomes or are willing to sanction political targeting while gaining votes only in the specific community where the money is spent. Keefer and Vlaicu (2006) illustrate this kind of trade-off: they consider a model in which voters care about both targeted clientelistic transfers as well as public goods outcomes that benefit all voters. They argue that as long as incumbents can credibly and cheaply commit to investing in public goods, we should see incumbents target a large share of spending towards public goods categories out of concern that voters will observe inefficient spending outcomes and sanction the incumbent.³

How might incomplete information affect this trade-off between political and programmatic targeting? Note that the programmatic distributional strategies discussed above depend crucially on voters being able to *observe* the allocation of spending. If allocation decisions are completely non-transparent and all voters observe is spending in their own community, than electorally-minded incumbents have no incentive to deviate from a strategy of targeting pivotal voters. Even if voters care about rewarding programmatic spending and sanctioning politically targeted spending, their ability to do so is effectively zero if they do not have transparent and credible information about spending outside of their community. Thus, transparency should, on average, shift distributional strategies towards more programmatic equilibria.

³ While our logic is similar and complementary to Keefer and Vlaicu (2006); we focus on the effects of information on voter sanctioning, rather than on the credibility of electoral promises.

Several key assumptions are embedded in this theoretical model, which we validate for our research context in the next section. First, we assume that voters—absent any intervention—often lack sufficient information about public spending to reward and sanction incumbents. The literature seems to support this assumption. Buntaine et al. (2016), for instance, look at the effects of comparative information about public services in Uganda in an experimental setting. They show that only 37% of voters could correctly rank the quality of public services in their village to that of other villages in their sub-county, suggesting that they have difficulty remaining informed about spending outside their specific community. Other studies document similar information gaps in other contexts (Reinikka and Svensson 2005; Cruz et al. 2016; Pande 2011).

Such information gaps are unsurprising considering that transparency is not necessarily a good thing for incumbents. Programmatic expenditures are expensive, risk alienating one's core supporters, and divert funds that might be used for personal rents. In addition, transparency might reveal previous indiscretions of patronage that might hurt an incumbent's future career. Thus, many incumbents would prefer a world in which voters with strong programmatic preferences remained ignorant of the extent of targeted spending. Consistent with this argument, we often observe incumbents obfuscating the nature of public spending, particularly when such spending might be used for political patronage: governments shirk on audits, undermine anti-corruption institutions, or refuse to release accurate budget information (Ross 2012; Mwenda and Tangri 2005; Wrong 2010). Even in more transparent environments like the United States, we observe incumbents trying to hide political patronage through earmarks and other less transparent budget measures.

Our experiment focuses on the allocation of foreign aid, where these informational problems are particularly acute (Easterly and Pfutze 2008; Ghosh and Kharas 2011). Unlike public budgets, many aid projects are negotiated bilaterally between government officials and donors. Voters often have few insights into the size of such budgets, who was involved in negotiating the allocation of expenditure, or where funding was supposed to be targeted. Many institutional actors, like development committees and legislators, are also commonly excluded from spending decisions regarding donor funds. This makes it challenging to sanction those politicians that fail to cooperate in effective donor-

funded development. In more transparent environments, aid corruption and patronage are more scarce (Reinikka and Svensson 2005; Winters 2014).

We also make two additional assumptions about voter behavior. We assume that voters can and will sanction politicians who engage in politically targeted spending. We also assume that they will reward those who engage in programmatic spending instead of targeted spending. One piece of evidence for the latter is the extent to which we see voters mobilize in many elections against tribalism, or the allocation of goods to one's co-ethnics rather than based upon need (Lynch 2008; Klopp 2002). These assumptions are also supported by a growing number of experimental studies which document an effect of transparency or information on the willingness of voters to support programmatic campaigns and/or punish politically targeted spending (Banerjee et al. 2011; Buntaine et al. 2016; Gottlieb 2015). Among the more relevant studies in this respect is Fujiwara and Wantchekon (2013), who randomly assign deliberative town hall meetings focused on programmatic platforms to communities in Benin. They then compare voting behavior in treatment communities to those which received traditional clientelistic appeals. Consistent with our premise that voters prefer programmatic spending when not specifically targeted, candidates that relied on programmatic appeals received considerably higher vote shares in areas where they were not previously dominant. Dominant parties also received a reduction in votes overall.

While existing literature largely focuses on sanctioning through voting, citizens can also choose to sanction incumbents by reporting them to other institutional actors, like traditional authorities, development committees, donors and district officials. We provide several examples of this kind of sanctioning in our discussion of the Malawi case. As we note later on, it can often be difficult to separate the effects of top-down, institutional sanctioning from the effects of bottom-up, vote-based sanctioning as transparency makes both types of sanctioning more effective. It is worth emphasizing that our argument here is not that transparency makes electoral incentives less salient in distributional decision-making. Instead, our contention is that in a more transparent decision environment, making decisions based on objective efficiency criteria becomes more electorally valuable to incumbents by capturing the support of a wider group of voters. In this sense, our argument differs in an important way from a large class of studies that only consider non-electoral means to sanction political

opportunism, such as donor conditionality, monitoring or audits (Gibson, Jablonski and Hoffman 2015; Svensson 2000; Temple 2010; Montinola 2000). It also leads to substantially different policy recommendations, as we emphasize in the conclusion.

This argument also does not imply that that transparency is an unmitigated benefit. Transparency increases incentives to appear to be targeting based upon need-based criteria that are observable to voters and other stakeholders. While we believe this is likely to lead to improved development outcomes under most conditions, it can also provide incentives to pander by selecting on criteria that are observable rather than those that are most efficient (Maskin and Tirole 2004; Ashworth and de Mesquita 2014).

Taken together, our arguments suggest the following hypotheses about the effects of transparency:

H1. In more transparent environments, incumbents will be less likely to target development funds based upon the political characteristics of recipients.

H2. In more transparent environments, incumbents will be more likely to target development funds based upon the needs of recipients.

In the following sections we discuss the Malawi context and our sample, the experimental design and results.

3. The Context

Understanding distributional efficiency is particularly important in Malawi. The World Bank's Worldwide Governance Indicators (WGI) shows that Government Effectiveness in Malawi has declined from an already poor ranking of the 42nd percentile in 2010 to the 34th percentile in 2013, in part due to corruption and public mismanagement. The shortcomings in government effectiveness reinforce and are reflected in Malawi's high poverty levels. The 2014 UNDP Human Development Report revealed that an estimated 66.7 percent of the population in Malawi is multi-dimensionally poor, while an additional 24.5 percent is near multi-dimensional poverty. Distributional efficiency and government accountability are critically important components of Malawi's development.

Under the National Decentralization Policy and Local Government Act of 1998, Malawi has decentralized most development, distributional decisions. The Policy and related laws devolve administrative, fiscal, and political power and authority to local government as well as empower citizens to become involved in development decisions and implementation of development projects. Both administrative and fiscal decentralization have been rolled out in a disjointed fashion over the last two decades. Nonetheless, decentralized government structures have significant authority over the primary distributional decisions regarding Malawi's development.

Decentralized government in Malawi consists of several layers of authority (Figure 1). Directly connected to the central government, the highest level of authority in decentralized government are the District Commissioners (DCs). These are cabinet-appointed officials that lead one of the 28 districts or seven municipalities in Malawi. The DCs are non-voting members on the district and municipal councils, which are the legislative bodies governing the allocation of funds, collection of revenue, and management of public goods and services in the district. Councils have an average budget of approximately US\$5 million, 11% of which is dedicated to education, the sector in which we focus our study.⁴ Further, within the education budget, an average of approximately \$200,000 within each district is allocated to individual schools through the School Improvement Grants (SIG) program, funded by USAID but allocated and managed by district councils.⁵

Elected councillors are the voting members on these district and municipal councils. According to the Local Government Act, councillors are elected in single-member wards and are responsible for a large share of local service provision. However, councillors were out of office from 2005-2014 after then-President Bingu wa Mutharika cancelled the councilor elections in 2005. In this time period, local government consisted entirely of appointed government officials, selected by the ruling party. During this period, the appointed officials took on many of the roles and responsibilities given in the constitution to elected officials. Local government elections were held in May 2014, and 462 ward councillors were newly elected.

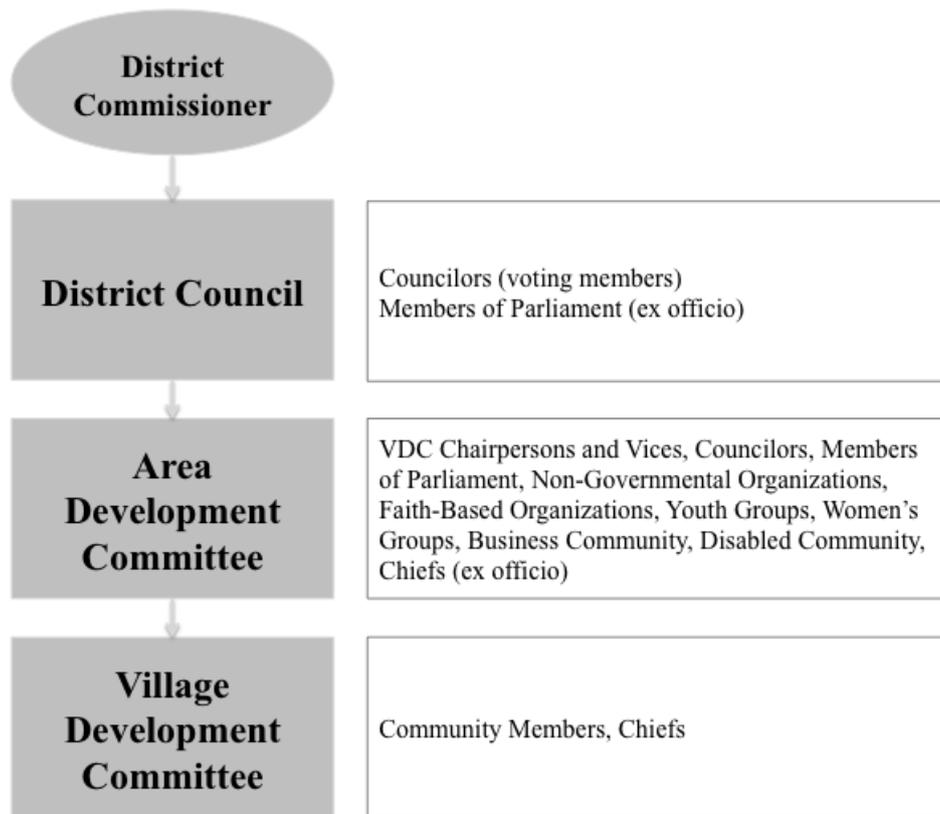
⁴ Based on 2011-2012 budgets, the most recent data available. An exchange rate of MK150=US\$1 was used.

⁵ Data on 2016-2017 SIG allocations collected from the District Education Manager in each district. An exchange rate of MK700=US\$1 was used.

There are several additional local government structures designated in the Local Government Act to liaise with the people and assist the councils in making allocation decisions. The councillors are supposed to make distributional decisions that align with the District Development Plan (DDP), which is created by those who sit on the Area Development Committees (ADCs) in the district. These ADCs are multi-stakeholder bodies of elected, appointed, and traditional community leaders. The role of the ADC is to facilitate community participation in development decisions (Chasukwa et al. 2014), though the exact rights and responsibilities of the ADCs are somewhat opaque (Hussein 2003). One oft-discussed specific ADC responsibility that is relevant to this research is to decide which individuals and institutions are needy (Chibwana 2012, Wild and Harris 2011). As one interviewed ADC representative said, “[In our meetings we decide] which areas need development projects and why those areas.” ADCs can be vulnerable to influence by chiefs (Chiweza et al. 2007, Chinsinga 2011), though our interviews in Malawi indicate that these chiefs may not necessarily be self-interested, instead serving as brokers and mediators between councillors, the development committee, and the community.

ADCs track citizen public opinion by routinely consulting with lower-level Village Development Committees, run by a mixture of appointed and elected and traditional village leaders.

Figure 1: Distributional Decision-Making at the District Level in Malawi



Malawi is among the most aid dependent countries in the world with aid representing over 37% of the government's budget, and an even larger proportion of overall development spending (World Bank 2016). Local politicians frequently work closely with donors to make decisions about aid allocation in a manner that we replicate in this experiment.⁶ Yet Malawi's aid and development record is far from clean. Many criticise donor work in Malawi as having limited effect and being stymied by high levels of corruption, political capture, and poor capacity (Chinsinga 2011; Resnick 2013; Resnick and Van de Walle 2013). Empirical evidence reinforces this conclusion, documenting that political biases in aid allocation have undermined development in Malawi (Zimmerman and Jablonski 2014; Dionne, Kramon and Roberts 2014). As one interviewed District Commissioner said, "Whenever [we] conduct a meeting with the elected officials to identify the area where the development should go, most of them choose the area where he got the more votes during elections."

⁶ Author focus groups with elected councillors in Malawi, August 2015; July 2016.

Many of the assumptions we make in our model are borne out as valid in the Malawi context. First, there are information gaps among citizens about government action. In a survey we conducted of 2,000 citizens (described more extensively below), information about local government spending was incredibly low. Only 4% of citizens were able to recall something that their councillor has done for a school outside their community. In reality, according to head teachers in the survey, councillors have done projects for 18% of schools, in addition to their role in coordinating donor funds and recurrent expenditures. Similarly, incumbents in our study are aware of the power of information. They attempted to spin or manage the revelation of spending information by preventing us from delivering transparency treatment letters, or by intercepting such letters in district offices.⁷

Yet, citizens in Malawi are nonetheless invested in the activities of district government, specifically surrounding coordinating development. In the same survey, there was a strong and positive correlation between the perception that a councillor was effective and the respondent indicating they planned to vote for the councillor again, should she choose to run for re-election ($r=0.5558$, p -value=0.0000). Focus group discussions with voters confirm voter willingness to sanction politically targeted spending and reward allocation based on more programmatic criteria. Voters criticized that political targeting, saying “[Politicians] always think of where they come from first” and “[Politicians] do not do what the people want. They use us for campaigning.” Voters also expressed a strong preference for politicians that disavow such tactics, saying for instance that “We vote for [our councillor] because, he works for any part whether they vote for him or not.” In follow-up interviews with teachers after our experiment, several made public complaints when they felt that targeting decisions by councillors were not efficient.⁸

Several interviewed elected officials referred to the citizens as their “employers.” They mention several ways that citizens hold them accountable. The most commonly discussed mechanism was through elections. In the words of one councillor, “The people are powerful since I work under them

⁷ For example, incumbents would often offer to “hand deliver” notices to local development committees rather than to have the research team send them directly. In other cases, councillors appear to have intercepted letters in district offices.

⁸ Consistent with our argument, such concerns were not limited to those teachers that failed to benefit from project spending.

and if the people agree not to vote for me, therefore I am done.” Another said, “The people can just wait until the next election comes and vote another person in.” In addition to electoral accountability, interviewed councillors mention that citizens will use demonstrations, vandalism, and “resistance” to express their frustration over decisions with which they disagree. Several specifically mentioned citizens could boycott meetings the councilor had organized. One councilor said he tries to avoid things that would make voters “get cross.”

4. Research Design

4.1 Overview

This research is based on a field experiment conducted among 333 elected councillors in Malawi. In addition to the experiment, we conducted 30 semi-structured interviews with councillors, members of parliament, district commissioners, and ADCs, and five focus group discussions with Malawian citizens. These interviews asked questions about decision-making, transparency, accountability, and relationships across government stakeholders. We also conducted a survey among 2,000 citizens across 83 of the 462 wards in Malawi. The survey asked questions about local school conditions and perceptions of councillor performance. Finally, we conducted a survey of 500 head teachers of primary schools in these same 83 wards. The purpose of this final survey was to validate the school needs data provided by the Ministry of Education, more comprehensively document the material needs facing schools in Malawi, and understand the head teacher’s interactions with and perceptions of the elected councillors.

4.2 Experiment Design

This research is unique in its use of an experimental lens to study elected political behavior.⁹ Experiments on elected officials remain rare due to the logistical challenges and costs involved. This

⁹ Other related experimental studies of the behavior of elected officials include McClendon 2016; Olken 2010; Hoffman, Jakiela, Kremer and Sheely 2015; Butler and Broockman 2011; Jensen, Findley and Nielson 2016.

is especially true when it comes to studying distributional politics.¹⁰ However for this research question there is considerable value in making this investment. We are able to clearly delineate causal mechanisms in a research area that has been burdened with many diverging theories and much contested evidence.¹¹ It is difficult to answer these questions in a non-experiment decision environment due to the identification challenges involved. Moreover, as LeVeck et al. (2014) demonstrate, elite preferences and behavior can often differ considerably from the preferences of non-elites as well as from theoretical models.

In face-to-face interactions, 333 incumbent councillors in Malawi participated in an experiment intended to evaluate the role of transparency on spending allocation decisions. An RA provided each of these councillors with the option to select three schools in their ward to receive development goods from an international NGO. In order to solicit this decision, the RA showed each councillor three maps, each of which indicated the location of three randomly selected schools in their ward.¹² The RA explained that if the councillor's ward won in a lottery, the NGO would deliver school supplies to one of these schools on the maps, and the incumbent was asked to select which school this would be.¹³ Each incumbent selected a total of three schools out of a possible nine to receive school supplies.¹⁴ An example of the map and prompt provided to incumbents is shown in Figure 2 below. When receiving this map, councillors were given the following prompt: "When you are ready, please tell me which school you would like to choose to receive a set of [iron lamps/teacher supply kits/solar lamps]. Please take your time in making this decision."

As shown in Figure 2 councillors in some cases were randomly assigned to receive information about the characteristics of particular schools in their ward as part of a larger experiment that assessed

¹⁰ See Grose 2015 and Zimmerman 2015 for a discussion of some of the ethical and logistical challenges in elite experiments.

¹¹ See Stokes, Dunning, Nazareno and Brusco 2014 for an excellent review of the state of the evidence for various distributional politics models.

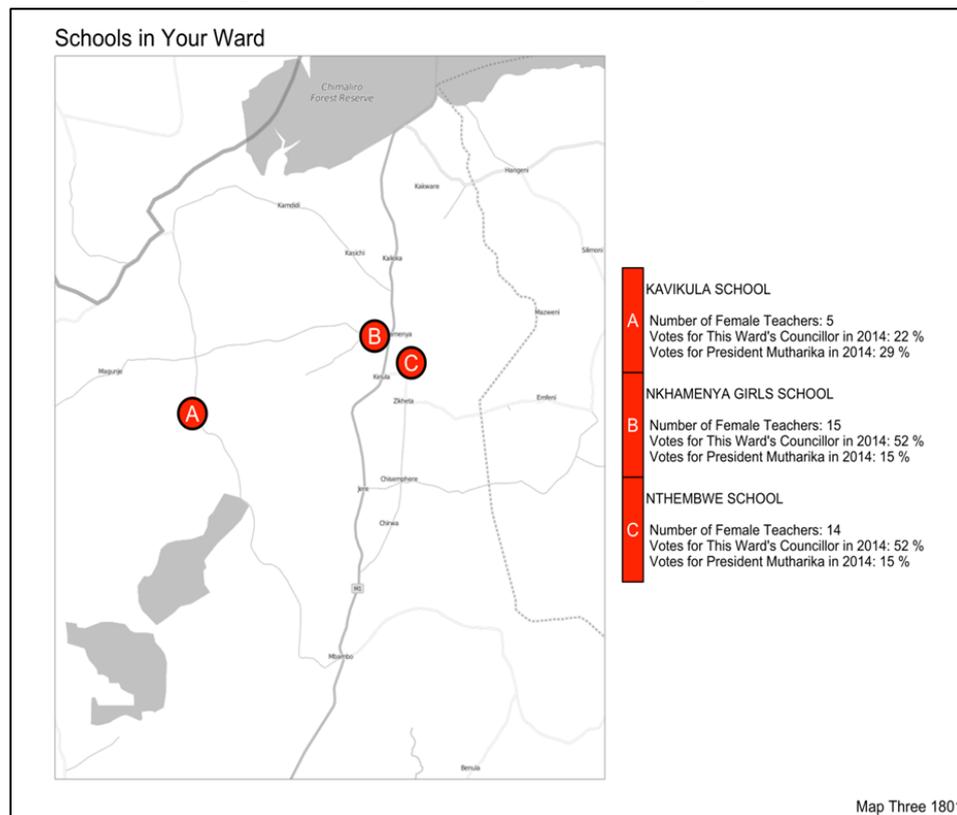
¹² The three schools were randomly selected from a comprehensive list of primary schools in the ward collected by the Ministry of Education. A small selection of schools were excluded from this list because we lacked key information about the characteristics of the schools.

¹³ Ultimately, about 20% of the schools selected by politicians were chosen in the lottery to receive materials from the NGO. A full description of the lottery process is provided in the appendix (section B).

¹⁴ Most incumbents chose three schools; however within some smaller wards it was not possible to generate three maps because there were not at least nine schools available. In such cases, incumbents only chose one or two schools to receive the goods.

the role of information and credit claiming in distributional decisions. As we demonstrate in the appendix (Table A3), this information provision is orthogonal to the transparency treatment, and does not interact significantly. We discuss the results of these other experiments in a companion paper.

Figure 2: Example School Decision Map



In each of the three distributional decisions, the incumbent allocated a different development good. In one map the incumbent chose a school to receive iron roofing sheets. Few schools in Malawi have adequate classrooms, and the rainy season often means that classes are cancelled for months at a time, so roofing sheets are a valuable good for efficiently improving the learning environment. In another map she chose a school to receive solar lamps. As few schools in Malawi have electricity, solar lamps can provide light for teacher preparation and student studying in the evenings. In a third decision, the councilor allocated teacher supplies kits, which include chalk, pens, notepads, and a

plastic tote bag.¹⁵ We chose these goods after discussions with donors working in Malawi's education sector and with other project stakeholders. Our interviews with incumbents and teachers suggest that these goods are all highly valued but that they vary in visibility: teacher supplies kits are relatively low in visibility (teachers often keep materials in the closet in their classroom); solar lamps offer medium visibility (lamps will likely move with the teacher and be frequently in use, even outside the school and during the daytime), and iron sheets are highly visible (these sheets are typically used as a roofing material). Pictures of these goods are in the Appendix Section B.

At the incumbent level, we randomized the level of transparency associated with the incumbent's decision. Our goal with this treatment was to maximize the likelihood that local stakeholders, traditional authorities, village leaders and institutional bodies would be made aware of how the distributional decision was being made. To accomplish this goal, we took advantage of a pre-existing institution, the ADC, as a mechanism for informing local communities. As stated in the previous section, these committees are a forum for local village leaders to discuss their development needs and offer suggestions to council and district level officials about how to spend development funds. The committees consist of all the chairs of local village development committees (VDCs), traditional leaders, councillors, representatives of religious, business, and nonprofit organizations, and frontline staff in local development organizations. Usually the committees are chaired by the local traditional authority, or sometimes by an elected member. These committees are largely seen as effective and non-political by voters and councillors.¹⁶

In our experiment, before an incumbent decided which schools in her area should receive the school supplies, the RA told the incumbent that a letter with her name and the selected schools will be sent to the ADC (transparency treatment) or that no one will be told which schools were selected (transparency control). Incumbents in the treatment group were shown a copy of the letter to be sent to the ADC and the enumerator filled it out as they proceeded through the survey (see Figure 2 for an image of an example letter). These letters were later filled out and sent individually to relevant ADCs

¹⁵ The order in which incumbents made decisions over different goods was randomly assigned.

¹⁶ Focus groups with voters, July 2015; Interviews with incumbent councillors, August 2016.

by our research team, several of whom later called us to receive additional details about the allocation decision.

Figure 3: Example Transparency Letter Send to ADC

tearfund

DATE 15 / 11 / 2015
FROM: Tearfund NGO
TO: Area Development Committee

We write to inform you that the ward councillor Maria Ofesi for MLOMBA ward has selected

school ZUHULU to receive IRON SHEETS
school NATIPEIBA to receive TEACHERS KITS
school _____ to receive _____

The materials are funded by and distributed in cooperation with Tearfund.

Sincerely,
Tearfund Project Management Team

It is important to note that the ADCs are seen by councillors and voters as a core part of decision-making at the local level; so by informing ADCs of these decisions, we are not engaging in an artificial intervention. As one incumbent said, “it is my duty as a councillor to always present whatever was discussed at the [Council] to the ADC and as a councillor I cannot decide on my own which area to allocate a certain development project without involving the ADC.”¹⁷ This view is also shared by members of the ADCs, some of whom told us that they expect the councillors to contact them before making distributional decisions.

Further, the treatment of informing the ADCs seems to be perceived as a treatment of informing the general Malawian population. As one ADC said, “[Our responsibility is to] mediate for

¹⁷ Interview with incumbent councillor, August 2016.

development projects between the assembly and the communities.” A councilor put it this way: “The ADC acts as a link between the community and the councilor.” Consistent with this role, the letters sent to the ADC were shared widely. When we followed-up with schools several months after the letters were sent, almost all teachers, and many other community leaders, were aware of the letters and many had spoken with representatives of the ADC directly.

Yet, despite the fact that ADCs are institutionally part of local decision-making, it is worth noting that none of the incumbents outside the treatment group requested to consult with the ADC, suggesting, as discussed above, that councillors seem to value the ability to make independent and non-transparent decisions about the distribution of goods in their communities.

Councillors appear to have viewed the decision to allocate aid through our experiment as a realistic and meaningful decision. About 30% of the sampled incumbents contacted us in the weeks following data collection to learn when the lottery for the school materials would be held and the materials would be delivered, confirming that the allocation of these goods was meaningful. Councillors also attended the lottery and the post-lottery delivery of school supplies. Also, consistent with our proposed mechanisms, incumbents expressed concerns about the oversight of voters and ADCs. Several incumbents asked the enumerators to give them a “receipt” proving that allocation of goods would come at another date. These incumbents said that citizens often take note of donors coming to visit them, and if the incumbent does not provide anything to the community after the meeting, citizens accuse the incumbents of stealing anything that was left by the donors. To put their fears to rest, we provided a certificate to each incumbent certifying that they had participated in a meeting for the project and that they did not receive anything in the meeting.¹⁸ Incumbents also appear to have recognized the potential sanctioning role of the ADC. Both before and after the experiment, several councillors made an effort to intercept the letter to the ADC, presumably, to prevent it from being delivered.

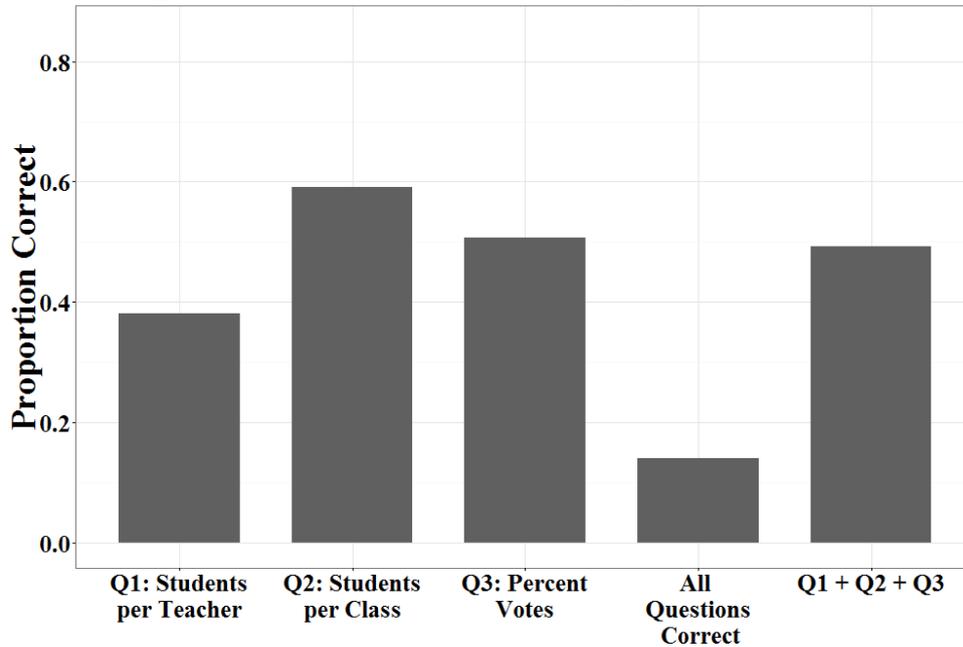
We had several instrumental concerns which we also dealt with in the course of the experiment. First, we were worried that incumbents may not always understand the information on the maps and

¹⁸ These certificates were not accepted at lower or higher rates across treatment groups, indicating that these certificates did not provide a substitute transparency treatment in some way.

the decisions that they were making. To alleviate this concern, we began the experiment with a training exercise in which incumbents were shown a map of school in another community outside their ward and asked several questions about features of the map. Only once incumbents were able to correctly identify the map did the experiment continue.

A second concern is that incumbents may not be well-informed about the characteristics of schools in their community. For instance, we risk identifying communities where politicians are well informed instead of identifying the communities that are in fact in most need of school materials. To alleviate this concern, we concluded the experiment with an additional map and asked incumbents to rank schools based upon characteristics like the number of students, the proportion of teachers and the percent of political support they received. This quiz allows us to condition the results based upon the level of information held by the incumbent. We show the results of this quiz in

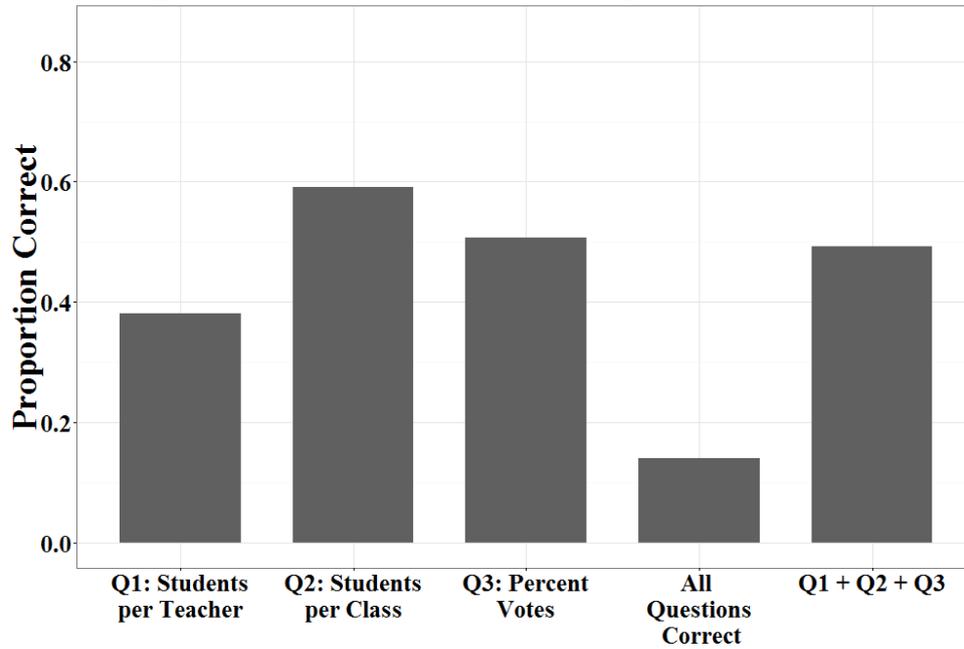
Figure 4: Incumbent Baseline Knowledge of School Traits



Students per Class indicates the proportion of respondents that could correctly indicate the school with the highest number of students per class on a map. *Students per Teacher* indicates the proportion of respondents that could correctly indicate the school with the lowest level of students per teacher. *Percent Votes* indicates the proportion of respondents that could correctly indicate the school where they had the least number of votes in the last election.

below. It is apparent that, while some incumbents have considerable local knowledge, there is also considerable variation: only 27% of incumbents could correctly answer all the information about school characteristics. Only 45% could correctly name the community in which they received the least percent of votes. This low baseline level of knowledge is not particularly surprising given that all of these incumbents were only two years into office and were still learning about the characteristics of their communities.

Figure 4: Incumbent Baseline Knowledge of School Traits



Students per Class indicates the proportion of respondents that could correctly indicate the school with the highest number of students per class on a map. *Students per Teacher* indicates the proportion of respondents that could correctly indicate the school with the lowest level of students per teacher. *Percent Votes* indicates the proportion of respondents that could correctly indicate the school where they had the least number of votes in the last election.

4.3 Sampling

Our final sample includes 310 elected incumbent councillors. Out of the 462 elected councillors in Malawi, we were able to obtain polling station level electoral data and contact information for 333, resulting in a contact rate of 72%.¹⁹ Out of the 333 councillors for whom we had data, seven were unavailable for participation in the study, resulting in a response rate among those recruited for participation of 97%. Then, an additional 15 subjects were dropped as a result of technical details when conducting the survey, for an attrition rate of 5%.²⁰ The resulting 310 sampled councillors are reasonably representative of the distribution of councillors as a whole in Malawi, as shown in Table A1 in the appendix. One exception is that we tended to under-sample less populated areas, largely due to the greater data availability challenges in these areas. These incumbents are also well distributed geographically as shown in Figure 4.

Within this sample, half of the subjects were assigned to receive a transparency letter and the other half were not. In Table 1 we also show the balance statistics across a range of variables related to incumbent and school-level characteristics. In no cases do we see significant differences between treatment and control incumbents.

¹⁹ We were unable to obtain council polling station level data for several areas in Malawi. This is potentially due to irregularities in the election tallying process (see Wahmen and Patel 2016),

²⁰ For instance, a couple councillors were assigned the wrong survey by our research team. In another case, mistakes in Ministry of Statistics map files resulted in incorrect maps being used in the experiment.

Figure 5: Map of Treatment and Control Incumbents

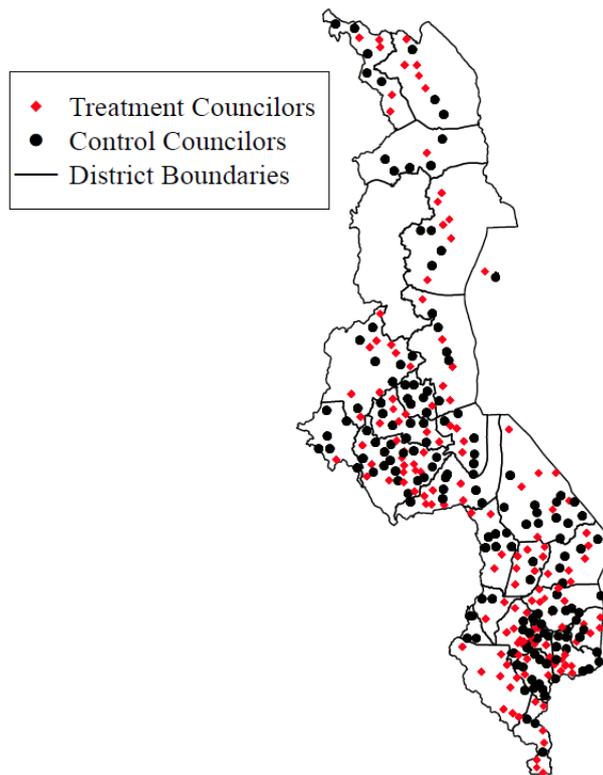


Table 1: Balance Tests

	(1)	(2)	(3)	(4)
	Treatment	Control	T-Statistic	Kolmogorov-
	Wards	Wards		Smirnov
				Statistic
Average School Enrollment	952.48	933.93	-0.39	0.08
	[451.51]	[380.35]	[0.70]	[0.67]
Average Student-Classroom Ratio	136.98	138.73	0.15	0.11
	[114.86]	[90.29]	[0.88]	[0.27]
Councillor Gender	0.89	0.91	0.72	0.02
	[0.32]	[0.28]	[0.47]	[1.00]
Councillor Victory Margin	0.24	0.27	1.16	0.09
	[0.18]	[0.20]	[0.25]	[0.56]
Councillor Turnout	0.69	0.70	1.23	0.15
	[0.08]	[0.06]	[0.22]	[0.07]
Percent Votes President Mutharika	0.42	0.39	-0.61	0.11
	[0.32]	[0.31]	[0.54]	[0.38]
Registered Voters	18,396.85	18,160.60	-0.27	0.07
	[8,258.67]	[6,886.20]	[0.79]	[0.88]

Notes: N=310. Columns 1 and 2 show the means for treatment and control groups with standard deviations in brackets. Columns 3 and 4 show test statistics with p-values in brackets.

5. Data and Estimation

Our goal is to estimate the average treatment effect of transparency conditional on school and community characteristics. We are particularly interested in whether characteristics such as need, political support and family connections influenced allocation decisions. Below we describe our approach to measuring each of these variables. These operationalizations were pre-specified in our pre-analysis plan. We only depart from this plan when specifically noted.

5.1 School Needs

In order to evaluate school needs, we rely on official school-level statistics from the Education Management Information System (EMIS) at the Malawi Ministry of Education Science and Technology. These data are from 2010 and encompass over 99% of all schools in Malawi. They are collected approximately biannually by district education offices through the support of local headmasters. We are reasonably confident in the quality of these data. These data have been collected and refined over multiple years; moreover independent assessment exercises on these data suggest a high level of reliability (Bernbaum and Moses 2011).²¹

These data are not an exhaustive survey of school needs; however they allow us to measure three highly visible characteristics of need. First, we measure structural overcrowding using the ratio of students per classroom. Overcrowding is among the more severe problems facing schools in Malawi: on average primary schools have 138 students in each class, though often have as many as 300 to 400. We expect that as the number of students per classroom increase, councillors should have a stronger incentive to invest in improving facilities. Second, we measure teacher overcrowding using the number of students per teacher. Due to chronic problems of low or unpaid salaries, teachers in Malawi are often heavily overcommitted and underpaid. On average, teachers are expected to teach 75 students on average, though some teachers have as many as 200-400 students. Third, we measure the quality of existing classrooms by looking at the number of temporary classrooms to permanent

²¹ We also are conducting our own ground truthing exercise on these data in which we survey headmasters directly about school characteristics. This exercise will allow us to directly validate the reliability of these data.

classrooms. The quality of temporary classrooms vary in Malawi, however they are often of extremely poor quality, sometimes a lean-to, a sheltering tree or a borrowed residence. As demonstrate more formally in the appendix, a high proportion of temporary classrooms is indicative a school with poor amenities, shoddy construction and no electricity.

We believe these measures of school need are correlated with effective development allocation. When making decisions about education projects, elected officials say they consider these pieces of information – specifically, they mention enrollment levels, numbers of school blocks, and numbers of teachers houses. However, several also mention that they often use measures of school quality and achievement, such as the passing rate, or that they simply examine the “look of the infrastructure,” or “just see the nature of the school” via in-person site visits at the schools. Those interviewed stated that they are able to access information from the DEM, the Ministry of Education, or the head teachers themselves.

In our analysis we take the within-ward z-scores of each of the school need variables; so a one unit increase indicates a one standard deviation increase in the ratio of students per classroom, students per teacher, or temporary to permanent classrooms relative to the overall population of primary schools in the ward. We also create an overall index, *School Needs*, which is equal to the sum of the three normalized measures of school needs. Operationalizing our variables in this way allows us to compare the needs of a school to the overall level of needs in a councillor’s ward and accounts for regional clustering in school quality.

There are some need-based characteristics that these data do not capture; however our pre-experiment focus groups and interviews confirm that these variables reflect core needs facing teachers and students in Malawi. During the experiment, we asked councillors to justify their choices. Among the 299 that gave an answer, 31 specifically mentioned classroom or teacher overcrowding.²² These variables also appear important for actual decision-making. As we show in Table 2, these variables are high correlated with school selection. A school at the highest level of our school needs index

²² Most answers were generic statements about considering school needs, though some councillors also mentioned political concerns.

would be about 120% more likely to be selected by an incumbent than a school at the lowest level of our school needs index.²³

As a further validation exercise, after this experiment was concluded we visited 310 of the schools in our sample and conducted interviews with head teachers and citizens, as we all as audited the school facilities. Among other things, we asked head teachers to name, in order of priority, the important needs of the school. As shown in Appendix Table A2, the results align well with our chosen measures of school needs, as well as the justifications of councillors. The highest priority issue by far (named by over 60% of respondents) was overcrowding in classrooms or teacher houses. Teachers also frequently mentioned needing more staff, various facility improvements, and learning materials.

5.2 Political Support

In order to measure the political characteristics of communities, we collected polling-station level data from the Malawi Electoral Commission on the votes received by all candidates for district-level councils. Nearly all polling stations are setup within schools, a fact which allows us to precisely identify the votes received by the incumbent councillor in the communities around the schools being used in the experiment. A large proportion (68%) of the schools in our sample wards were also polling stations. For those schools (32% of our sample) which were not used as polling stations, we calculate incumbent votes by using the geographically nearest polling station to the school.

One challenge we face is how to measure political targeting decisions. There is considerable debate about which voters are most likely to be targeted by pork barrel or clientelistic spending, and most research concludes that such strategies are contingent on the social and institutional environments faced by incumbents (e.g., Stokes, Dunning, Nazareno and Brusco 2014). Despite this diversity in strategy, most studies in multi-ethnic developing democracies like Malawi conclude that pork barrel spending will be targeted to core supporters of incumbents due to incumbents' greater

²³ It is worth noting (as discussed in our pre-analysis plan) that some incumbents also received information about need-based school characteristics intended to influence their decision, raising potential concerns about social desirability bias. There does not appear to be any such bias. As we discuss in other publications, providing this information had no significant effect on actual decision-making, either independently or in interaction with transparency.

ability to organize voting and turnout in communities where they have pre-existing social or ethnic ties, clientelistic networks, or information (Jablonski 2014; Stokes et al. 2014; Keefer and Vlaicu 2006; Burgess et al. 2015; Kramon and Posner 2013). This logic extends to the Malawi case, where voting behavior is often related to one's social networks and the endorsements of traditional leaders and other political "brokers". Empirical studies confirm that government spending, including that funded by foreign donors, is often biased in favor of strong supporters or coethnics of the incumbent government (Dionne, Kramon and Roberts 2016; Ejdemyr, Kramon and Robinson 2015; Chinsinga 2011; Resnick and Van de Walle 2013; Brazys, Heaney and Walsh 2015).

Building upon this literature, our pre-specified prior is that electorally motivated incumbents would prefer to target pork barrel spending communities where they received a large proportion of votes in the last election. Our interviews with councillors confirmed that targeting core voters in a common strategy among elected officials. Our focus groups with citizens also confirmed that councillors are often perceived to target spending in areas where they received a high proportion of votes. We also confirm this assumption directly by testing whether incumbents were in fact more likely to target core supporters during the course of the experiment (Table 2 and Figure 6). Incumbents were approximately 85% more likely to select the school in which they with the highest level of support than the school in which they received the least support. We also considered alternative political strategies. There is little evidence that incumbents were targeting swing voters, opposition groups, or supporters of the ruling regime.

During the experiment, councillors also admitted to specifically targeting core supporters. One respondent, when asked to justify his choices, explained that he was "was taking into consideration on how people voted for me so I wanted to please my people". Others claimed they "choose the school which put me into power" or that they allocated based on the "votes I got from the school" or to show "that I am their leader." To measure support for the incumbent at a school we create a variable, *Councillor Percent Votes*, which equals the percent of votes obtained by the incumbent councillor in the electoral area associated with the school.

In Table 2 we show summary statistics for selected and non-selected schools. There is a large and statistically significant effect of school needs and councillor votes on school selection. This is

consistent with our prior that councillors are considering both school needs and political support in their decisions about how to allocate school materials. In Figure 6, we also show the estimated coefficients of fixed effect regressions of school selection on each of these school characteristics with similar effects to those shown here.

Table 2: Summary Statistics for Selected and Not Selected Schools

	(1) Mean Selected	(2) Mean Not Selected	(3) Difference	(4) T-Statistic
School Needs	0.37 [1.95]	-0.14 [1.83]	0.51 [0.12]	4.40 [0.00]
Student to Teacher Ratio	0.17 [1.00]	-0.05 [0.93]	0.22 [0.06]	3.74 [0.00]
Student to Classroom Ratio	0.15 [1.08]	-0.05 [0.90]	0.20 [0.06]	3.24 [0.00]
Temporary to Permanent Classroom Ratio	0.05 [1.01]	-0.04 [0.98]	0.09 [0.06]	1.43 [0.15]
Councillor Percent Votes	51.07 [22.91]	47.80 [22.15]	3.27 [1.37]	2.36 [0.02]
Councillor Turnout	1198.08 [744.99]	1267.94 [799.68]	-69.86 [46.37]	-1.50 [0.13]
Relative Attends School	0.10 [0.30]	0.08 [0.26]	0.023 [0.017]	1.15 [0.25]
School Enrollment	889.75 [572.36]	897.06 [590.50]	-7.31 [35.11]	-0.21 [0.84]

Notes: N=310. Columns 1 and 2 show the means for selected and not selected schools with standard deviations in brackets. Column 3 shows the difference in means with standard deviations in brackets. Column 4 shows test statistics with p-values in brackets. Student to Teacher Ratio, Student to Classroom Ratio and Temporary to Permanent Ratio variables are the z-scores of these statistics.

Figure 6: Effect of School Characteristics on Councillor Selection

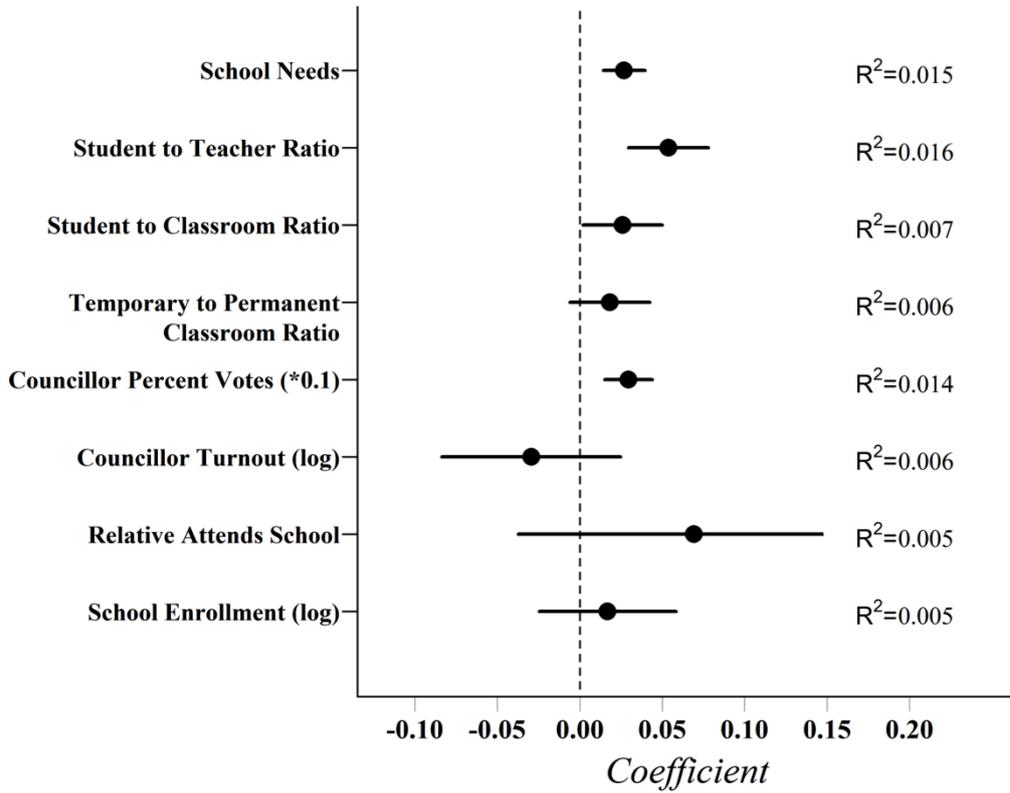


Figure shows the coefficients of fixed effect regressions of school selection on school characteristics. Horizontal lines indicate the 95% confidence interval for each coefficient.

5.3 Estimation

Our goal is to estimate the effect of transparency on the probability that a needy or high vote school will be selected by an incumbent. Following our pre-analysis plan, we estimate the average treatment effect using a fixed effect regression clustered at the level of the incumbent. Formally, let Y_i be the outcome variable for each school i within ward j and district k . Y_i equals one if school i was selected to receive development goods and zero otherwise. Let $T_j \in [0,1]$ be our randomly assigned treatment. Our treatment equals one if the ward has been assigned to a treatment group and zero if it is in a control group.

Our baseline effects can be estimated as follows:

$$\Pr(Y_i = 1) = F(\alpha + \beta_1 X_i + \beta_2 (T_j * X_i) + v_j) \quad (1)$$

Here, X_i is a school-level covariate, such as the number of votes received by the incumbent. v_j is a ward-level fixed effect. We also estimate this model with fixed effects for each map used in the experiment with similar effects. Our within-ward treatment effect (for each level of the covariate X_i) is equal to $\beta_2 X_i$. Note that all ward-level variables drop out due to collinearity with the ward fixed effects.

We anticipate that the effect of providing transparency will vary with the prior knowledge of each official about community and school characteristics. Let P_i be the prior level of information about the distribution of political support and need for the incumbent in ward i . We can estimate these varying effects as follows:

$$\Pr(Y_i = 1) = F(\alpha + \beta_1 X_i + \beta_2 T_j X_i + \beta_3 P_j X_i + \beta_4 P_i T_j X_i + v_j) \quad (2)$$

Our marginal treatment effect (for each level of prior knowledge) is equal to $\beta_2 X_i + \beta_4 T_j P_i$, and we plot these marginal treatment effects for all our models, and compute standard errors using bootstrapping. We expect the effect of transparency to be stronger when respondents have accurate priors about their community (when P_i is high) and weaker when respondents have less accurate priors (when P_i is low).

We report results both with and without control variables. We include control variables largely to account for the possibility that school-level characteristics proxy for some other variable. For instance, one might worry that the *School Needs* is correlated in some way with key political characteristics and it is the latter rather than the former that explains the effect of transparency.

6. Results

We begin by estimating the effect of transparency on the allocation of goods to needy schools. We expect that when incumbent decisions are announced to local development councils that this should make it more likely that needy schools benefit from distributional decisions. Our results in Table 3 are consistent with this expectation. We first consider in Column 1 the average effect of transparency on school allocation to needy schools. We see little overall effect of transparency in this model. This effect changes when we instead condition the results on the incumbents' prior level of knowledge

about school needs (Columns 2-4).²⁴ Here we see a positive and significant effect of transparency among those incumbents that are well informed about school needs. These marginal effects are plotted in Figure 7.

This treatment effect represents a sizable shift in distributional decisions. As shown in Figure 7, schools at the 0.75 percentile of need were approximately 0.06 times (18%) more likely to be selected by councillors who received the transparency treatment than by councillors who did not. Schools at the 0.25 percentile of need were approximately 0.07 times (21%) less likely to be selected by councillors who received the transparency treatment. Taken together, these results suggest that transparency resulted in a sizable shift in public welfare. Out of the 332 schools selected by councillors in the transparency condition, there were around 60 more high need schools than would have been selected had councillors not received the transparency treatment.

In Figure 8 we also plot these effects by each component of our need index. While our effects are positive across components of need, the largest effect is for school overcrowding. This is consistent with the statements of councillors themselves, who often emphasized the importance of structural overcrowding in their allocation decisions.

The fact that these effects are conditional on incumbent priors suggests that poorly informed politicians are less capable of making more efficient distributional decisions. As we noted previously, the baseline level of knowledge among incumbents is not especially high compared to what we might expect among more established incumbents. Consistent with the importance of informational priors, in other related research, we show evidence that when these same politicians are randomly assigned information about community characteristics, they are able to make more efficient decisions (Jablonski and Seim forthcoming). Another contributing factor may be that incumbents who invest in learning more about their constituency are also those incumbents which are most likely to respond positively to transparency. However our effects change little when we control for incumbent-level characteristics like age, gender and victory margin. Nor is it the case the priors are highly correlated

²⁴ The sample size changes slightly across these models due to a small number of cases where we had insufficient school-level data to evaluate incumbent priors.

with these characteristics. These suggest that these informational priors are not a strong proxy for the characteristics of incumbents.²⁵

Table 3: The Effect of Transparency and Need on School Selection

	(1)	(2)	(3)	(4)
Treatment*School Needs*Prior		0.083*	0.082*	0.111*
		-0.046	-0.046	-0.066
Treatment*School Needs	-0.006	-0.039	-0.036	-0.05
	-0.015	-0.029	-0.029	-0.041
School Needs*Prior		-0.065**	-0.065***	-0.082**
		-0.026	-0.025	-0.036
School Needs	0.029***	0.066***	0.052***	0.084***
	-0.01	-0.017	-0.018	-0.023
Observations	2,001	1,430	1,430	1,430
R-squared	0.015	0.027	0.05	0.037
Covariates	Yes	No	Yes	Yes
Ward Fixed Effects	Yes	Yes	Yes	No
Map Fixed Effects	No	No	No	Yes

*significant at 10%; **significant at 5%; ***significant at 1%. Councillor clustered standard errors in parentheses. Covariates include *Percent Councillor Votes*, *Number of Classrooms*, *School Enrollment (log)*, *Number of Female Teachers*, *Number of Male Teachers*, *Polling Station Turnout (log)*

²⁵ NOTE TO READER: We are also checking if this knowledge correlates strongly with other characteristics of the councillor, like education, party, income and occupation.

Figure 7: The Effect of Transparency on School Selection by Levels of Need

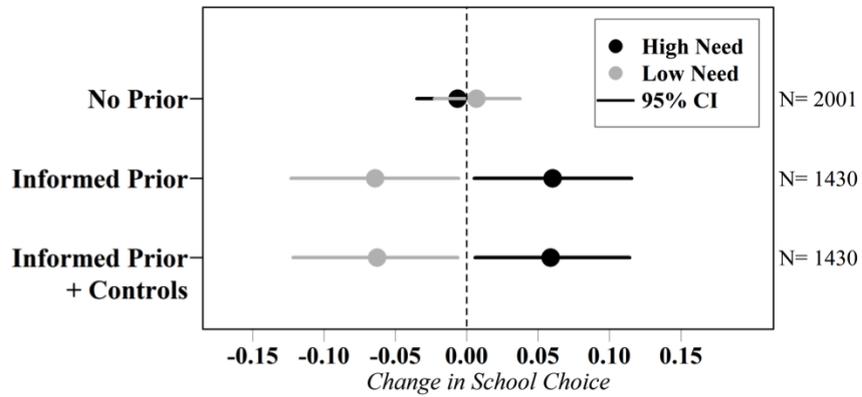


Figure shows the effect of the transparency treatment on school selection for High Need and Low Need schools. High Need schools are those at the highest quartile of *School Needs* within the councillor’s ward. Low need schools are those at the lowest quartile of *School Needs*. Includes map fixed effects and standard errors clustered on councillor. Covariates include *Percent Councillor Votes*, *Number of Classrooms*, *School Enrollment (log)*, *Number of Female Teachers*, *Number of Male Teachers*, *Polling Station Turnout (log)*

Figure 8: The Effect of Transparency on School Selection by Types of Need

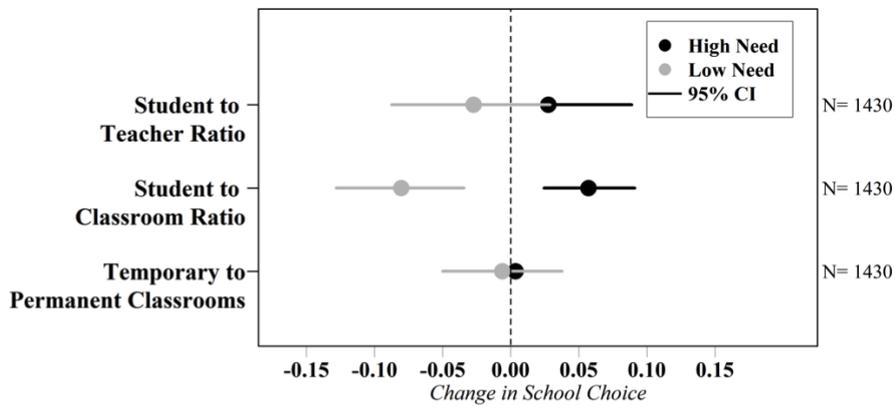


Figure shows the effect of the transparency treatment on school selection for each component of need. High Need schools are those at the highest quartile of *Student to Teacher Ratio*, *Student to Classroom Ratio* and *Temporary to Permanent Classrooms* within the councillor’s ward. Low need schools are those at the lowest quartile of each of these variables. Includes ward fixed effects and standard errors clustered on councillor. Estimates are conditional on councillors having informed priors. Covariates include *Percent Councillor Votes*, *Number of Classrooms*, *School Enrollment (log)*, *Number of Female Teachers*, *Number of Male Teachers*, *Polling Station Turnout (log)*

We next consider whether treated incumbents were less likely to allocate to schools located in communities where they received a large proportion of votes. We expect that transparency is likely to decrease the probability that incumbents target based upon political characteristics. The results in Table 4 are consistent with this hypothesis: Well informed incumbents that received the transparency treatment were significantly less likely to allocate to areas where they received a large number of votes. This result is consistent across specifications and robust to controlling for other characteristics of schools and wards. We plot the average treatment effects in Figure 9. When councillors receive the transparency treatment, they are approximately 0.05 times (13%) *less* likely to select a school where they received a high number of votes (defined as a school at 0.75 percentile of votes).

Table 4: The Effect of Transparency and Politics on School Selection

	(1)	(2)	(3)	(4)
Treatment*Councillor Percent Votes* Prior		-0.815**	-0.791**	-1.053*
		-0.378	-0.376	-0.54
Treatment*Councillor Percent Votes	-0.048	0.203	0.233	0.314
	-0.166	-0.241	-0.241	-0.342
Councillor Percent Votes* Prior		0.335	0.324	0.396
		-0.276	-0.272	-0.384
Councillor Votes	0.319***	0.249	0.227	0.308
	-0.12	-0.186	-0.185	-0.267
Observations	2,001	1,430	1,430	1,430
R-squared	0.014	0.022	0.05	0.03
Covariates	Yes	No	Yes	Yes
Ward Fixed Effects	Yes	Yes	Yes	No
Map Fixed Effects	No	No	No	Yes

*significant at 10%; **significant at 5%; ***significant at 1%. Councillor clustered standard errors in parentheses. Covariates include *Percent Councillor Votes*, *Number of Classrooms*, *School Enrollment (log)*, *Number of Female Teachers*, *Number of Male Teachers*, *Polling Station Turnout (log)*

Figure 9: The Effect of Transparency on School Selection by Councillor Percent Votes

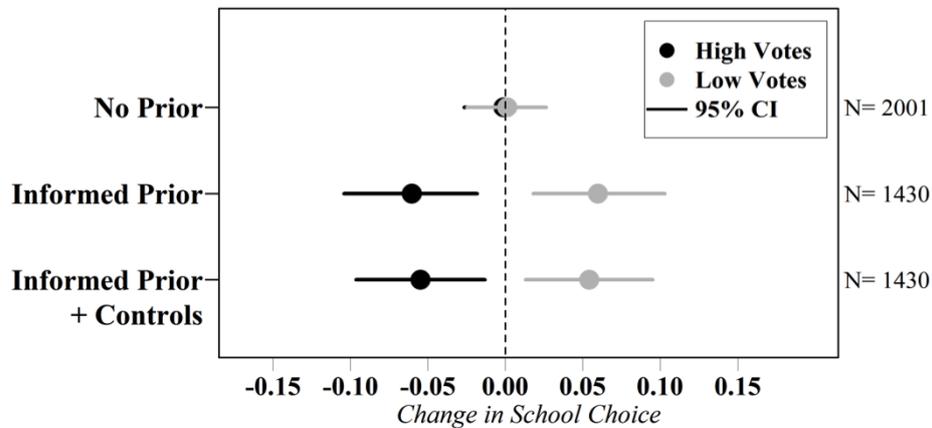
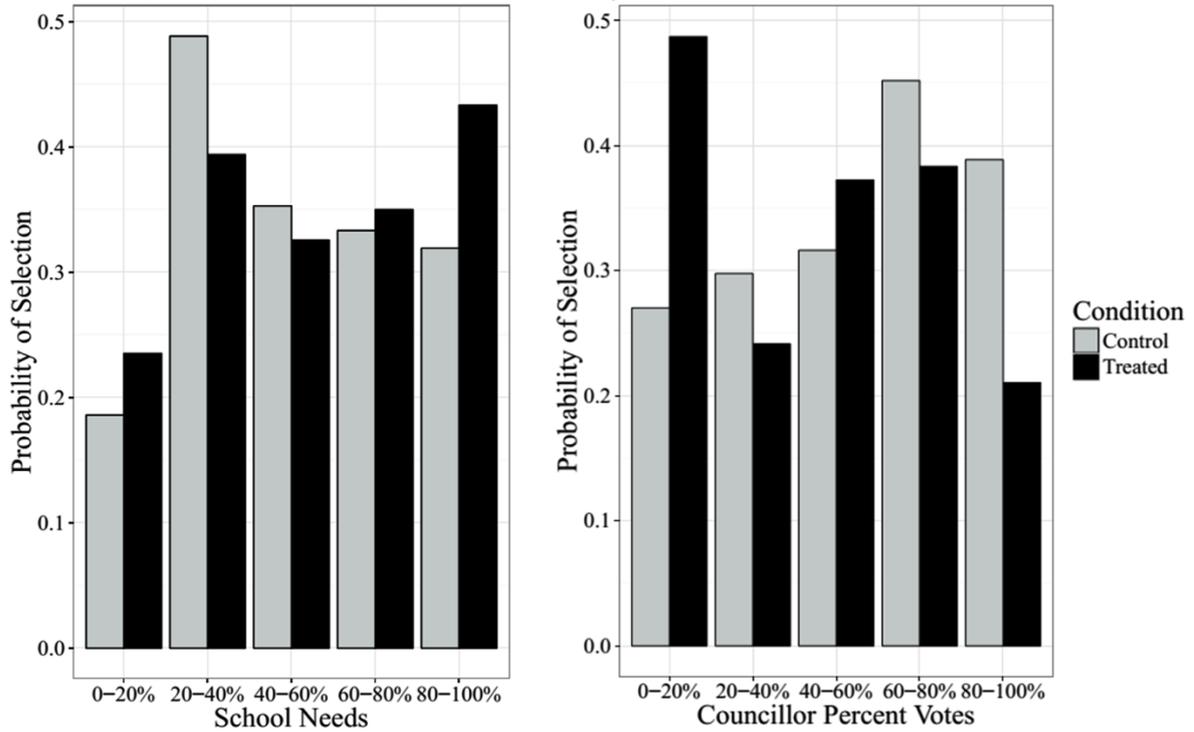


Figure shows the effect of the transparency treatment on school selection for High Vote and Low Vote schools. High Vote schools are those at the highest quartile of *Percent Councillor Votes* within the councillor's ward. Low need schools are those at the lowest quartile of *Percent Councillor Votes*. Includes map fixed effects. Standard errors are clustered on councillor.

In Figure 10 we also plot the raw data for the probability of selection by percent votes and school needs. The effects shown above are also apparent in the raw data. While certainly not conclusive, these figures also suggest that the transparency treatment tends to shift selection especially towards those schools at the lowest distribution of political support and the highest distribution of school needs.

Figure 10: Probability of Selection by School Needs and Percent Votes



The x-axis shows the distribution of *School Needs* in percentiles (panel A) and *Councillor Percent Votes* (panel B). The y axis gives the probability that a school is selected. These data are conditional on the incumbent having informed priors.

Together these results suggest a consistent story about how transparency affects distributional decisions: When incumbents have to worry about whether politically targeted distributional decisions will be observed and sanctioned by voters and other development actors, they appear to make decisions that align more with observable measures of need and less with the political characteristics of individuals.

7. Discussion and Conclusions

Citizens and members of the international development community frequently bemoan the misallocation of development goods by politicians. Such concerns have motivated reforms at the World Bank and other institutions, as well as inspired moves towards “off-budget” aid and conditionality by organizations like the U.S. Millennium Challenge Corporation. Despite this, we have surprisingly little hard data on when political development decisions are motivated by need-based concerns, and what we can do from an institutional design perspective to discourage the politicization of such decisions.

In this article, we propose a theory based upon the re-election concerns of incumbents and the effects of transparency on voter behavior. We argue that when decisions are fully transparent, incumbents should be more likely to make distributional decisions based upon observable needs due concerns that they will be sanctioned by voters who do not benefit from or care about politically targeted pork barrel spending. To evaluate this argument, we implemented a unique experiment in which incumbents made real and meaningful distributional decisions under an experimentally assigned decision environment. We manipulated the transparency of distributional decisions by informing incumbents about our intention to announce their distributional decisions to the ADC—committees that are institutionally responsible for representing village needs to councillors and informing citizens about decisions being made by their councillors.

The results confirm that transparency plays a key role in distributional decision. When decisions are more transparent, well-informed incumbents are significantly more likely to allocate to schools with observable needs and less likely to allocate to schools based upon votes. In real terms,

communities where more than 50% of votes were for the incumbent were about 12% *less* likely to be selected by the incumbent in the transparency condition than in the non-transparency condition. These large effects suggest that improving the institutional transparency of development decisions could have a considerable impact on the equity of decision-making among government officials.

This is the first experimental evidence to our knowledge confirming that institutional mechanisms of transparency can improve allocation decisions; though there are some challenges. One obvious concern is that Malawian councillors may not be representative of other systems of government. While we cannot evaluate generalizability directly, it is worth noting that the Malawi system of local government is constitutionally quite similar to that of many other states, including Kenya, Uganda and South Africa. And the devolution of development decisions to local councils is increasingly common in development democracies. Nor is it the case that the decision-making studied here is particularly unique to Malawi. Foreign donors and NGOs increasingly give funds directly to local political actors; and local and provincial politicians often serve in an advisory role in international development allocation. Another vital caveat is that the results discussed here may be relatively short-term effects. The subjects in this study had recently been elected to office and many are first-time politicians. Perhaps more experienced elected officials will be less sensitive to fluctuations in the transparency environment, especially as they continue to have opportunities to repeatedly interact with the ADCs.

This experiment implies several policy options for addressing problems of political capture and corruption in international development. One typical solution to such inefficiencies is to select on good government or good politicians, or to channel aid through non-government actors (Dietrich 2013; Svensson 1999). While not disagreeing that this can sometimes be effective, the results of this study suggest that donors can also effectively address these problems by making it easier for pre-existing stakeholders to sanction poor distributional decisions—a suggestion which others have also made but is still all too rarely implemented or evaluated (e.g., Winters 2010; Gibson, Hoffman and Jablonski 2014; Resnick and van de Walle 2013). One way to improve the ability of stakeholders to monitor official behavior is to make decision-making processes more transparent. In addition to improving development, this is likely to strengthen accountability relationships and the demand for high programmatic performance among elected officials.

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Appendix A: Summary Statistics

Table A1: Councillor Sample Statistics

	(1) Experiment Sample	(2) Excluded Sample	(3) T-Statistic
Councillor Victory Margin	0.26 [0.19]	0.23 [0.21]	1.34 [0.18]
Proportion Ruling Party (DPP)	0.36 [0.48]	0.37 [0.48]	-0.08 [0.93]
Registered Voters	18279 [7562]	12495 [11009.14]	5.76 [0.00]
Councillor Turnout	0.70 [0.07]	0.70 [0.14]	-0.13 [0.90]

Columns 1 and 2 show the means for included and excluded samples with standard deviations in brackets. Columns 3 show t-test statistics with p-values in brackets.

Figure A2: Head Teacher Survey of School Needs

“In your view, what are the top three priorities for school needs at this school?” N=315

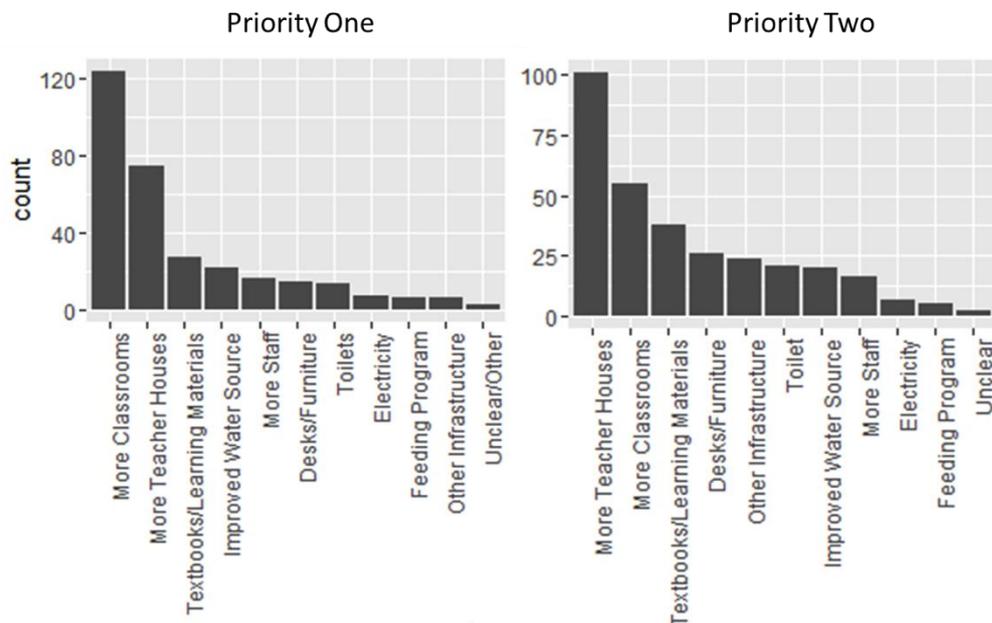


Figure shows the results of a survey in August 2016 of 315 of the schools within the experimental sample. Head teachers were asked an open-ended question about the top three priorities in their school. We categorized their responses into 11 categories. The frequency of each category is shown on the y-axis. Each category is shown on the x-axis.

Appendix B: Post-Experiment Lottery and Goods Delivery

In March 2016, we conducted a public lottery in Lilongwe, Malawi to determine which wards would receive school materials. The lottery was attended by four councillors, two teachers, several members of national civil society organizations, and local citizens. The lottery was conducted as follows: the names of all the wards in our sample were written on slips of paper and placed in a box associated with the ward's district (Figure B1, panel A).²⁶ One of the civil society representatives was then asked to blindly select four wards from each box (Figure B1, panel B). On average, each ward had a 39% chance of selection, though this varied across districts. We informed councillors of these selection probabilities in the course of the experiment.²⁷

Following the lottery, each ward selected in the lottery received school materials for one school: either a set of 10 iron sheets, a set of 10 school lamps, or a set of 10 teacher supply kits. These allocations are enough to provide roofing for a small classroom, provide lamps to all or most of the teachers, and provide a kit to all or most of the teachers, respectively. The allocation of materials for each ward was determined by resource constraints and delivery schedules. Regardless of which set of materials was being delivered, it was sent to the school the councillor had designated in that decision.²⁸ See Figures B2-4 for pictures of the goods that were delivered. These goods were delivered in November 2016. Local councillors, chiefs, head teachers and members of the community were invited to attend each delivery. See Figure B5 for a picture of a delivery ceremony at one school.

²⁶ Districts with fewer than four wards per district were combined with nearby districts.

²⁷ Specifically, councillors were told during the course of the experiment "Because of limited funding, we cannot ultimately provide materials to all schools designated by all councillors. We will select four wards in your district to receive materials by lottery. Tearfund NGO will execute this lottery on December 12, 2015. This lottery will be public and will be attended by citizens, representatives from NGOs, the media, and civil society. If your ward is chosen, the materials will be delivered directly to the schools." Councillors were later informed that the lottery would be delayed until March 2016.

²⁸ We were not able to deliver goods to all schools selected by the councillor in each ward chosen in the lottery. On average, each selected school had a 20% chance of receiving goods.

Figure B1: Pictures of Lottery Event



Figure B2: Iron Roofing Sheet with Tearfund Logo



Figure B3: Solar Lamps with Tearfund Logo



Figure B4: Teacher Supply Kits



Figure B5: Materials Handover Ceremony at Recipient School

