

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

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Abstract

How does transparency affect distributional politics? We theorize that it conditions how officials choose recipient communities, compelling them to allocate to needy communities rather than to core supporters. We present the results of a field experiment in which 333 elected incumbent councillors in Malawi made real and meaningful decisions about the allocation of NGO-provided development goods to schools in their constituency. Prior to allocating goods, half of the incumbents were informed that letters about their decisions would be sent to local development oversight committees. We find that this transparency treatment caused incumbents to allocate goods to recipient school communities with greater economic need. They were also less likely to allocate to schools with strong political support. To our knowledge, this is the first experimental evaluation of theoretical claims about the role of transparency in distributional politics using in-office elected leaders as participants and observing real distributional decisions.

1. Introduction

In making decisions about how goods, services, and policies should be allocated, elected incumbents face conflicting incentives to both maximize political support and address community needs. As a consequence, long-term development outcomes, such as infant mortality, education, and poor public services, are frequently linked as much to political and social characteristics of citizens as to economic need (Burgess et al. 2015; Jablonski 2014; Cruz et al. 2015; Franck and Rainer 2012; Kramon and Posner 2013; Khemani 2015; Lizzeri and Persico 2001). This trade-off between efficiency and political expediency is particularly poignant in developing, consolidating democracies where parties are poorly institutionalized, transparency mechanisms are weak and allocation decisions are highly partisan (Dionne et al. 2016; Ejdemyr et al. 2015; Chinsinga 2011; Keefer and Khemani 2004).

When might elected incumbents in developing countries opt out of politicized allocation and instead allocate based upon more programmatic criteria like need or poverty? Our contention is that the decision by incumbents to allocate programmatically depends in part upon the transparency of the decision. When incumbents are able to conceal their decisions so that only recipients are aware of the allocation of funds, then targeting specific citizens with resources can be an efficient way to garner votes. However, when allocation decisions are public, incumbents have to worry that excluded citizens will sanction them, either for poor programmatic performance, or for political favoritism. Incumbents 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 incumbents who engage in political favoritism. As a consequence, we expect transparency to increase the tendency to allocate based upon programmatic criteria and reduce the tendency to engage in politicized allocation.

Empirically documenting the relationship between transparency and allocation decisions is challenging. One reason is that most allocation decisions by elected officials are made in a kind of institutional “black box.” While we can observe the outcome of allocation decisions, we rarely have 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 democracy where allocation decisions are often the result of lengthy decision chains involving many stakeholders at multiple levels. This makes it even more difficult to come to clear conclusions about the incentives of specific incumbents. Research on this topic is further stymied by the fact that incumbents 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 studying the relationship between transparency and decision-making observationally: particularly transparent areas might also be least politicized, preventing researchers from documenting causal relationships.

In this paper, we present the results of a unique field experiment among elected officials in Malawi designed to overcome these three challenges in identifying the causal effect of transparency on distributional decision-making. The experiment participants are 333 in-office locally elected incumbent councillors in Malawi (72% of the councillors in the country). We observe these incumbents as they make real decisions about the allocation of development goods provided by an international NGO, a common distributional decision for politicians in many aid-dependent states. Trained RAs provided incumbents maps showing the locations of schools in their constituency, and asked them to allocate a development good from the NGO (either iron roofing sheets, teacher supply kits, or solar lamps) to one school off each map. Using official records, we coded each school for its political and economic characteristics and then randomly selected schools to appear on each map. To causally identify the effect of

transparency on distributional decisions, we randomly assigned half of the incumbents to a transparency treatment in which they were told before making their decisions that their school allocations would be conveyed to the Area Development Committee (ADC), an oversight committee consisting of village and community leaders formally empowered to liaise between citizens and the government to foster development and monitor and manage development initiatives in the constituency.

Consistent with our theory, we find that incumbents who were randomly assigned to this transparency intervention were more likely to allocate goods in line with need and less likely to allocate in line with the political characteristics of communities. However, this effect is only detected among the subgroup of incumbents who demonstrate they are informed about the distribution of political support or economic need across their constituency, suggesting that constituency knowledge can mediate the effect of transparency; though we make this claim cautiously since constituency knowledge may be associated with other unobserved factors.

Our primary contribution is to provide theory and evidence for how transparency mediates distributional decisions around development. As part of this effort, we bring together several literatures in political science that have previously been separate. Theoretically, we build upon several innovative models about how and when incumbents opt out of clientelistic or pork barrel type distributional strategies, and instead invest in public goods or programmatic allocation (Stokes et al. 2014; Weitz-Shapiro 2012; Gottlieb 2016; Keefer and Vlaicu 2008; Robinson and Verdier 2013; Keefer and Khemani 2009). We also offer new evidence in support of some of these arguments. We also draw on and contribute to a rich literature showing that experimentally varying transparency can condition political performance by affecting voter behavior (Reinikka and Svensson 2005; Banerjee et al. 2011; Buntaine et al. 2017a; Chong et al. 2015; Keefer and Khemani 2005; Ferraz and Finan 2011).

While this literature has generally shown positive effects of transparency on voter behavior, the relationship between transparency and incumbent performance is contested, and several recent studies have shown how transparency can create incentives for incumbents to pander, manipulate information and obfuscate performance indicators (Cruz et al. 2015; Malesky et al. 2012; Ashworth, Bueno de Mesquita and Friedenbergl 2016; Humphreys and Weinstein 2012).

This research also contributes to debates over how international donors can best channel development aid, and how donors might contribute to institution building (Krasner and Weinstein 2014; Gibson, Hoffman and Jablonski 2016; Resnick and van de Walle 2013). Donors in poorly institutionalized settings face the often contradictory imperatives to build local capacity and to minimize the political capture and corruption that arises from delegating 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 political capture and corruption (Jablonski 2014; Winters 2010; Dietrich 2013). Our study suggests a way out of this conundrum: 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 only benefiting the politically powerful. To our knowledge, this is the first attempt to study the effects of transparency on distributional decision-making using an experimental design that involves in-office elected officials as participants and examines the allocation decision directly.

In the following sections, we present our theory of how transparency affects distributional politics and delineate our pre-specified hypotheses about how we expect transparency to affect decisions among incumbent councillors in Malawi.² We then detail our experimental

² Our pre-analysis plan was registered at EGAP prior to assigning treatment. It is available at <http://egap.org/registration/1588>. We provide a list of deviations in Appendix E.

design and discuss our analysis 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 citizens are completely informed about government distributional decisions. How would such a model differ from one in which citizens are incompletely informed? To evaluate this, consider the scenario in which an incumbent allocates school goods to communities in her constituency. Consistent with other studies (e.g., Persson and Tabellini 2002), our model of distributional decisions includes three assumptions. First, incumbents make this allocation decision with the primary goal of maximizing vote share. Second, the welfare returns from the goods are not equal across these communities: some schools have fewer goods or worse classrooms and will therefore benefit more than others. Third, the political returns from the goods differ: communities vary on the extent to which their citizens are pivotal in the election and in their level of responsiveness.

How might an incumbent make such a decision? Under complete information, most theories would suggest the answer depends upon voter preferences: If citizens only care about the short-term, focused income effects of transfers, then – all else equal – the vote maximizing strategy is to give goods first to the most electorally 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 citizens should first 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.³

³ In Dixit and Londregan (1996) pivotal voters could be core or swing voters depending upon the distributional efficiency of allocations across groups.

This logic changes, however, when we consider citizens with preferences about aggregate group welfare; or those who have normative concerns or valence preferences. In particular, we are interested here in what we call “programmatic targeting” – that is, allocating to those areas where citizens anticipate the greatest welfare return for their constituency rather than for themselves. Citizens might value programmatic targeting for several reasons: 1) They believe that their welfare is tied more to development outcomes across the constituency rather than localized community wealth; 2) They have normative concerns about the efficient and effective allocation of goods that results in a bias against political targeting in favor of programmatic targeting; or 3) They believe that the way incumbents allocate goods reveals information about incumbents’ development preferences or valence. If an incumbent gives money to a needy area, they may believe that incumbents will take similar actions in the future and will provide more benefits in the long-run (Fujiwara and Wantchekon 2013; Keefer and Vlaicu 2008; Klopp 2002; Lynch 2008; Wantchekon 2003; Weitz-Shapiro 2014). If citizens have preferences over programmatic targeting, political targeting is a potentially costly strategy since it will cost the incumbent votes in communities that care about programmatic outcomes or are willing to sanction political targeting. The incumbent will gain votes only in the specific community where the money is spent.⁴

How might information affect this trade-off between political targeting and programmatic targeting? Note that the programmatic distributional strategies discussed above depend crucially on citizens being able to *observe* allocation decisions. If allocation decisions are non-transparent and all citizens observe allocation in their own community, then incumbents have no incentive to deviate from a strategy of targeting pivotal voters. Even if citizens care about rewarding programmatic targeting and sanctioning political targeting,

⁴ This logic is akin to Keefer and Vlaicu (2008): in their model, voters care about both targeted transfers and public goods outcomes. As incumbents can credibly and cheaply commit to investing in public goods, incumbents should target most allocations towards public goods out of concern that voters will sanction incumbents for inefficient allocation outcomes.

their ability to do so is negligible if they do not have transparent and credible information about allocations outside of their community. Consider, for instance, an incumbent that constructs a water point in a village in which she has strong political support. Even if that village cares about programmatic outcomes, many in that village are likely to reward the incumbent for spending money in their community. So, as long as this allocation is private, this water point is probably an electorally advantageous investment for the incumbent. Now consider if other villages are also informed. In this instance, those villages which did not benefit may choose to sanction the incumbent for spending public funds on core supporters rather than in an area that might be needier. This bias in favor of programmatic targeting may cost the incumbent votes and undermine the advantages of politically biased allocation.

Several assumptions are embedded in this theoretical model, which we validate for our research context in the next section. First, we assume that citizens—absent any intervention—lack sufficient information about allocation decisions to reward and sanction elected officials. The literature seems to support this assumption. Buntaine et al. (2017b), for instance, examine the effects of comparative information about public services in Uganda. They show that only 37% of citizens could correctly evaluate the quality of public services in their village compared to that of other villages in their sub-county, suggesting that they have difficulty remaining informed about allocations outside their specific community. Other studies document similar information gaps in other contexts (Cruz et al. 2016; Reinikka and Svensson 2005; Pande 2011), and we discuss evidence from Malawi below.

Such information gaps are unsurprising considering that transparency is often not advantageous for incumbents. Programmatic targeting is expensive, running the risk of alienating one's core supporters and diverting funds that might be channeled for political gain. In addition, transparency might reveal previous indiscretions of patronage that will hurt an incumbent's career. Thus, many incumbents would prefer a world in which citizens with

strong programmatic preferences remain ignorant of the extent of political targeting.

Consistent with this argument, we often observe incumbents obfuscating the nature of allocation decisions, particularly when such allocations might be used for political patronage; governments shirk on audits, undermine anti-corruption institutions, or refuse to release accurate budget information (Berliner 2014; Mwenda and Tangri 2005; Wrong 2010). Even in more transparent environments like the United States, we observe incumbents trying to hide politicized allocation through earmarks and other less transparent budget measures.

Our experiment focuses on the allocation of foreign aid, where these information gaps are particularly acute (Easterly and Pfutze 2008; Ghosh and Kharas 2011). Unlike public budgets, many aid projects are negotiated bilaterally between recipient governments and donor representatives. Citizens often lack insight into the size of budgets, who was involved in the negotiation, or donor stipulations on the allocation. Many local institutional actors, like development committees and local elected officials, are also commonly excluded from allocations decisions regarding donor funds. These various obfuscations involved in donor-funded development projects make it challenging to know whether incumbents have engaged in political targeting rather than programmatic targeting in the allocation of these projects, or even whether incumbents were involved in the decision at all.

We also make two assumptions about voter behavior. We assume that citizens can and will sanction incumbents who engage in political targeting and will reward those who engage in programmatic targeting. One piece of evidence for the latter is the extent to which we see citizens mobilize in elections against tribalism, or the allocation of goods to one's co-ethnics rather than based upon need (Lynch 2008; Klopp 2002). Both assumptions are also supported by voting experiments which document an effect of transparency or information on the willingness of citizens to support programmatic targeting and/or sanction political targeting (Banerjee et al. 2011; Buntaine et al. 2017a; 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 citizens prefer programmatic targeting when they are not beneficiaries of political targeting, candidates that relied on programmatic appeals received considerably higher vote shares in areas where they were not previously dominant.

It is worth emphasizing that our argument is not that transparency makes electoral incentives less salient, but rather that, in a more transparent decision environment, making decisions based on objective and commonly known efficiency criteria becomes more electorally valuable to incumbents by capturing the support of a wider group of citizens. We therefore expect the effects of transparency to be particularly strong in cases where incumbents anticipate contesting competitive elections. 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 different policy recommendations, as we emphasize in the conclusion.

It is also important to note that, 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, oversight committees, donors and district officials. As we note later on, it can often be difficult to empirically distinguish institutional sanctioning and vote-based sanctioning. We provide examples of both kinds of sanctioning in our discussion of the Malawi case.

Taken together, our arguments suggest that transparency should increase allocations among more needy citizens (programmatic targeting) and should decrease allocation to an

incumbents' core political supporters (political targeting). We also expect that these effects will be particularly strong among incumbents that face electoral pressure.

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.

H3. The effects of transparency will be stronger when incumbents face electoral pressure.

3. The Context

Understanding distributional efficiency is particularly important in Malawi. The World Bank's Worldwide Governance Indicators (WGI) suggests that Government Effectiveness in Malawi has declined from an already poor ranking of the 42nd percentile in 2010 to the 26th percentile in 2015, in part due to corruption and public mismanagement (World Bank 2017). The shortcomings in government effectiveness reinforce and are reflected in Malawi's high poverty levels. The UNDP ranks Malawi 170 out of 188 countries in human development with over 77% of the population living below a poverty rate of \$1.90/day (UNDP 2016). There are also considerable inequities in development, driven in part by political bias (Ejdemyr et al. 2015; Resnick 2013)

Under the National Decentralization Policy and Local Government Act of 1998 and related laws, Malawi has decentralized most development and distributional decisions. These 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. In practice, administrative and fiscal decentralization have been rolled out in a disjointed

fashion over the last two decades and de facto control remains more centralized. Nonetheless, decentralized government structures have considerable authority over development decisions.

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 is 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.⁵ 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.⁶

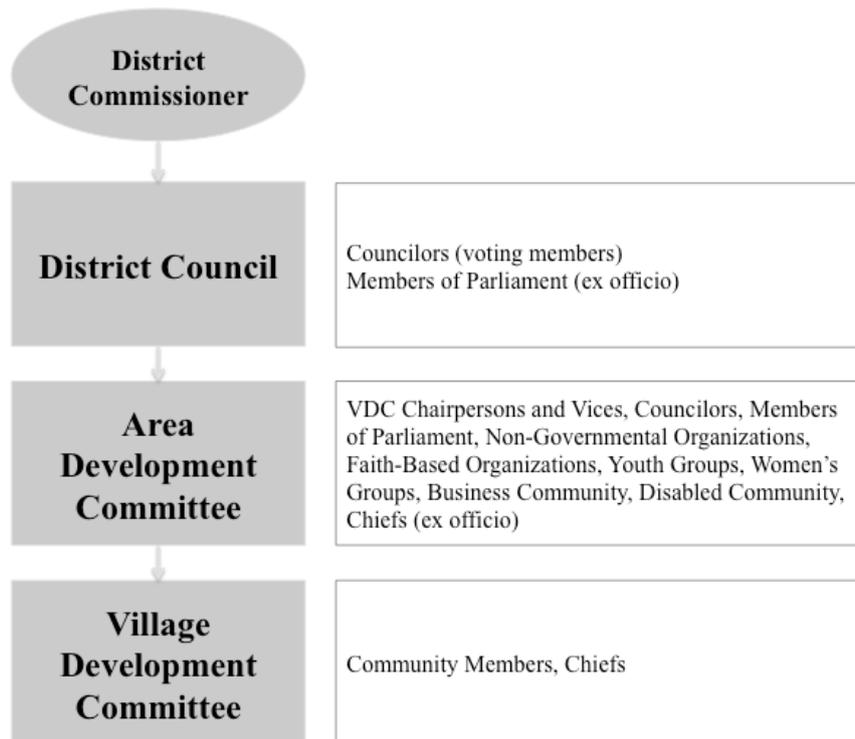
Though nominally chaired by the DCs, councillors are the voting members on these district and municipal councils. According to the Local Government Act, councillors should be elected in single-member wards every five years and are responsible for a large share of local public goods and services provision. However, councillors were out of office from 2005-2014 after then-President Bingu wa Mutharika cancelled local elections. In this time period, local government consisted of appointed officials, who took on many of the roles formerly assigned to elected councillors. Local elections were again held in May 2014, and 462 councillors were elected. This institutional glitch creates a “hard case” for studying distributive politics. Almost all of the elected councillors have not served in elected office before and may be less likely to know the rules of the distributive politics game.

⁵ Based on 2011-2012 budgets, the most recent data available. An exchange rate of MK150=US\$1 was used.

⁶ Data on 2016-2017 SIG allocations collected from the District Education Manager in each district. An exchange rate of MK700=US\$1 was used.

The Local Government Act also created several additional government structures to liaise with citizens and assist councils in making allocation decisions. In this project, we particularly focus on Area Development Committees (ADCs). These oversight 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. The role of the ADC is to facilitate community participation in development decisions, as well as to provide input to the District Development Plan, which is supposed to guide council allocation decisions (Chasukwa et al. 2014; 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 often serving as brokers and mediators between councillors, the oversight committee, and citizens. ADCs track citizen public opinion by routinely consulting with lower-level VDCs, run by a mixture of appointed and elected and traditional village leaders.

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



These governing bodies and the development projects they manage are in a large part funded by foreign donors. 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 allocations (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.⁷ Yet Malawi's aid and development record is far from clean. Many criticize 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 (Dionne, Kramon and Roberts 2014). As one interviewed District Commissioner said, "Whenever [we] conduct

⁷ Author focus groups with councillors.

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.”

The theoretical assumptions we presented above are valid in the Malawi context. First, there are information gaps among citizens about government action. In a survey we conducted of 2,000 citizens and head teachers in 2016, information about local government allocations was incredibly low. Only 4% of citizens were able to recall something that their councillor had done for a school outside their community. In reality, according to head teachers in the survey, councillors have done projects for 18% of schools. Similarly, incumbents in our study are aware of the power of information. They attempted to spin or manage the revelation of allocation information by preventing us from delivering transparency treatment letters, or by intercepting such letters in district offices.⁸

Yet, citizens in Malawi are nonetheless invested in the development activities of district government. In the same survey, there was a strong and positive correlation between the perception that a councillor was effective and plans to vote for the councillor again ($r=0.5558$, $p\text{-value}<0.000$). Focus group discussions with citizens confirm voter willingness to sanction political targeting and reward programmatic targeting. Citizens criticized political targeting, saying, “[Councillors] always think of where they come from first,” and, “[Councillors] do not do what the people want. They use us for campaigning.” Citizens also expressed a strong preference for incumbents who disavow such tactics, saying for instance that, “We vote for [our incumbent] 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.⁹

⁸ For example, incumbents would often offer to “hand deliver” notices to the ADC rather than to have the research team send them directly. In other cases, incumbents appear to have intercepted letters in district offices.

⁹ Consistent with our theoretical argument, such concerns were not limited to those teachers that failed to benefit from project allocations.

Incumbents are also sensitive to the satisfaction of citizens. 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 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 councillor had organized. One councillor said he tries to avoid things that would make citizens “get cross.”

4. Research Design

4.1 Overview

This research is based on a field experiment conducted among 333 incumbent 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 and focus group discussions asked questions about decision-making, transparency, accountability, and relationships across government stakeholders. We also conducted a survey among 2,000 citizens and head teachers across 60 of the 462 wards in Malawi. The survey asked questions about local school conditions and perceptions of councillor performance. Among head teachers, we also used the survey 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 councillors. Further details on this survey are in Appendix D.

4.2 *Experiment Design*

This research is unique in its use of an experimental lens to study real-time decisions by in-office elected officials.¹⁰ Experiments on elected officials remain rare due to the logistical challenges and costs involved. However, for this research question there is considerable value in being able to clearly delineate causal mechanisms in a research area that has been burdened with many diverging theories and much contested evidence.¹¹

In face-to-face interactions, 333 incumbent councillors in Malawi participated in an experiment intended to evaluate the role of transparency on allocation decisions. An RA provided each of these incumbents with the option to allocate development goods from an international NGO to three schools in their constituency.¹² In order to solicit this decision, the RA showed each incumbent three maps, each of which indicated the location of three randomly selected schools in their constituency.¹³ The RA explained that if the incumbent 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.¹⁴ Each incumbent allocated goods to a total of three schools out of a possible nine.¹⁵ An example of the map displayed to incumbents is shown in Figure 2 below. When receiving this map, incumbents

¹⁰ 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; Enemark, Gibson, McCubbins and Seim 2016; Malesky et al. 2012.

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

¹² Councillors in Malawi are elected in units called “wards.” However, to align with the broader distributive politics literature, we use the term “constituency” to refer generally to the incumbent’s electoral unit. This should not be confused with the Constituency, which is a higher-level electoral unit in Malawi from which Members of Parliament are elected.

¹³ The three schools were randomly selected from a comprehensive list of primary schools in the constituency 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.

¹⁴ Ultimately, about 20% of the schools selected by politicians were chosen in the lottery to receive goods from the NGO. A full description of the lottery process is provided in Appendix D.

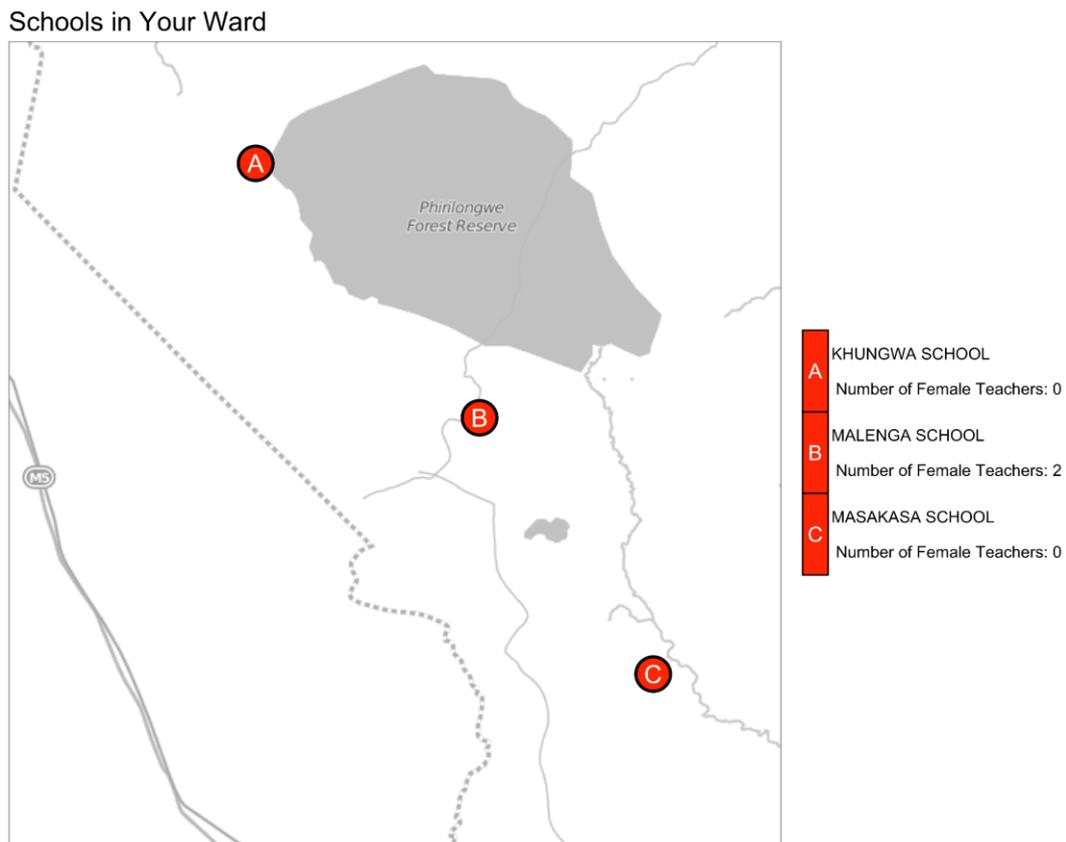
¹⁵ Most incumbents chose three schools; however within some smaller wards it was not possible to generate three maps because there were not at least nine schools available. In such cases, incumbents only chose one or two schools to receive the goods.

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 sheets/teacher supply kits/solar lamps]. Please take your time in making this decision.” A full example survey is provided in Appendix F.

As can be seen in Figure 2, incumbents in some cases were randomly assigned to receive information about the characteristics of particular schools in their constituency (such as the number of female teachers) as part of a separate experiment that assessed the role of information and credit claiming in distributional decisions. This information treatment was orthogonal to the transparency treatment by design and there were no significant interactions between the experiments. We discuss the results of this other experiment in a companion paper.¹⁶

¹⁶ The full set of treatments can be viewed in our pre-analysis plan.

Figure 2: Example School Decision Map



In each of the three distributional decisions, the incumbent allocated a different development good. One of the goods was a set of iron roofing sheets. Few schools in Malawi have adequate classrooms, and the rainy season often means that classes are cancelled, so roofing sheets are a valuable good for efficiently improving the learning environment. The second development good was a set of solar lamps. As few schools in Malawi have electricity, solar lamps can provide light for teacher preparation and student studying in the evenings. The third type of goods was teacher supplies kits, which include chalk, pens, notepads, and a plastic tote bag.¹⁷ We chose these goods based on discussions with donors

¹⁷ The order in which incumbents made decisions over different goods was randomly assigned. In Appendix Figures B1 and B2, we evaluate heterogeneous treatment effects by good type. We see little evidence that treatment effects differ across goods.

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.¹⁸

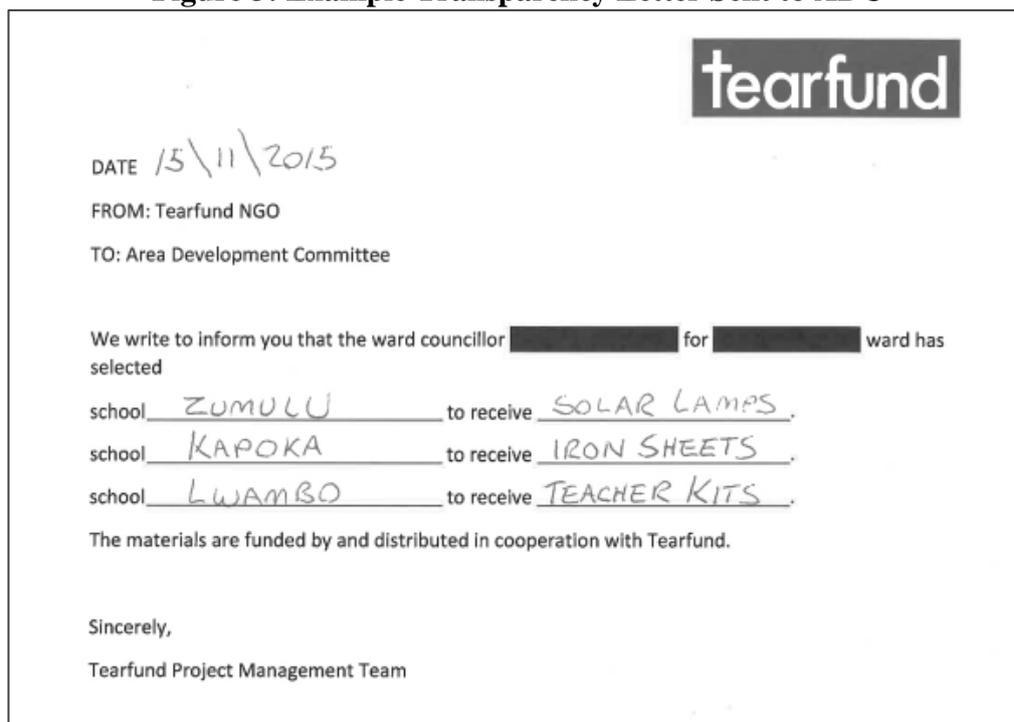
At the incumbent level, we randomized the level of transparency associated with the incumbent's decision. Our goal with this treatment was to maximize the likelihood that local stakeholders, traditional authorities, village leaders and institutional bodies would be made aware of how the distributional 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 oversight 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. These oversight committees are largely seen as effective and non-political by citizens and incumbents.¹⁹

The transparency treatment took the following form: Before an incumbent decided which schools in her constituency should receive the school supplies, the RA told the incumbent that a letter with her name and the schools she allocated goods to will be sent to the ADC (transparency treatment) or that no one will be told which schools were allocated goods (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 by our research team, several of whom later called us to receive additional details about the allocation decision.

¹⁸ Pictures of these goods are in Appendix C, and we evaluate local average treatment effects for each good in Appendix B.

¹⁹ Author focus groups with voters and interviews with councillors.

Figure 3: Example Transparency Letter Sent to ADC



It is important to note that the ADCs are seen by councillors and citizens as a core part of decision-making at the local level; so by informing ADCs of these decisions, we are not administering an artificial treatment. 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.” 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 development projects between the assembly and the communities.” A councillor put it this way: “The ADC acts as a link between citizens and the councillor.” Consistent with this role, 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. Once delivered, 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.

Incumbents viewed the decision to allocate aid through our experiment as a realistic and meaningful decision. About 30% of the sampled incumbents contacted us following data collection to learn when the lottery would be held and the goods delivered. Many incumbents also opted to attend the lottery and/or the post-lottery delivery of school supplies. Also, consistent with our proposed mechanisms, incumbents expressed concerns about the oversight of citizens and ADCs. Several incumbents requested a certificate proving that they participated in the meeting on behalf of their citizens and that they did not receive goods in the initial meeting with the research assistant.²⁰ These incumbents said that citizens often take note of donors coming to visit them, and if the incumbent does not provide anything to citizens after the meeting, citizens accuse the incumbents of stealing whatever the donors presumably left.

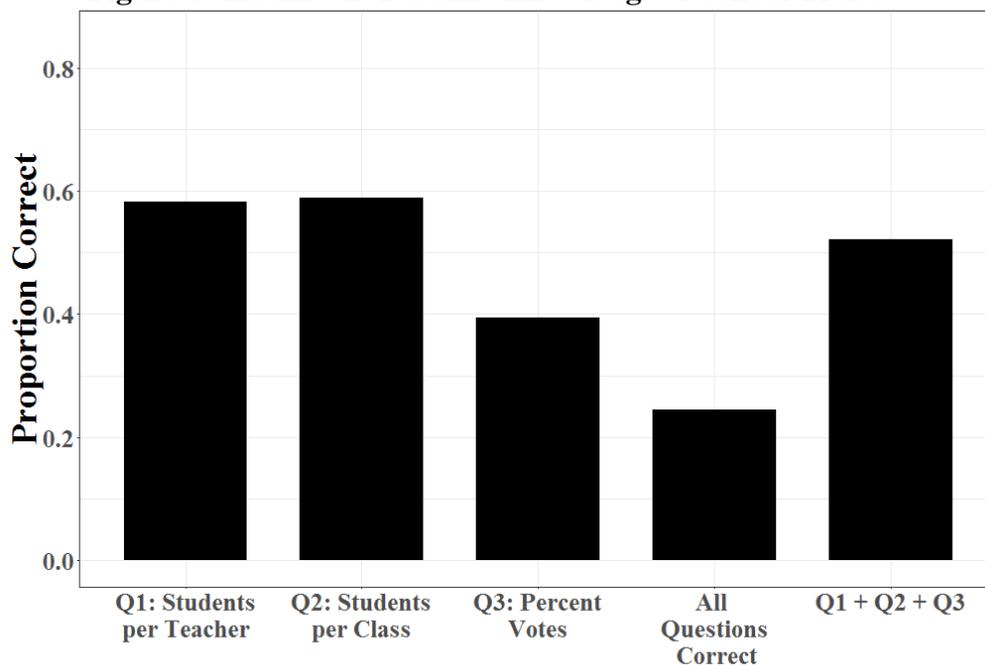
We had several instrumental concerns that we dealt with in the course of the experiment. First, we were worried that incumbents may not always understand the information on the maps and the decisions that they were making. To alleviate this concern, we began the experiment with a training exercise in which incumbents were shown a map of schools in another community outside their constituency and asked several questions about features of the map. Only once incumbents were able to correctly identify the map features did the experiment continue.

A second concern was that incumbents might not be well informed about the characteristics of schools in their community, which could result in a false null. To alleviate this concern, we concluded the experiment with an additional map and asked incumbents to

²⁰ 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.

allocate goods to 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 incumbent’s level of knowledge. We show the results of this quiz in Figure 4 below. While some incumbents have considerable knowledge, there is also variation: 24% of incumbents could correctly answer all the information about school characteristics and 40% could correctly name the community in which they received the lowest percentage of votes. This low baseline level of knowledge is not particularly surprising since these incumbents were only two years into office.²¹

Figure 4: Incumbent Baseline Knowledge of School Traits



Notes: *Students per Teacher* indicates the proportion of respondents that could correctly indicate the school with the lowest level of students per teacher. *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. *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.

²¹ We analyze the characteristics of incumbents that score well in Appendix Table B1.

Sampling

Our final sample includes 310 elected councillors. Out of the 462 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%.²² Out of the 333 incumbents 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%. An additional 15 subjects were dropped due to technical issues, for an attrition rate of 5%.²³ No subjects refused to participate in the survey. The resulting 310 sampled incumbents are reasonably representative of the distribution of councillors as a whole in Malawi, as shown in Table A1 in Appendix A. One exception is that we tended to under-sample less populated areas, largely due to the greater data availability challenges in these areas. The incumbents are also well distributed geographically across Malawi, as shown in Figure 5.

Within this sample, half of the incumbents 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.²⁴ In Table A2 in the appendix, we show similar balance statistics across all covariates used in our analysis.

²² 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),

²³ For instance, a couple incumbents were assigned the wrong survey by our research team. In another case, mistakes in National Statistics Office map files resulted in incorrect maps being used in the experiment.

²⁴ In Appendix A we provide balance statistics across all covariates specified in the pre-analysis plan.

Figure 5: Map of Treatment and Control Incumbents

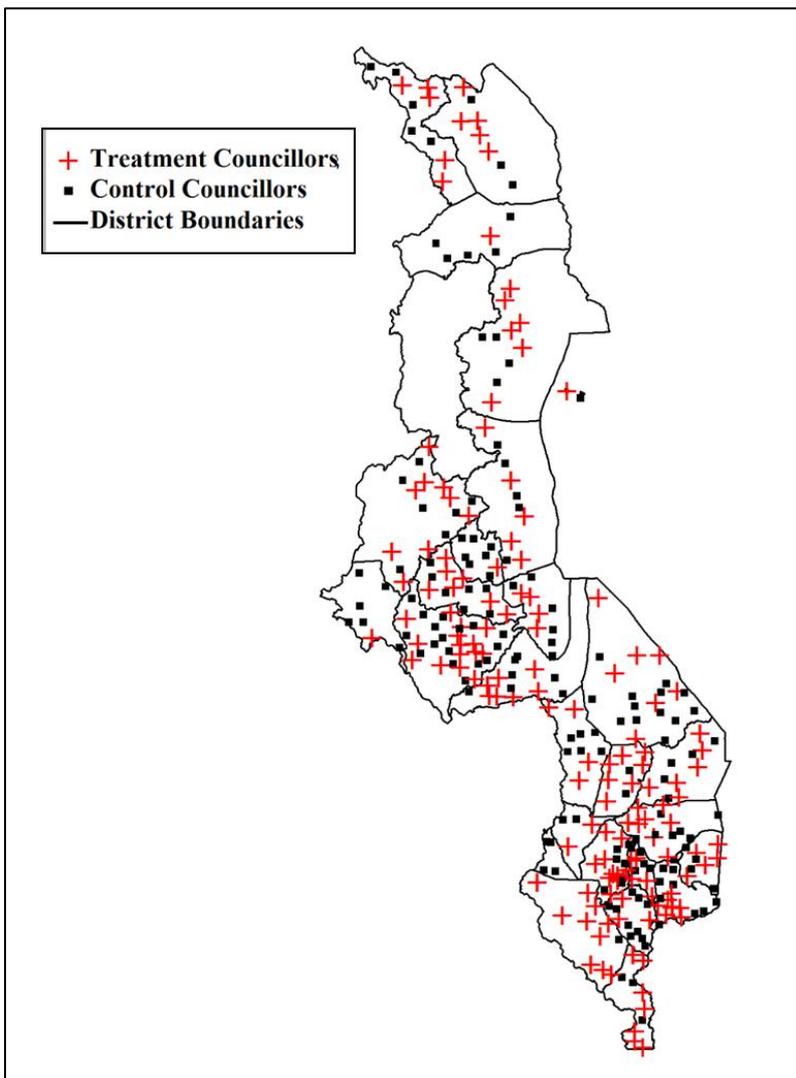


Table 1: Balance Tests

	(1)	(2)	(3)	(4)
	Treatment Wards	Control Wards	T-Statistic	Kolmogorov- Smirnov Statistic
Average School Enrollment	952.48 [451.51]	933.93 [380.35]	-0.39 [0.70]	0.08 [0.67]
Average Student-Classroom Ratio	136.98 [114.86]	138.73 [90.29]	0.15 [0.88]	0.11 [0.27]
Incumbent Gender	0.89 [0.32]	0.91 [0.28]	0.72 [0.47]	0.02 [1.00]
Incumbent Victory Margin	0.24 [0.18]	0.27 [0.20]	1.16 [0.25]	0.09 [0.56]
Incumbent Turnout	0.69 [0.08]	0.70 [0.06]	1.23 [0.22]	0.15 [0.07]
Percent Votes President Mutharika	0.42 [0.32]	0.39 [0.31]	-0.61 [0.54]	0.11 [0.38]
Registered Voters	18,396.85 [8,258.67]	18,160.60 [6,886.20]	-0.27 [0.79]	0.07 [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 the role of school needs and political support, though we also consider other potential drivers of school allocation. Below we describe our approach to measuring each of these variables, as specified in our pre-analysis plan.

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 2014 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).

Though not an exhaustive survey of school needs, these data allow us to measure three highly visible characteristics of need. First, we measure structural overcrowding using the ratio of students per classroom. Structural overcrowding is among the more severe problems facing schools in Malawi; on average, primary school classrooms have 138 students each, though some have more than 300. 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, primary school teachers are expected to teach 75 students on average, though some have more than 200. Third, we measure the quality of existing classrooms by looking at the ratio of temporary classrooms to permanent classrooms. The quality of temporary classrooms vary in Malawi, but they are most often of extremely poor quality - sometimes a lean-to or a borrowed residence.

We expect these measures of school need to be correlated with effective development allocation. When making decisions about education projects, elected officials reported to us in interviews that they consider these pieces of information – specifically, they mention enrollment levels, numbers of school blocks, and numbers of teachers houses. However, several also mentioned 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 access information about schools in their constituency from the District Education Manager, the Ministry of Education, or the head teachers themselves.

In our analysis, we analyze the effects of each of these components of need separately. In addition, as specified in our pre-analysis plan, we create an overall index, *School Needs*, which is equal to the sum of the z-scores of the three measures of school needs.²⁵

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. Further, during the experiment, we asked incumbents to justify their decisions. Among the 299 that gave an answer, 31 specifically mentioned classroom or teacher overcrowding.²⁶ These variables also appear important for actual decision-making as we show in Figure 6.

As a further validation exercise, and to ensure that these measures align with on the ground conditions, after this experiment was concluded we visited 315 of the schools in our sample and conducted interviews with head teachers and citizens, as well 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 D, the results align well with our chosen measures of school needs, as well as the justifications for their decisions in the experiment that incumbents provided. The highest priority issue by far (named by over 60% of head teachers and citizens) 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

²⁵ $School\ Needs = \frac{\mu_1}{\sigma_1} + \frac{\mu_2}{\sigma_2} + \frac{\mu_3}{\sigma_3}$ where μ_i and σ_i indicate the means and standard deviations of the student to teacher ratio, student to classroom ratio and temporary to permanent classroom ratio for all available primary and secondary schools in Malawi.

²⁶ Most answers were generic statements about considering school needs, though some incumbents also mentioned political concerns.

candidates for district-level councils. Nearly all polling stations are set up 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 citizens are most likely to be targeted by pork barrel or clientelistic allocations, 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 allocations will be targeted to core supporters of incumbents due to incumbents' greater 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 2008; 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 allocations, including that funded by foreign donors, are 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). Our interviews with incumbent councillors confirmed that targeting core voters is a common strategy among elected officials. Our focus groups with citizens also confirmed that incumbents are often perceived to target allocations to areas where they received a high

proportion of votes. Finally, during the experiment, incumbents directly admitted to targeting core supporters via their decisions. One respondent, when asked to justify his decisions, explained that he “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.” As discussed below, we also confirm empirically that incumbents are more likely to target core supporters during the course of the experiment.

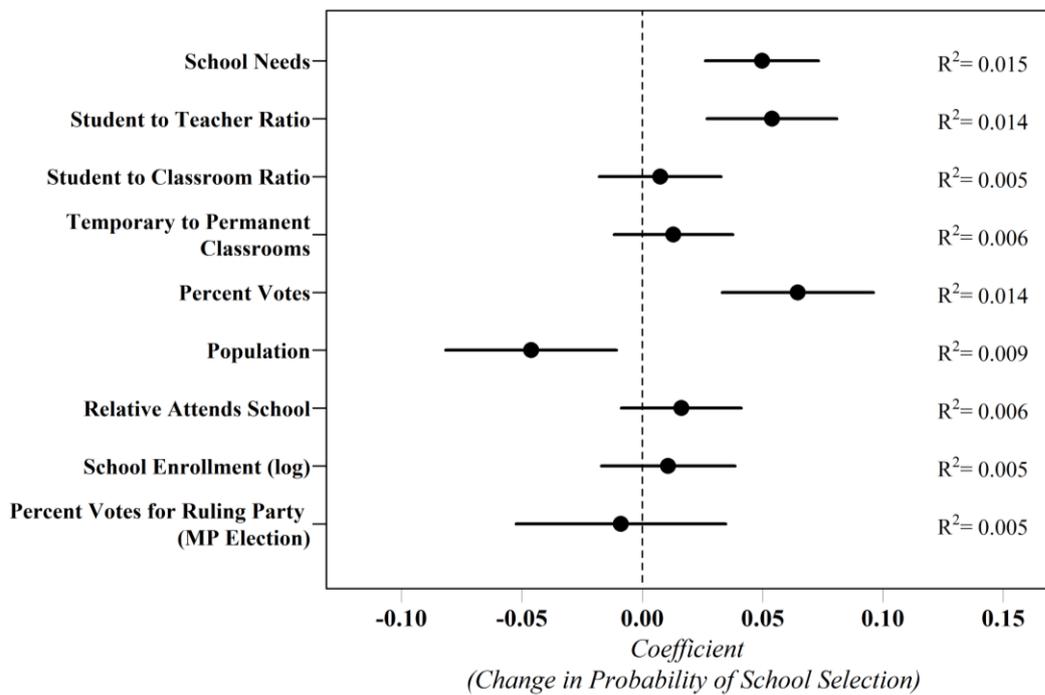
Building upon this literature, our pre-specified prior is that electorally motivated incumbents would prefer to target allocations in communities where they received a large proportion of votes in the last election. We call this variable *Percent Votes*, which equals the percentage of votes received by the incumbent councillor in the nearest polling station to a school. In Appendix B, we also re-estimate our results using alternative conceptualizations of political pivotality, including the total number of votes received by the incumbent at a polling station and the incumbent’s victory margin at a polling station.²⁷ The results are consistent with the results in the main text. In addition, and consistent with our priors, we see little evidence that incumbents respond to transparency by targeting swing voters or opposition supporters.

In Figure 6, we show how school and community characteristics affect the likelihood that a school will be selected by an incumbent in the experiment. These estimates are derived from separate linear regressions of school selection on the z-scores school characteristics with incumbent fixed effects. These estimates appear to confirm that incumbents consider both need and political support when making allocation decisions. A one standard deviation increase in an incumbent’s percentage of votes (21%) increases the probability of selection

²⁷ Depending upon the assumptions one makes about how the marginal effect of allocations on votes increases with population, politicians might either target the place with the highest number of supporters, or the place with the highest percentage of voters. Following our pre-analysis plan, we rely on the latter operationalization in the main text.

by 0.06. A standard deviation increase in school need (1.9) increase the probability of selection by 0.04. These represent sizable welfare effects: a two standard deviation increase in need or votes would increase the probability of selection by approximately 36% and 24% respectively.

Figure 6: Effect of School Characteristics on School Selection



Notes: This figure shows the coefficients of separate regressions of school selection on the z-scores of school or polling station-level covariates. Regressions include incumbent fixed effects and standard errors are clustered on incumbent. Horizontal lines indicate the 95% confidence interval for each coefficient.

5.3 Measuring Knowledge

In order to measure incumbents' level of knowledge about their communities, we rely on the post-treatment quiz discussed above. We create two variables to measure knowledge: *School Knowledge*, which equals the proportion of questions the incumbent correctly

answered about the number of students and teachers. *Political Knowledge* equals one if the incumbent could correctly identify the school with the least number of votes.²⁸

We take steps to validate that these variables are reasonable measures of incumbent knowledge. In Appendix Table B1, we regress these knowledge variables on the characteristics of incumbents. As we would expect if these variables measure knowledge, incumbents with children attending school in the constituency or past experience working for the government (often in education) are significantly more likely to have a high *School Knowledge* score. Incumbents who plan to contest the 2018 election or who won the 2014 election with a close margin are significantly more likely to have a high *Political Knowledge* score. Gender also has a significant effect, with men being more likely to know about voting in their constituency and women being more likely to know about school characteristics.

5.4 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 treatment. Formally, let $Selected_{ij}$ be the outcome variable for each school i within constituency j . $Selected_{ij}$ equals one if school i was selected to receive development goods and zero otherwise.²⁹ Let T_j be our randomly assigned treatment indicator. We are interested in how treatment varies with our measures of need and political pivotality, $School Need_{ij}$ and

²⁸ In all questions, we gave the incumbent the option to select “about the same” if the number votes, teachers or students were similar across the schools. We code this answer as correct if the schools vary by 5% or less in these characteristics. The results are similar if we use a 10% or 0% cut-off.

²⁹ In Appendix B, we also estimate an alternative and more conservative model in which the dependent variable is just whether the incumbent selected the highest need or highest vote school. The results are weaker but consistent.

Percent Votes_{ij}; so we interact T_j on each of these variables as in equations one and two below.

$$\begin{aligned} Selected_{ij} = & \beta_1 School\ Need_{ij} + \beta_2 T_j School\ Need_{ij} \\ & + \phi X_{ij} + v_j \end{aligned} \quad (1)$$

$$\begin{aligned} Selected_{ij} = & \beta_1 Percent\ Votes_{ij} + \beta_2 T_j Percent\ Votes_{ij} \\ & + \phi X_{ij} + v_j \end{aligned} \quad (2)$$

We include incumbent fixed effects, v_j , in all models. In some models, we also include a vector of school level covariates, X_{ij} . In additional specifications, we also include as controls interactions of school and incumbent-level covariates with treatment (Appendix B).³⁰

We anticipate that the effect of providing transparency will vary with *School Knowledge* and *Political Knowledge*, which measure the knowledge of each official about school characteristics and voting. We can estimate these three-way interaction effects using equations three and four.

$$\begin{aligned} Selected_{ij} = & \beta_1 School\ Need_{ij} + \beta_2 T_j School\ Need_{ij} \\ & + \beta_3 School\ Knowledge_j School\ Need_{ij} \\ & + \beta_4 T_j School\ Knowledge_j School\ Need_{ij} + \phi X_{ij} + v_j \end{aligned} \quad (3)$$

$$\begin{aligned} Selected_{ij} = & \beta_1 Percent\ Votes_{ij} + \beta_2 T_j Percent\ Votes_{ij} \\ & + \beta_3 Political\ Knowledge_j Percent\ Votes_{ij} \\ & + \beta_4 T_j Political\ Knowledge_j Percent\ Votes_{ij} + \phi X_{ij} + v_j \end{aligned} \quad (4)$$

Our marginal treatment effect for each level of knowledge and need is equal to $\beta_2 Percent\ Votes_i + \beta_4 Political\ Knowledge_j Percent\ Votes_i$ (and equivalently for *School Need*). We plot these marginal treatment effects and associated standard errors for all our

³⁰ With the exception of some unavailable political and demographic variables, we include all control variables specified in the pre-analysis plan. Summary statistics and coding details for these variables are in Appendix A. Appendix E provides details omitted variables. Missing data in controls are imputed as specified in the pre-analysis plan using the mean value for the lowest level of aggregation available (map, ward or district).

models. We expect the effect of transparency to be stronger when respondents have accurate knowledge about their community (when *Political Knowledge* or *School Knowledge* is high) and weaker when respondents lack knowledge. We estimate these equations using a linear probability model, though the results are consistent using a fixed effects logit model.

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 ADCs that this should make it more likely that needy schools benefit from distributional decisions. Our results for these estimates are in Table 2. We first consider in Column 1 the average treatment effect of transparency on allocation to needy schools. We see only null effects of transparency in this model. This effect changes, however, when we just look at incumbents who demonstrated knowledge about school characteristics (Columns 2-4).³¹ Here we see a positive and significant effect of transparency among those incumbents that are well informed about school characteristics. The marginal effects are plotted in Figure 7.

This treatment effect represents a meaningful shift in distributional decisions: schools at the 0.75 percentile of need were approximately 0.03 times (9%) more likely to be selected by incumbents who received the transparency treatment than by those who did not. Schools at the 0.25 percentile of need were approximately 0.04 times (12%) less likely to be selected by those who received the transparency treatment. Taken together, these results suggest that transparency resulted in a sizable shift in public welfare. These effects do not appear to differ among incumbents that admit to contesting the 2018 election.

In Figure 8 we also plot these effects by each component of our need index. While our effects are mostly positive across components of need, the largest effect is for school

³¹ The sample size changes slightly across these models due to cases where we had insufficient school-level data to evaluate incumbent priors. The results are consistent if we impute incumbent priors for these missing cases.

overcrowding. This is consistent with the statements of incumbents themselves, who often emphasized the importance of structural overcrowding in their allocation decisions, as well as the priorities of teachers.³²

The fact that the effect of transparency is conditional on school knowledge suggests that poorly informed incumbents are less likely to be 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, so it is perhaps not surprising that some incumbents are not as capable of making these kind of allocative decisions. This fact does, however, suggest that information may play a mediating role in effective development allocation.

³² See Appendix D for a discussion of our post-experiment survey with teachers.

Table 2: The Effect of Transparency and Need on School Allocation

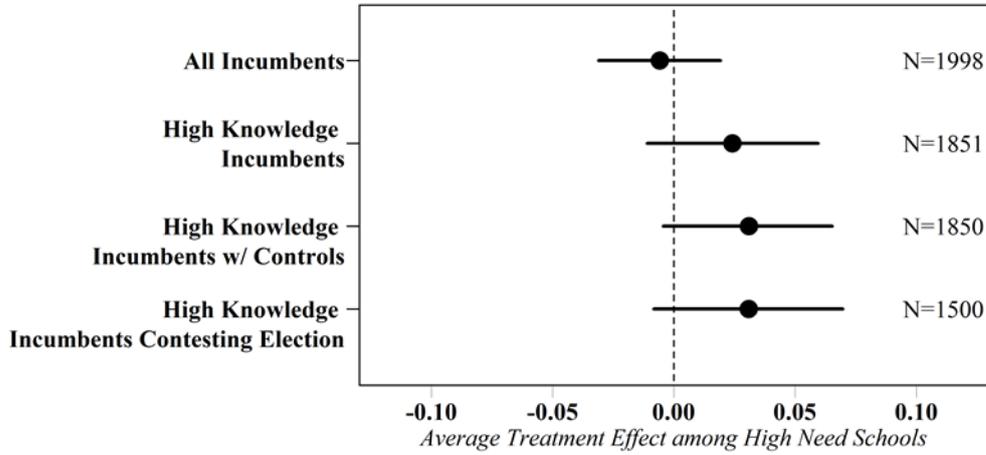
DV=Selected

	OLS	OLS without Controls	OLS with Controls	OLS Contesting Only	Conditional Logit
	(1)	(2)	(3)	(4)	(5)
Treatment*School Need*School Knowledge		0.073** (0.030)	0.079*** (0.030)	0.074** (0.033)	0.274*** (0.106)
Treatment*School Need	-0.006 (0.015)	-0.049** (0.021)	-0.046** (0.021)	-0.044* (0.023)	-0.186** (0.081)
School Need*School Knowledge		-0.041** (0.019)	-0.044** (0.019)	-0.040* (0.021)	-0.159** (0.074)
School Need	0.029*** (0.010)	0.056*** (0.014)	0.059*** (0.023)	0.057*** (0.016)	0.213*** (0.060)
Observations	1,998	1,851	1,850	1,500	1,851
R ²	0.015	0.019	0.053	0.022	0.012
Log Likelihood					-856.918

*p<0.1; **p<0.05; ***p<0.01

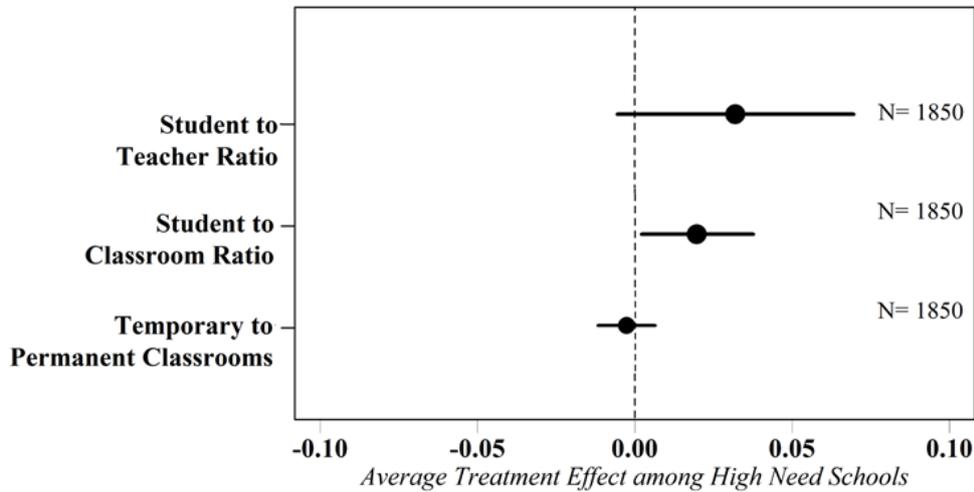
Notes: Incumbent clustered standard errors in parentheses. Covariates in column 3 include *Percent Votes*, *Number of School Classrooms*, *Number of Teachers (log)*, *School Enrollment (log)*, *Relative School*, *Number of Temporary Classrooms (log)*, *Number of Permanent Classrooms (log)*, *Good Type*, *Map Order*, *Ward Turnout (log)*, *Ruling Party Vote Share (MP Election)*, *Ruling Party Vote Share (Councillor Election)*, *Percent Votes Runner-up Incumbent Councillor*. We also include two- and three-way interactions of *Percent Votes* with *Treatment* and *Political Knowledge*. Column 4 is limited to cases where the incumbent intends to contest the 2018 election. Coding details and summary statistics for all variables are in Appendix A.

Figure 7: The Effect of Transparency on Selection of High Need Schools



Notes: This figure shows the simulated effect of the transparency treatment on the probability of selecting a school at the top quartile of *School Needs*. Standard errors are clustered on incumbent. Horizontal lines show the 95% confidence interval.

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



Notes: This figure shows the simulated effect of the transparency treatment on the probability of selecting a school at the top quartile of *School Needs*. Standard errors are clustered on incumbent. Horizontal lines indicate the 95% confidence interval.

We next consider whether incumbents were less likely to allocate to schools located in communities where they received a large percentage of votes under the treatment of transparency. We expect that transparency decreases the probability that incumbents engage in political targeting. The results in Table 3 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 percentage of votes. This result is consistent across specifications and robust to controlling for characteristics of schools and wards³³. We plot the average treatment effects in Figure 9. When incumbents receive the transparency treatment, they are approximately 0.05 times (15%) less likely to select a school where they received a high number of votes (defined as a school at or above the 75th percentile of votes).

Consistent with H3, this effect is particularly strong when incumbents anticipate contesting the 2018 election. If we limit the sample to these respondents (81% of the sample), the effect size increases to 0.07. This suggests that incumbents may be considering the electoral consequences of their actions when making decisions about the allocation of goods.

³³ See also Appendix B for additional specifications, including interactions of all treatment variables with controls.

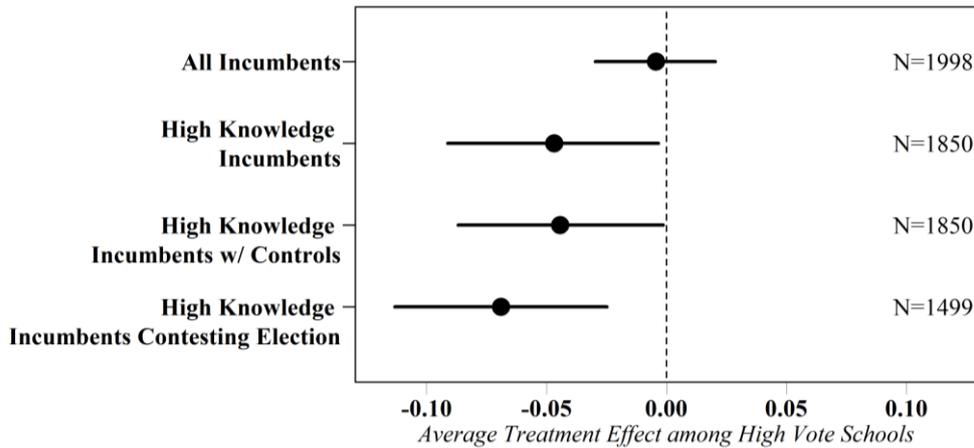
Table 3: The Effect of Transparency and Percent Votes on School Selection

	DV=Selected				
	OLS	OLS without Controls	OLS with Controls	OLS Contesting Only	Conditional Logit
	(1)	(2)	(3)	(4)	(5)
Treatment*Percent Votes*Political Knowledge		-0.742**	-0.732**	-0.859**	-2.970**
		(0.351)	(0.345)	(0.371)	(1.218)
Treatment*Percent Votes	-0.049	0.240	0.249	0.117	0.939
	(0.165)	(0.206)	(0.204)	(0.223)	(0.778)
Percent Votes*Political Knowledge		0.436*	0.406	0.516*	1.767**
		(0.252)	(0.255)	(0.263)	(0.892)
Percent Votes	0.321***	0.160		0.273	0.622
	(0.119)	(0.156)	(0.000)	(0.173)	(0.546)
Observations	1,998	1,850	1,850	1,499	1,850
R ²	0.014	0.018	0.053	0.025	0.012
Log Likelihood					-856.188

*p<0.1; **p<0.05; ***p<0.01

Notes: Incumbent clustered standard errors in parentheses. Covariates in column 3 include *School Needs*, *Number of School Classrooms*, *Number of Teachers (log)*, *School Enrollment (log)*, *Relative School*, *Number of Temporary Classrooms (log)*, *Number of Permanent Classrooms (log)*, *Good Type*, *Map Order*, *Ward Turnout (log)*, *Ruling Party Vote Share (MP Election)*, *Ruling Party Vote Share (Councillor Election)*, *Percent Votes Runner-up Incumbent Councillor*. We also include two- and three-way interactions of *School Need* with *Treatment* and *Political Knowledge*. Column 4 is limited to cases where the incumbent intends to contest the 2018 election. Coding details and summary statistics for all variables are in Appendix A.

Figure 9: The Effect of Transparency on Selection of High Vote Schools



Notes: This figure shows the simulated effect of the transparency treatment on the probability of selecting a school at the top quartile of *Percent Votes*. Standard errors are clustered on incumbent. Horizontal lines indicate the 95% confidence interval of the estimate.

Together, these results suggest a consistent story about how transparency affects distributional decisions: When incumbents have to worry about whether political targeting will be observed and sanctioned by citizens 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. Interpretation and Robustness

There are several potential challenges in interpreting these results. First, one might worry that social desirability biases these decisions. We emphasized that there were “no restrictions” regarding which school was recommended and that the good would be allocated via a public lottery; however some incumbents may yet have believed that the donor expected them to make a particular decision. If so, this may have biased decisions in favor the donor’s perceived preferences. This is not a huge concern for us since our intention is to replicate donor-politician interactions, and incumbents often have to worry about the implications of

donor oversight. However, given the number of incumbents that allocated goods explicitly based on voter characteristics (and admitted to doing so), it does not seem to be the case that donor-driven social desirability was a particularly strong motivating factor. If such bias exists it would attenuate our treatment effect since social desirability bias should drive more allocation to needy schools in both treatment and control conditions.

Second, one might be worried about the interpretation of our local average treatment effects. Since politics and need are not randomly assigned, it could be the case that high vote or high need schools are allocated goods for reasons that are correlated with need and voting, such as village population, ethnicity or clientelistic networks. We do our best to motivate and justify our measures with focus groups and post-treatment survey questions, however this attribution issue remains a weakness of our research design, and it is important to be cautious in interpreting these results as providing conclusive support for one particular distributional model. We are able rule out many of these alternative explanations by controlling for other school characteristics, and interacting these with treatment and knowledge variables. We undertake this exercise in Appendix B, Tables B5 and B6. Our treatment effects are not considerably altered by controlling for observable school characteristics.

Relatedly, one might worry about the interpretation of school and political knowledge. It could be the case that incumbents which do well on knowledge tests are also the type of incumbents who might allocate to high vote or high need areas. Again, since knowledge is not randomly assigned, we have to be cautious in making strong claims about the reasons we see effects among these incumbents. As discussed above, we take several steps demonstrate that these measures reflect incumbent knowledge. Also, in Appendix Table B5 and B6, we include as controls two- and three-way interactions of incumbent-level covariates with *Political Knowledge*, *School Knowledge* and *Treatment*. These tests allows us to evaluate whether these knowledge variables proxy for incumbent characteristics such as education,

income, gender or vote share. Our treatment effects vary only slightly across these specifications, suggesting that the effects of treatment among knowledgeable incumbents are not primarily driven by other measurable characteristics.

Finally, one might be interested in how these effects vary across incumbent characteristics. In Appendix Figures B1 and B2 we consider heterogeneous treatment effects by gender, party and victory margin. We see stronger effects on high vote schools for female incumbents and for members of the People's Party (the former incumbent). These results are consistent with other studies which find an effect of gender and opposition partisanship on development outcomes (Duflo 2012; Fujiwara and Wantchekon 2013); though given the small sample sizes for these groups, we interpret these results cautiously.

8. Discussion and Conclusions

Citizens and members of the international development community frequently bemoan the misallocation of development goods by politicians. Such concerns have motivated several reforms and moves towards “off-budget” aid and conditionality. Despite this, we have 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 to concerns that they will be sanctioned by citizens who do not benefit, who have normative concerns about political targeting, or who have broader perspective or longer time horizons when evaluating the actions of incumbents. To evaluate this argument, we implemented a field 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—oversight 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. Further, the devolution of development decisions to local councils is increasingly common globally. 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 incumbents. 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: How Transparency Affects Distributional Politics

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Appendix A: Summary Statistics

Table A1: Statistics for Councillors Included and Excluded from the Sample

	(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.

Table A2: Summary Statistics and Description for All Available Control Variables Mentioned in Pre-Analysis Plan and/or Analysis

Variable	N	Mean	SD	Treatment Mean	Treatment SD	Control Mean	Control SD	Details
Children in Ward	1,998	0.820	0.820	0.797	0.402	0.840	0.366	Equals one if the councillor has children in the ward
Chose Iron Sheet	1,998	0.324	0.324	0.337	0.473	0.312	0.463	Equals one if the councillor is making a decision over the allocation of an iron sheet
Chose Solar Lamp	1,998	0.334	0.334	0.333	0.472	0.335	0.472	Equals one if the councillor is making a decision over the allocation of a solar lamp
Chose Teacher Supply Kit	1,998	0.342	0.342	0.330	0.470	0.354	0.478	Equals one if the councillor is making a decision over the allocation of a teacher supply kit
Councillor Age	1,992	41.759	41.759	41.642	8.960	41.866	9.544	Age of the councillor in years
Councillor Education	1,992	2.328	2.328	2.402	0.867	2.260	0.671	A one to six index indicating the councillor's level of education (primary, secondary, certificate or diploma, university degree, master's degree, PhD)
Councillor Income (log)	1,986	12.785	12.785	12.708	1.693	12.854	1.485	Councillor household income in Malawi Kwacha

Councillor Victory Margin	1,956	20.154	20.154	18.644	35.745	21.554	35.441	Councillor margin of victory at a polling station
Councillor Ward Victory Margin	1,971	0.235	0.235	0.222	0.340	0.247	0.350	Councillor margin of victory in the whole ward
Councillor Worked in Government	1,974	0.188	0.188	0.150	0.357	0.224	0.417	Equals one if the councillor has worked (or does work) in the government
Has Education Plan	1,998	0.729	0.729	0.717	0.450	0.740	0.439	Equals one if the councillor knows of an education plan for her/his ward
Male Councillor	1,998	0.904	0.904	0.894	0.308	0.913	0.282	Equals one if the councillor is male and zero if the councillor is female
Map One	1,998	0.332	0.332	0.333	0.472	0.332	0.471	First decision map
Map Three	1,998	0.333	0.333	0.333	0.472	0.334	0.472	Third Decision map
Map Two	1,998	0.334	0.334	0.334	0.472	0.335	0.472	Second decision map
Number of Classrooms (log)	1,998	2.022	2.022	2.034	0.627	2.010	0.615	Number of classrooms in a school
Number of Teachers (log)	1,998	2.364	2.364	2.378	0.557	2.351	0.568	Number of teachers in a school
Percent Votes AFORD, MP Election	1,968	0.641	0.641	0.440	3.717	0.827	5.887	
Percent Votes CCP, MP Election	1,968	0.170	0.170	0.134	2.319	0.204	2.314	
Percent Votes MCP, MP Election	1,968	17.316	17.316	15.999	23.648	18.533	24.757	
Percent Votes PP, MP Election	1,968	18.311	18.311	19.254	19.768	17.439	16.909	
Percent Votes UDF, MP Election	1,968	8.748	8.748	7.958	12.994	9.477	15.710	
Percent Votes, DPP MP	1,998	0.207	0.207	0.222	0.216	0.193	0.202	
Percent Votes, Incumbent Councillor	1,998	48.518	48.518	47.384	22.035	49.549	21.563	
Percent Votes, MP of	1,998	0.346	0.346	0.343	0.248	0.349	0.240	

Councillor's Party								
Percent Votes, Ruling Party Councillor	1,480	31.408	31.408	32.619	22.834	30.313	24.409	
Percent Votes, Runner-Up Councillor	1,998	25.070	25.070	25.338	18.624	24.826	20.737	
Permanent Classrooms (log)	1,998	1.865	1.865	1.872	0.715	1.860	0.684	Number of permanent classrooms in a school
Permanent Teacher Houses (log)	1,961	1.181	1.181	1.203	0.704	1.162	0.716	Number of permanent teacher house in a school
Plan to Contest Next Election	1,998	0.801	0.801	0.804	0.398	0.798	0.401	Equals one if the councillor anticipates contesting the next election
Political Knowledge (Percent Votes Question Correct)	1,850	0.413	0.413	0.438	0.496	0.389	0.488	Equals one if the councillor could correctly indicate the area where s/he received the least number of votes
Population (log)	1,998	5.065	5.065	5.690	15.279	4.496	7.364	Local 100m estimates of population from the WorldPop project (http://www.worldpop.org.uk/)
Question Students per Class	1,851	0.601	0.601	0.560	0.497	0.640	0.480	Equals one if the councillor could correctly indicate the number of students per classroom
Question Students per Teacher	1,851	0.597	0.597	0.557	0.497	0.634	0.482	Equals one if the councillor could correctly indicate the number of students per teacher
Questions Percent Correct	1,851	26.688	26.688	24.972	43.309	28.302	45.070	The percentage of all questions the councillor answered correctly
Relative Attends School in Ward	1,998	0.059	0.059	0.054	0.225	0.063	0.243	Equals one if the councillor has a relative attending school in the ward
School Enrollment (log)	1,998	6.592	6.592	6.584	0.667	6.600	0.670	Number of students attending a school
School Knowledge (Proportion of Education Questions Correct)	1,851	59.914	59.914	55.853	49.572	63.732	47.774	
School Needs	1,998	0.036	0.036	-0.003	1.801	0.071	1.916	The sum of the z-scores of the student to teacher ratio,

								student to classroom ratio and temporary to permanent classroom ratio
Selected	1,998	0.340	0.340	0.342	0.475	0.338	0.473	Equals one if a school is selected and zero otherwise
Temporary Classrooms (log)	1,998	0.391	0.391	0.400	0.650	0.384	0.637	Number of temporary classrooms at a school
Temporary Teacher Houses (log)	1,961	0.431	0.431	0.424	0.662	0.438	0.681	Number of temporary teacher houses at a school
Turnout (log)	1,998	6.953	6.953	6.915	0.632	6.987	0.566	Number of people voting at a polling station

Appendix B: Alternative Estimation Tables and Figures

1. Validating Political and School Knowledge Measures

The estimates in Table B1 show the results of a regression of *Political Knowledge* and *School Knowledge* on incumbent characteristics. We show these results to validate the use of these variables as a measurement of how informed incumbents are about schools and voting in their ward. As we would expect if these variables measure knowledge, incumbents with children attending school in the ward or past experience working for the government (often in education) are significantly more likely to have a high School Knowledge score. Incumbents who plan to contest the 2018 election or who won the 2014 election with a close margin are significantly more likely to have a high Political Knowledge score. Gender also has a significant effect, with men being more likely to know about voting in their ward and women being more likely to know about school characteristics.

Table B1: Correlates of Political and School Knowledge

	Correct Votes (1)	Correct Votes w/ District FE (2)	Correct School Needs (3)	Correct School Needs w/ District FE (4)
Incumbent Age	-0.002 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.004*** (0.001)
Incumbent Gender	0.179*** (0.041)	0.200*** (0.042)	-0.075* (0.042)	-0.031 (0.043)
Incumbent Education	0.061*** (0.015)	0.093*** (0.016)	-0.122*** (0.016)	-0.097*** (0.016)
CCP Incumbent	-0.060 (0.264)	0.518 (0.331)	0.312 (0.274)	0.542 (0.338)
DPP Incumbent	-0.044 (0.162)	0.025 (0.175)	-0.263 (0.168)	0.372** (0.179)
Independent Incumbent	-0.289* (0.168)	-0.310* (0.175)	-0.226 (0.174)	0.202 (0.179)
MCP Incumbent	0.040 (0.161)	-0.128 (0.176)	-0.263 (0.167)	0.118 (0.180)
PP Incumbent	0.064 (0.163)	0.043 (0.171)	-0.192 (0.169)	0.190 (0.175)
UDF Incumbent	-0.014	-0.041	-0.304* (0.169)	0.329* (0.175)

	(0.164)	(0.176)	(0.170)	(0.180)
Ward Victory Margin	-0.552***	-0.626***	-0.034	0.027
	(0.064)	(0.069)	(0.066)	(0.071)
Registered Voters in Ward (log)	-0.067**	-0.038	0.115***	0.187***
	(0.030)	(0.030)	(0.031)	(0.031)
Lived in Ward Entire Life	-0.096	-0.137*	-0.191**	-0.208***
	(0.079)	(0.079)	(0.082)	(0.080)
Lived in Ward More than 10 Years	-0.140*	-0.204**	-0.269***	-0.241***
	(0.083)	(0.083)	(0.086)	(0.085)
Lived in Ward More than 5 Years	0.800***	0.645***	-0.373**	-0.260
	(0.160)	(0.157)	(0.166)	(0.161)
Has an Education Plan	0.079***	0.079***	-0.002	0.007
	(0.025)	(0.026)	(0.026)	(0.027)
Incumbent Income (log)	-0.009	-0.043***	0.002	-0.010
	(0.007)	(0.009)	(0.008)	(0.009)
Worked for Gov	-0.248***	-0.286***	0.149***	0.153***
	(0.033)	(0.032)	(0.034)	(0.033)
Plan to Contest Next Election	0.061**	0.021	-0.128***	-0.117***
	(0.030)	(0.032)	(0.031)	(0.032)
Have Children in Ward	-0.020	0.008	0.148***	0.128***
	(0.032)	(0.034)	(0.033)	(0.035)
Constant	1.177***		0.303	
	(0.366)		(0.380)	
Observations	1,754	1,754	1,755	1,755
R ²	0.146	0.227	0.071	0.182

* p<0.1; ** p<0.05; *** p<0.01

Note: This table regresses councillor knowledge scores on councillor-level control variables in order to assess the validity of these scores as a measure of councillor knowledge.

2. Analysis of treatment effects at the map level

These estimates re-conceptualize the estimation methodology such that the dependent variable equals one if a selected school is the school with the highest *Percent Votes* on the map (Table B2) or the highest *School Need*

on the map (Table B3) and zero if any other school is chosen. The results are consistent, though with larger standard errors.

Table B2: Map Level Analysis, Votes

	DV=Selected Highest Votes School		
	OLS (1)	OLS w/ controls (2)	Logistic (3)
Treatment*Knowledge	-0.120 (0.078)	-0.111 (0.079)	-0.484 (0.328)
Treatment	0.058 (0.046)	0.065 (0.046)	0.236 (0.210)
Knowledge	0.082 (0.057)	0.061 (0.058)	0.329 (0.231)
Observations	622	622	622
R ²	0.004	0.031	
Log Likelihood			-427.340

*p<0.1; ** p<0.05; *** p<0.01

Table B3: Map Level Analysis, School Need

	DV=Selected Highest Need School		
	OLS (1)	OLS w/ controls (2)	Logistic (3)
Treatment*Knowledge	0.142* (0.080)	0.134* (0.080)	0.596* (0.336)
Treatment	-0.095 (0.062)	-0.083 (0.061)	-0.400 (0.261)
Knowledge	-0.060 (0.057)	-0.055 (0.056)	-0.248 (0.237)
Observations	627	627	627
R ²	0.005	0.034	
Log Likelihood			-419.584

*p<0.1; ** p<0.05; *** p<0.01

3. Analysis Using Alternative Operationalizations of Political Targeting

These tables reanalyze the *School Vote* models using alternative operationalizations of political pivotality, including the number of votes and the percentage of votes received by the runner up candidate in the incumbent councillor's election.

Table B4: The Effect of Transparency and Total Number of Votes on School Selection

	DV=Selected			
	OLS (1)	OLS without Controls (2)	OLS with Controls (3)	Conditional Logit (4)
Treatment*Number of Votes*Knowledge		-0.208** (0.086)	-0.179** (0.089)	-0.835*** (0.294)
Treatment*Number of Votes	0.010 (0.040)	0.090* (0.046)	0.077* (0.047)	0.353** (0.177)
Number of Votes*Knowledge		0.133** (0.065)	0.105 (0.068)	0.540** (0.219)
Number of Votes	0.020 (0.029)	-0.035 (0.033)	-0.003 (0.043)	-0.132 (0.126)
Observations	1,998	1,850	1,850	1,850
R ²	0.006	0.011	0.041	0.005
Log Likelihood				-862.141

*p<0.1; **p<0.05; ***p<0.01

Note: This table estimates the effect of transparency on school selection by the total number of votes received by the incumbent in the 2014 councillor election (instead of the percentage of votes). This hypothesis was not specified in the pre-analysis plan.

Table B5: The Effect of Transparency and Runner-up Votes on School Selection

	DV=Selected			
	OLS	OLS without Controls	OLS with Controls	Conditional Logit
	(1)	(2)	(3)	(4)
Treatment*Runner up Votes*Knowledge		-0.060 (0.307)	-0.046 (0.300)	-0.236 (1.156)
Treatment*Runner up Votes	-0.099 (0.147)	-0.053 (0.181)	-0.046 (0.179)	-0.212 (0.801)
Runner up Votes*Knowledge		0.157 (0.191)	0.153 (0.181)	0.662 (0.756)
Runner up Votes	-0.083 (0.090)	-0.179* (0.100)	-0.155* (0.094)	-0.746 (0.524)
Observations	1,998	1,850	1,850	1,850
R ²	0.007	0.008	0.036	0.003
Log Likelihood				-864.442

*p<0.1; **p<0.05; ***p<0.01

Note: This table estimates the effect of transparency on school selection by the percent of votes received by the second place candidate in the 2014 councillor election. This is a test of hypothesis 18 in the pre-analysis plan.

4. Subgroup analysis

These figures re-estimates the main treatment effects, conditional on councillor knowledge, within subgroups. These subgroups are selected based upon the conditional analyses specified in the pre-analysis plan.

Figure B1: Subgroup Analysis, Votes

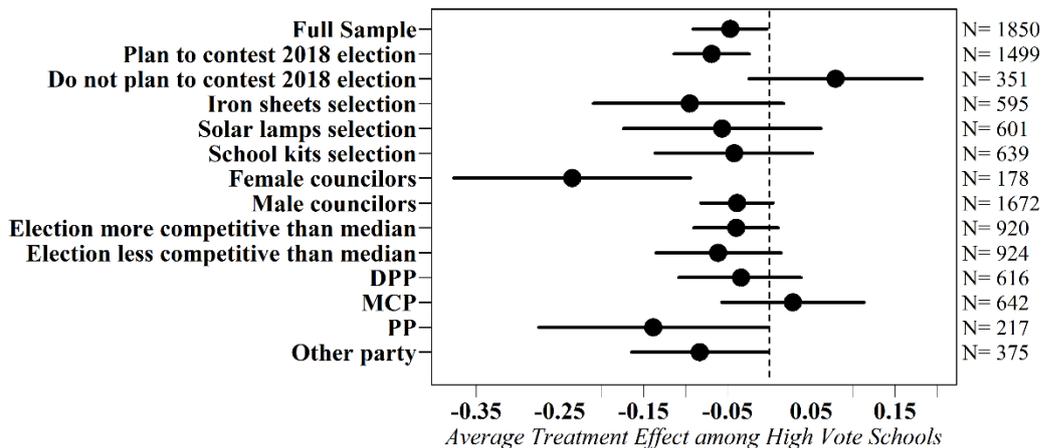
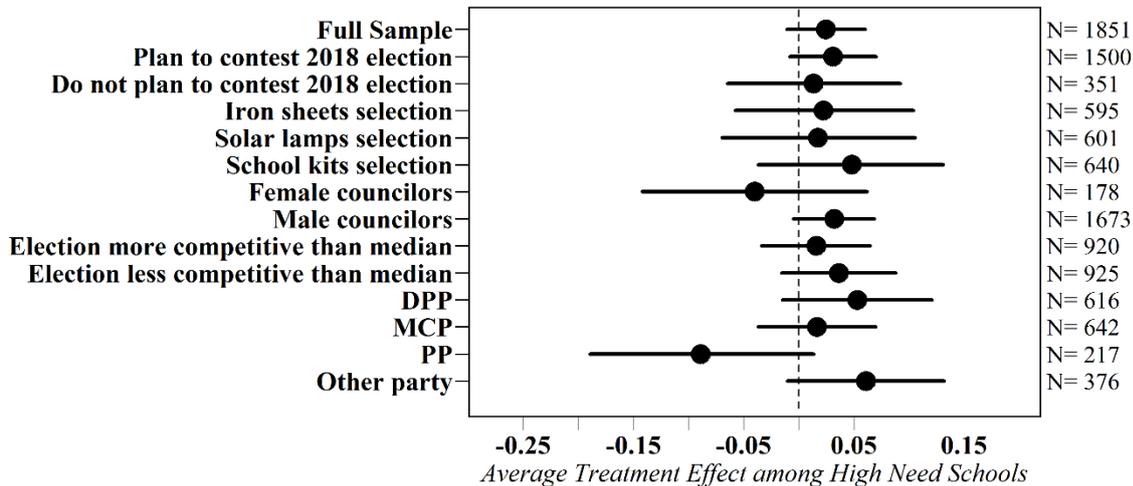


Figure B2: Subgroup Analysis, School Needs



5. Additional Control Variable Specifications and Interactions

Here we re-estimate the main results including interactions of *Treatment*, *Percent Votes*, *School Need*, *School Knowledge*, and *Political Knowledge* on control variables and incumbent background. These results are included to evaluate several alternative explanations, such as that incumbents are targeting high vote schools for a reason other than their political characteristics; or that the effects of knowledge are due to the education or income of incumbents, rather than knowledge.

Table B5: The Effect of Transparency and Percent Votes on School Selection with Control Variable Interactions

	DV=Selected				
	(1)	(2)	(3)	(4)	(5)
Treatment*Percent Votes*Knowledge	-0.742** (0.351)	-0.751** (0.345)	-0.735** (0.370)	-0.756** (0.353)	-0.820** (0.362)
Treatment*Percent Votes	0.240 (0.206)	0.267 (0.201)	0.123 (0.243)	0.119 (0.226)	-1.585 (1.513)
Percent*Knowledge	0.436* (0.252)	0.408 (0.255)	0.472* (0.272)	0.402 (0.261)	0.409 (0.270)
Percent Votes	0.160 (0.156)	0.094 (0.164)	0.122 (0.189)	0.169 (0.175)	0.370 (1.248)
Control Variables	NO	YES	YES	YES	YES
Control Variables * Treatment	NO	NO	YES	YES	NO
Control Variables * Political Knowledge	NO	NO	NO	YES	NO
Control Variables * Political Knowledge * Treatment	NO	NO	NO	YES	NO
Incumbent Characteristics * Political Knowledge	NO	NO	NO	NO	YES
Incumbent Characteristics * Political Knowledge * Treatment	NO	NO	NO	NO	YES
Observations	1,850	1,850	1,850	1,850	1,790
R ²	0.018	0.051	0.071	0.059	0.061

*p<0.1; **p<0.05; ***p<0.01

Note: Control variables include *School Needs*, *Number of School Classrooms*, *Number of Teachers (log)*, *School Enrollment (log)*, *Relative School*, *Number of Temporary Classrooms (log)*, *Number of Permanent Classrooms (log)*, *Good Type*, *Map Order*, *Ward Turnout (log)*, *Ruling Party Vote Share (MP Election)*, *Ruling Party Vote Share (Councillor Election)*, *Percent Votes Runner-up Councillor*, and two- and three-way interactions of *School Needs* with *Treatment* and *School Knowledge*. Incumbent characteristics include *Incumbent Income*, *Incumbent Education*, *Incumbent Gender*, *Worked for Government* and *Ward Victory Margin*.

Table B6: The Effect of Transparency and School Needs on School Selection with Control Variable Interactions

	DV=Selected				
	(1)	(2)	(3)	(4)	(5)
Treatment* School Need *Knowledge	0.073** (0.030)	0.078*** (0.030)	0.073** (0.030)	0.078*** (0.030)	0.091*** (0.031)
Treatment*School Need	-0.049** (0.021)	-0.047** (0.021)	-0.061* (0.035)	-0.060* (0.034)	-0.345** (0.144)
Percent*Knowledge	-0.041** (0.019)	-0.045** (0.019)	-0.072** (0.031)	-0.045** (0.019)	-0.052** (0.021)
School Need	0.056*** (0.014)	0.039** (0.019)	0.059** (0.029)	0.042* (0.022)	0.213** (0.092)
Control Variables	NO	YES	YES	YES	YES
Control Variables * Treatment	NO	NO	YES	YES	NO
Control Variables * School Knowledge	NO	NO	NO	YES	NO
Control Variables * School Knowledge * Treatment	NO	NO	NO	YES	NO
Incumbent Characteristics * School Knowledge	NO	NO	NO	NO	YES
Incumbent Characteristics * School Knowledge * Treatment	NO	NO	NO	NO	YES
Observations	1,850	1,850	1,850	1,850	1,790
R ²	0.018	0.051	0.071	0.059	0.061

*p<0.1; **p<0.05; ***p<0.01

Note: Control variables include *School Needs*, *Number of School Classrooms*, *Number of Teachers (log)*, *School Enrollment (log)*, *Relative School*, *Number of Temporary Classrooms (log)*, *Number of Permanent Classrooms (log)*, *Good Type*, *Map Order*, *Ward Turnout (log)*, *Ruling Party Vote Share (MP Election)*, *Ruling Party Vote Share (Councillor Election)*, *Percent Votes Runner-up Councillor*, and two- and three-way interactions of *Percent Votes* with *Treatment* and *Political Knowledge*. Incumbent characteristics include *Incumbent Income*, *Incumbent Education*, *Incumbent Gender*, *Worked for Government* and *Ward Victory Margin*. We exclude the triple interaction of *Control Variables * School Knowledge * Treatment* for *Number of School Classrooms*, *Number of Teachers (log)*, *School Enrollment (log)*, *Number of Temporary Classrooms (log)*, *Number of Permanent Classrooms (log)* since these are used in the construction of the *School Need* variable.

Appendix C: 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 C1, panel A).¹ One of the civil society representatives was then asked to blindly select four wards from each box (Figure C1, 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.²

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.³ See Figures C2-4 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.

¹ Districts with fewer than four wards per district were combined with nearby districts.

² 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.

³ 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 C1: Pictures of Lottery Event



Figure C2: Iron Roofing Sheet with Tearfund Logo



Figure C3: Solar Lamps with Tearfund Logo



Figure C4: Teacher Supply Kits



Figure C5: Materials Handover Ceremony at Recipient School



Appendix D: Post-Experiment Head Teacher Survey

This post-experiment survey was designed to assess the views of recipient teachers in the schools which received goods in this study. We utilized a hierarchical sampling procedure in order to select the schools to be included in this experiment. We began with the sample of 333 wards which were involved in the aid allocation decision. From these, 86 were randomly selected in a public lottery to receive goods from Tearfund. From these 86, we then randomly selected 60 wards, stratified by region, to be involved in the experiment.

Within these 60 wards, we selected three schools to be involved in each survey. These were selected as follows:

- Among those three schools selected by the councillor for the delivery of school supplies, we sampled two schools to participate in the head teacher and citizen survey. Only one of these schools was actually assigned to receive school goods from Tearfund (see Section 5).
- Among those schools not selected by the councillor for the delivery of school supplies but included as a potential option for him/her to consider when making the allocation decision, we randomly selected one school to participate in the head teacher and citizen survey.
- Among those schools not sampled in #1 & #2, we randomly sampled three additional schools to be involved in the head teacher survey only.

This procedure ensures that we have a random sample of the three groups mentioned above: 1) schools selected by the councillor and by the lottery; 2) schools selected by the councillor but not by the lottery; and 3) schools selected by neither the councillor nor the lottery.

The first respondent at each school was always the head teacher (effectively the school principal). If the head teacher was not available, we asked a senior teacher to participate.

Then, within the community surrounding each school, we used a random walk procedure to sample voters in the area. A team of two Malawian enumerators first located the school and recorded its GPS coordinates. Then, they spun a bottle and walked in the direction of the bottle opening. They sampled the male head of household at the first house, skipped two houses, and then sampled the female head of household at the next (fourth) house. They then continued until they had sampled six heads of households in that direction, at which point they returned to the school and repeated the process in a different direction, sampling a female head of household first the second time. There were almost no instances of participants refusing to participate, but where this occurred or where the head of household was not home, the house was skipped and the sampling procedure simply ignored this house in the random walk pattern.

This process resulted in a total intended sample of 13 people per school at three schools in 60 wards, or 2340 people. Because of logistical issues, the total actual sample was closer to 2000 (pending complete data validation). All participants gave verbal consent to participate and were given between MK200 (\$0.25) and MK1000 (\$1.25) as a token of appreciation for their time (amount was greater for head teachers and greater at baseline).

Figure D1: Head Teacher Survey of School Needs

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

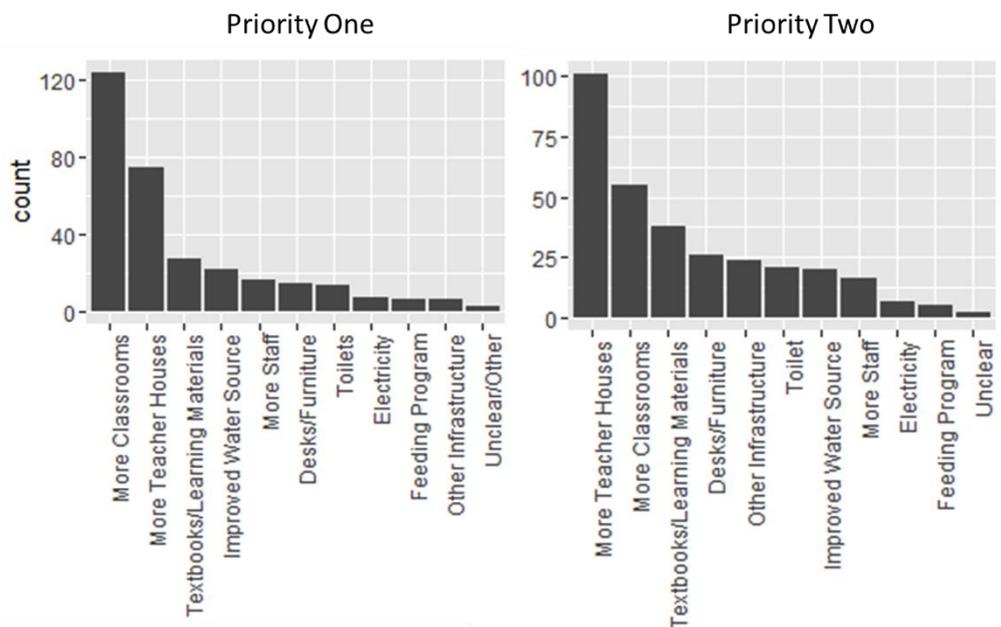


Figure shows the results of a survey in August 2016 of 315 of the schools within the experimental sample. Head teachers were asked an open-ended question about the top three priorities in their school. We categorized their responses into 11 categories. The frequency of each category is shown on the y-axis.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

Appendix E: Deviations from Pre-Analysis Plan

1. **Omission of control variables:** In the analysis, we include controls for all polling-station level and school-level covariates specified in the pre-analysis plan except for the following:

Variable	Reason omitted
Support for opposition candidate in presidential election	Polling station level data for the presidential election is not available for much of our sample.
Support for President Mutharika in presidential election	Polling station level data for the presidential election is not available for much of our sample.
Distance from nearest market and/or major town	Insufficient spatial census data for coding markets and towns

2. **Estimating interaction effects with knowledge variables**

In the manuscript, we analyse the effects of treatment conditional on incumbents' scores on a series of post-treatment knowledge variables. These variables and their coding was specified in the pre-analysis plan, as was the estimation methodology; however we omitted hypotheses specifically elaborating how we expected these knowledge variables to interact with the transparency treatment.

3. **Heterogenous Treatment Effects**

In the pre-analysis plan we provided several hypotheses about the heterogenous effects of partisanship, gender and good type. We evaluate these hypotheses by sub-setting the data in Figures B1 and B2. This is a deviation from the interaction model specified in the pre-analysis plan. We deviated for ease of interpretation.

Appendix F: Example Survey

Ward Councilor Questionnaire

Assistant Notes: Assistant instructions are printed in italics, like the text in this paragraph. Portions of the questions that should not be read aloud appear in italics. Parts of the question that should be emphasized are indicated in bold.

For Assistant to Fill:

Assistant: _____ Date: _____

Gender of Councilor: _____ Time: _____

Introduction:

Hello, my name is [Name of Assistant], and I am part of the implementation team for a development project working in partnership with Tearfund NGO. Our project plans to allocate materials and supplies to schools in your ward. We'd like to ask for your input in selecting the schools to receive these materials. Your recommendation is very important to us. There are no restrictions on which school you recommend. We remind you that this decision is part of your official duties as a ward councilor and therefore may be made public.

Because of limited funding, we cannot ultimately provide materials to all schools designated by all councilors. 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.

With the exception of your school recommendations, all information you provide will remain strictly confidential, and will not be linked to your name or other information in any way. I will record your answers on the paper on the table in front of you, so that you can see the information recorded is accurate. We will be unable to identify you as yourself. Please, feel free as you participate in this discussion to be honest.

Read the following sentence only if the councilor is not a mayor:

As a token of our appreciation for your assistance, we would like to give you a MK500 voucher for airtime credit, or equivalent good of your choosing.

You will also receive certificate of participation for your records *Show the councillor the certificate if asked.*

Are you willing to proceed? *Allow councilor to answer. If the councilor says he/she will provide input, continue:* Thank you very much for your assistance on this project.

Section 1: Background Information

- 1.1. Which district do you come from? *If clarification is needed, say: What is your district of origin?*
- a. _____
 - b. *Don't know*
 - c. *Decline to answer*

1.2. What is your tribe? *Do not read these options aloud. Allow councilor to list more than one.*

- | | |
|----------|----------------------|
| a. Chewa | e. Tumbuka |
| b. Lomwe | f. Other: _____ |
| c. Ngoni | g. Don't know |
| d. Nyao | h. Decline to answer |

1.3. To what tribe do most people in your ward belong? *Do not read these options aloud. Allow councilor to list more than one.*

- | | |
|----------|----------------------|
| a. Chewa | e. Tumbuka |
| b. Lomwe | f. Other: _____ |
| c. Ngoni | g. Don't know |
| d. Nyao | h. Decline to answer |

1.4. What is your home village or city?

- | | |
|---------------|----------------------|
| a. _____ | c. Decline to answer |
| b. Don't know | |

1.5. What is your marital status?

- | | |
|--------------------------------|----------------------|
| a. Single | e. Divorced |
| b. Married | f. Widowed |
| c. Married with Multiple Wives | g. Don't know |
| d. Separated | h. Decline to answer |

1.6. How old are you? *If councilor seems hesitant, ask: In what year were you born?*

- | | |
|------------------------------------|---|
| a. _____ → Go to question 1.7 | c. Decline to answer → Go to question 1.6 |
| b. Don't know → Go to question 1.6 | |

1.7. I will list some age ranges. Please tell me when you hear the age range in which you belong.

- | | |
|----------|----------------------|
| a. 20-29 | d. 50+ |
| b. 30-39 | e. Don't know |
| c. 40-49 | f. Decline to answer |

1.8. How long have you lived in this ward?

- | | |
|-----------------------|----------------------|
| a. Less than 5 years | d. All of my life |
| b. 5 to 10 years | e. Don't know |
| c. More than 10 years | f. Decline to answer |

1.9. Have you travelled to other countries outside Malawi, and stayed in them for a period longer than five days?

- | | |
|--------|----------------------|
| a. Yes | c. Don't know |
| b. No | d. Decline to answer |

1.10. What is the highest level of education you completed? *Probe to determine the highest year of school completed.*

- | | |
|---------------------------------|------------|
| a. Primary School Class: _____ | d. Diploma |
| b. Secondary School Form: _____ | e. Degree |
| c. Certificate | f. Masters |

- g. Ph.D.
- h. Don't know

i. Decline to answer

1.11. What is your **main** source of income **for your household**? Do not read these options aloud. If the councilor mentions more than one, probe until you identify their main source of money. If the councilor answers "my employment" or something similar, then probe to verify if that is indeed the main source of money. If the councilor answers "businessperson" or "consultant," probe for the details of their business or consultant work.

- | | |
|--|--|
| a. Supported by Spouse or Family | i. Employment by Private Educational Institution |
| b. Commercial Farming (some sales of product) | j. Health Care Work (Doctor or Nurse) |
| c. Renting Out Properties (Landlord) | k. Consultant → Probe for details:
_____ |
| d. Employment by a Business Councilor Does Not Own | _____ |
| e. Employment by Government (excluding teachers) | l. Business → Probe for details:
_____ |
| f. Employment by NGO | _____ |
| g. Employment by Religious Institution | m. Retirement Pension |
| h. Employment by Public Educational Institution | n. Other: _____ |
| | o. Don't know |
| | p. Decline to answer |

1.12. What is your estimated total household monthly income? In other words, how much do **you and your spouse** earn in **total** each month from **all** sources, full- and part-time employment, investments, and other fees or services?

Annual income: _____

- | | |
|----------------------------------|-----------------------------------|
| a. Under 40,000 kwacha/month | e. 400,000-1,000,000 kwacha/month |
| b. 40,000-100,000 kwacha / month | f. Over 1,000,000 kwacha/month |
| c. 100,000-200,000 kwacha/month | g. Don't know |
| d. 200,000-400,000 kwacha/month | h. Decline to answer |

1.13. We are interested in how Malawi's leaders invest their wealth to ensure future prosperity. How many of the following assets do **you and your spouse and your children** own? Remember that children who are independent should not be included.

- a. Houses: _____
- b. Undeveloped Plots: _____
- c. Bicycles: _____
- d. Ox Carts: _____
- e. Livestock:
 - Chickens _____
 - Goats _____
 - Pigs _____
 - Cows _____
- f. Cars: _____

g. Please identify the make and model and year of each car and write it here:

h. Computers: _____

- i. Basic Cell Phones: _____
- j. Smart Phones: _____
- k. Stock: _____
- l. None
- m. *Don't know*
- n. *Decline to answer*

1.14. Are you currently employed by the government? *Remember that only individuals that receive a routine paycheck are considered employees, and that councillors, chiefs, and teachers are not considered employees. Select (a) if answer to 0 was option (e).*

- a. Yes
- b. No
- c. *Don't know*
- d. *Decline to answer*

1.15. Do you work full-time for the government?

- a. Yes
- b. No
- c. *Don't know*
- d. *Decline to answer*

1.16. Have you worked for the government in the past?

- a. Yes → *Go to question 1.16*
- b. No → *Go to question 1.17*
- c. *Don't know* → *Go to question 1.17*
- d. *Decline to answer* → *Go to question 1.17*

1.17. How many years in total over your lifetime have you worked for the government? *Probe to determine how many years the councilor has been working in any government function, full- or part-time.*

- a. _____
- b. *Don't know*
- c. *Decline to answer*

We now would like your help in making decisions about the allocation of school materials and supplies in your community. I will show you several maps of schools and ask you to decide which school should receive a set of a certain kind of materials. Before you begin allocating materials, let me show you the kind of maps you will see, just so we can understand one another.

[INSERT MAP ONE, EXAMPLE MAP A]

The maps also provide you with some information we have collected about these schools [*point out the legend on the right*]. You can use this information to compare the schools to each other.

1.18. Let's be sure we understand one another. Please look at the map and answer the following question based on the information on the map. Which school has the lowest number of female teachers?

- a. School A
- b. School B
- c. School C
- d. Other answer: _____
- e. *Don't know*
- f. *Decline to answer*

1.19. Now, we would like you to recommend a school in your ward to receive a set of iron sheets, which can provide a roof on one school block.

Here is a photo of these iron sheets. You can see they will come painted with Tearfund's name on it, so that those at the school know who assisted them.

Please note that we will also send a letter to the Area Development Committees for this ward informing them of your choice of school. [*Show letter to councillor if they want to see it.*]

Here is a map of some schools in your community. Please look at this map carefully.

[INSERT MAP ONE]

When you are ready, please tell me which school you would like to choose to receive a set of iron sheets. Please take your time in making this decision.

- a. School A → *Go to question 1.21*
- b. School B → *Go to question 1.21*
- c. School C → *Go to question 1.21*
- d. *Don't know* → *Go to question 1.22*
- e. *Decline to answer* → *Go to question 1.22*

1.20. Why did you choose this school?

1.21. Now, we would like you to recommend a school in your ward to receive a set of solar-powered lamps. Teachers can use these lamps to prepare lessons in the evenings and groups of students can use them to study.

I have brought a sample lamp with me. You can see they will come with a sticker with Tearfund's name on it, so that those at the school know who assisted them.

Please note that we will also send a letter to the Area Development Committees for this ward informing them of your choice of school. [*Show letter to councillor if they want to see it.*]

Here is a map of some schools in your community. Please look at this map carefully.

[INSERT MAP TWO]

When you are ready, please tell me which school you would like to choose to receive a set of lamps. Please take your time in making this decision.

- a. School A → *Go to question 1.23*
- b. School B → *Go to question 1.23*
- c. School C → *Go to question 1.23*
- d. *Don't know* → *Go to question 1.24*
- e. *Decline to answer* → *Go to question 1.24*

1.22. Why did you choose this school?

1.23. Now, we would like you to recommend a school in your ward to receive a set of teacher supplies kits. These kits come with items helpful for teachers in preparing lessons.

I have brought a sample kit with me. You can see they will come with a sticker with Tearfund's name on it, so that those at the school know who assisted them.

Please note that we will also send a letter to the Area Development Committees for this ward informing them of your choice of school. [*Show letter to councillor if they want to see it.*]

Here is a map of some schools in your community. Please look at this map carefully.

[INSERT MAP THREE]

When you are ready, please tell me which school you would like to choose to receive a set of teacher supplies kits. Please take your time in making this decision.

- a. School A → *Go to question 1.19*
- b. School B → *Go to question 1.19*
- c. School C → *Go to question 1.19*
- d. *Don't know* → *Go to question 1.20*
- e. *Decline to answer* → *Go to question 1.20*

1.24. Why did you choose this school?

1.25. Of the materials we discussed today, which do you think is the most useful?

- a. _____
- b. *Don't know*
- c. *Decline to answer*

1.26. Of the materials we discussed today, which do you think is the second most useful?

- a. _____
- b. *Don't know*
- c. *Decline to answer*

1.27. Here is a final map of your ward with some schools marked on it.

[INSERT MAP F, INFORMATION ASSESSMENT]

Which school on this map do you think has the *most* number of students per classroom?

- a. School A
- b. School B
- c. School C
- d. A, B, and C have about the same number of students per classroom
- e. *Don't know*
- f. *Decline to answer*

1.28. Which school on this map do you think has the *lowest* number of student per teacher?

- a. School A
- b. School B
- c. School C
- d. A, B, and C have about the same number of students per teacher
- e. *Don't know*
- f. *Decline to answer*

1.29. Which school on this map do you think is in the area where you were *least supported* in the last election?

- a. School A
- b. School B
- c. School C
- d. I received the same level of support in the areas around all three schools

- e. *Don't know*
- f. *Decline to answer*

1.30. Do you have an education development plan for your ward?

- a. Yes
- b. No
- c. *Don't know*
- d. *Decline to answer*

1.31. In selecting schools to receive materials today, what are some things that influenced your decision? *Record all reasons.*

- a. _____
- b. *Don't know*
- c. *Decline to answer*

1.32. What are your primary responsibilities as councillor of this area? *Please record exact words and full quotes. If the councillor mentions anything about development, please write that down specifically and probe to get additional descriptions of how the councillor views his/her role in development.*

- a. _____
- b. *Don't know*
- c. *Decline to answer*

1.33. We would like to follow-up with you by phone or email if we have need for more input like this. Is this ok?

- a. Yes: Phone number or email address _____
- b. No
- c. *Don't know*
- d. *Decline to answer*

1.34. Do your children, or the children of a family member, attend a school in this ward? If so, which one?

- a. Yes: _____
- b. No
- c. *Don't know*
- d. *Decline to answer*

1.35. Did anyone endorse you in the last election?

- a. Yes: Who? _____
- b. No
- c. *Don't know*
- d. *Decline to answer*

1.36. Do you plan on running again for councillor of this ward in the next election?

- a. Yes: Why? _____
- b. No: Why not? _____
- c. Undecided
- d. *Don't know*
- e. *Decline to answer*

1.37. Do you plan to run for another government office in the future?

- a. Yes: Which one and why? _____
- b. No: Why not? _____
- c. Undecided
- d. *Don't know*
- e. *Decline to answer*

1.38. *If answer to 1.36 and 1.37 are both "no": Why have you decided to leave government office?*

- a. _____

Now I will ask a question that might be sensitive. Remember you can choose to answer or not.

- b. If you are willing to tell us, which party do you like? _____
- c. Undecided
- d. *Don't know*
- e. *Decline to answer*

Thank you for your time today. We will use your input to guide this development project. For your records, here is a certificate of participation.

Additional Questions for Project Assistants

1.39. *Record here if the councillor wanted to give to a different school, which school it was, which good it was for, what reason he gave, and what you think the true reason is.*

- a. _____
- _____

1.40. *Record here if the councillor stated a school was not in his ward and which school it was.*

- a. _____
- _____

1.41. *Record here if the councillor asked for different materials, what reason he gave, and what you think the true reason is.*

- a. _____
- _____

1.42. *Record here if the councillor asked for Tearfund to focus on another development issue, what reason he gave, and what you think the true reason is.*

- a. _____
- _____

1.43. *Record here if the councillor wanted to keep the goods, what reason he gave, and what you think the true reason is.*

- a. _____
- _____

1.44. *Record here if the councillor wanted to deliver the letter himself, what reason he gave, and what you think the true reason is.*

- a. _____
- _____

1.45. *Record here if the councillor asked about how he was selected and what the conversation was like.*

a. _____

1.46. *Record here if the councillor asked about Tearfund and what the conversation was like.*

a. _____

1.47. *Record here if they asked to contact someone else about the decision, what reason they gave, and who it was.*

a. _____

1.48. *Record here if there were any other issues in the interaction.*

a. _____
