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

Ryan Jablonski $^1$* and Brigitte Seim$^2$†

$^1$London School of Economics and Political Science
$^2$University of North Carolina, Chapel Hill

*E-mail: r.s.jablonski@lse.ac.uk
†E-mail: bseim@email.unc.edu
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Abstract
How does transparency affect distributional politics? We theorize that transparency conditions how officials choose among recipient communities, compelling them to allocate to needy communities rather than those with political supporters. We present the results of a field experiment in which 333 locally elected incumbents in Malawi made a series of real and meaningful choices about the allocation of NGO-provided development goods to schools in their constituency. Prior to allocating goods to recipient school communities, half of the incumbents were informed that letters about their allocation decisions would be sent to local oversight committees who are formally empowered to liaise between citizens and the government to foster development. We find evidence suggesting that this transparency treatment caused incumbents to allocate goods to recipient school communities with greater economic need, and to allocate less to schools in politically pivotal areas; though these effects are only observed among incumbents who are knowledgeable about their communities. 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 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, Cruz et al., 2015, Franck and Rainer, 2012, 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 (Chinsinga, 2011, Dionne et al., 2013, Ejdemyr, Kramon, and Robinson, Ejdemyr et al., 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 can 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 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 that institutional actors, such as donors, oversight committees or traditional authorities, may impose reputational or budgetary costs on those 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 outcomes of allocation decisions, we rarely have insight into how the decision was made, which actors were involved, or what incentives were at play. Peeking into this box is particularly challenging in a decentralized, developing democracy where spending outcomes are often the result of lengthy decision chains involving stakeholders at multiple levels of government, making it near impossible to come to clear conclusions about the incentives of specific actors. Research on this topic is further stymied by incumbents themselves who 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
directly, there is inherent selection bias in studying the relationship between transparency and decision-making observationally: particularly transparent areas might also be least politicized, or have higher levels of accountability for unrelated reasons.

In this paper, we present the results of a field experiment among elected officials in Malawi designed to overcome these 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 prior to 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. This conditional effect suggests that constituency experience or knowledge also plays an important role in spending effectiveness, though we also consider alternative explanations for these subgroup effects. 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.

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 insightful work about how incumbents allocate effort across clientelistic and programmatic spending strategies (Gottlieb, 2016, Keefer and Khemani, 2009, Keefer and Vlaicu, 2008, Robinson...
and Verdier, 2013, Stokes et al., 2013, Weitz-Shapiro, 2012). We also draw on and contribute to a rich literature showing that experimentally varying transparency can sometimes condition political performance (Banerjee et al., 2011, Buntaine et al., 2018, Dunning et al., 2011, Ferraz and Finan, 2011, Reinikka and Svensson, 2005). While this literature has often 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 (Chong et al., 2015, Cruz et al., 2015, Humphreys and Weinstein, 2012, Malesky et al., 2012).

This research also contributes to debates over whether international donors should channel aid through government officials or bypass governments and deliver aid directly (Dietrich, 2013). Donors in poorly institutionalized settings face the often contradictory imperatives to build local capacity and to minimize the politicization that arises from delegating decision-making to local actors (Gibson et al., 2005). This conundrum often results in donors either disengaging from local government, or implicitly permitting political capture and corruption (Dietrich, 2013, Winters, 2014). Our study shows how careful institutional design can help address this conundrum; when donors can empower institutional actors who share their preferences, and provide them with the ability to monitor government performance, they can prevent the egregious politicization of aid and ensure the local management of development resources.

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. We then detail our experimental 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 (e.g., Persson and Tabellini 2002). How would such a model differ from one in which citizens are incompletely informed? To answer this question, consider the problem of an incumbent trying to allocate a fixed set of development goods across a set of schools. Consistent with other models, we make three assumptions about this scenario. First, incumbents make this allocation decision with the primary goal of remaining in power. 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? 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, argue 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. Others extend this logic and show how a pivotal voter theory can also lead to the targeting of co-ethnic areas or areas with dense clientelistic ties since incumbents often have more ability to monitor voting or make credible spending commitments in these areas (Keefer and Vlaicu, 2008, Kramon, 2017, Stokes et al., 2013).

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; 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, Klopp, 2002, Kramon, 2017, 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.1

How does information affect this trade-off between political targeting and programmatic targeting? Note that the programmatic distributional strategies discussed above depend on citizens

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1This logic is similar to that of Keefer and Vlaicu (2008). In their model, voters care about both targeted transfers and public goods outcomes and politicians allocate across these categories based upon their ability to credibly and cheaply commit to public goods versus clientelistic spending.
observing allocation decisions. If allocation decisions are non-transparent and citizens only observe spending 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, 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 funds a new school roof 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 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; engaging in political targeting may cost the incumbent votes, thereby undermining 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. (2018), for instance, examine the effects of comparative information about budget audits in Uganda. They show that only 25% of citizens could correctly evaluate the quality of budgets in their district compared to that of other districts, suggesting that they have difficulty remaining informed about spending outside their specific community. Other studies document similar information gaps in other contexts (Dunning et al., 2011, Reinikka and Svensson, 2005), 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 indiscretions that will hurt incumbents’ careers. Thus, many incumbents should 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, Ensminger, 2017, Mwenda and Tangri, 2005, Wrong, 2009). Even in environments with a reputation for transparency, like the United States, officials frequently hide politicized development decisions 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. Many local institutional actors, like development committees and local elected officials, are also commonly excluded from allocation decisions regarding donor funds. These obfuscations 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 make two additional 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 (Klopp, 2002, Lynch, 2008). Both assumptions are also supported by voting experiments which document an effect of transparency or information on citizen support for effective programmatic decisions (Adida, Gottlieb, Kramon, and McClendon, Adida et al., Banerjee et al., 2011, Buntaine et al., 2018, Gottlieb, 2016). Among the more relevant studies is Fujiwara and Wantchekon (2013), who randomly assign deliberative 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 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 (Ferraz and Finan, 2011, Gibson et al., 2015, Montinola, 2010, Svensson, 2000, Temple, 2010). 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 Malawi.

Taken together, our arguments suggest that transparency should increase allocations among more needy citizens (programmatic targeting) and should decrease allocation to an incumbent’s core political supporters (political targeting), and more to opposition supporters. We posit an electoral mechanism to explain these results, and predict that the effects therefore will be particularly strong among incumbents that face electoral pressure. Our hypotheses were registered on the Evidence in Governance and Politics (EGAP) website prior to the assignment of treatment.\(^2\)

H1. In more transparent environments, incumbents will be less likely to target development funds based upon the political characteristics of recipients.\(^3\)

H2. In more transparent environments, incumbents will be more likely to target development funds based upon the needs of recipients.\(^4\)

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

3 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, 2017b). 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). Malawi also suffers from high inequities in development. According to one estimate, 10% of students in Malawi consume 68% of all education spending, making Malawi one of the most unequal countries in the world with respect to education spending (UNICEF, 2015, 57). Malawi’s inequities are due, at least in part, to political bias (Ejdemyr, Kramon, and Robinson, Ejdemyr et al., Resnick, 2012).

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\(^2\)H3 was not pre-registered in this form. We hypothesized that electoral pressure would increase targeting of needy and politically important communities; however we did not clarify whether this would also lead to a stronger effect of transparency. We justify this and all other deviations from the pre-analysis plan in the appendix.

\(^3\)In the pre-analysis plan, this hypothesis was listed as PAP-H17.

\(^4\)In the pre-analysis plan, this hypothesis was listed as PAP-H16.
Malawi has decentralized most development and distributional decisions. The National Decentralization Policy and Local Government Act of 1998 and related laws devolve administrative, fiscal, and political power and authority to local government, as well as empower citizens to become involved in development decisions and implementation. 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, as illustrated in Figure 1. Directly connected to the central government, the highest level of authority in decentralized government is the District Commissioner (DC). The DC is a cabinet-appointed official 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.\(^5\) 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. However, councillors were out of office from 2005-2014 after then-President Bingu wa Mutharika canceled 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.

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 develop-

\(^5\)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.
ment 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 et al., 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, 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, elected, and traditional village leaders.

![Diagram](attachment:image.png)

**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, 2017a). In addition to providing budget support to local councils, donors directly funded projects in approximately 34% of schools from 2011 to 2016,
which is roughly comparable to the percent of projects funded by the local government.\textsuperscript{7}

Local politicians frequently work closely with donors to make decisions about aid allocation in a manner that we replicate in this experiment.\textsuperscript{8} 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, 2012, Resnick and de Walle, 2013). Empirical evidence reinforces this conclusion, documenting that political biases in aid allocation have undermined development in Malawi (Dionne et al., 2013). As one interviewed District Commissioner said, “Whenever [we] conduct a meeting with the elected officials to identify the area where the development should go, most of them choose the area where he got more votes.”

The theoretical assumptions presented above are valid in the Malawi context. First, information gaps among citizens about councillor spending are often cited as a barrier to accountability (Gunya, 2016, Kapasule, 2016, Mwale, 2017). Similarly, we conducted a 2016 survey among 2,000 citizens and head teachers in Malawi which documented that information about local government allocations is incredibly low. Only 4% of citizens were able to recall anything 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 about 18% of schools.\textsuperscript{9}

Similarly, incumbents in our study are aware of the power of information, and specifically of the power of the ADC as a source of information. In a phone-based follow-up survey conducted among 100 randomly selected councillors out of the experiment sample in 2017, we asked an open-ended question about where citizens get information, and 58% of councillors said the ADC was the primary source of information for citizens. In response to another open-ended question in that same survey, 70% of councillors said they would approach the ADC if they wanted to spread positive information about their decisions in office to their constituents.\textsuperscript{10} Behaviorally, in our experiment, councillors attempted to spin or manage the revelation of allocation information to the ADC by preventing us from delivering transparency treatment letters, or by intercepting such letters in district offices.\textsuperscript{11}

Citizens in Malawi are nonetheless invested in the development activities of district govern-

\textsuperscript{7}About 38% of schools received projects from local governments during the same period. These statistics are based on a survey with teachers in 311 schools. See the Appendix for details.

\textsuperscript{8}Most councillors admit to being individually approached by donors to consult on development projects at least once each month (author survey).

\textsuperscript{9}We describe this survey further in the Appendix.

\textsuperscript{10}These two questions were part of a 20-question follow-up survey conducted in November 2017 over the phone among 100 randomly selected councillors from the experiment sample. We provide further details in the Appendix.

\textsuperscript{11}For example, incumbents would often offer to “hand deliver” notices to the ADC rather than to have the research team send them directly. Based on Research Manager notes, in an estimated 20% of cases, incumbents appear to have intercepted letters in district offices to prevent them from reaching the ADCs.
ment and are willing to take action to hold government officials accountable for public goods provision (Chirombo, 2017, Gunya, 2016, Jali, 2017, Malawi News Agency, 2017). In the survey among citizens and head teachers, we found a strong and positive correlation between the perception that a councillor was effective and plans to vote for the councillor again (r=0.56, p-value<0.0001). Focus group discussions with citizens confirm voter willingness to punish 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 [of the constituency] 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.12

Similarly, incumbents are sensitive to the satisfaction of citizens. Several interviewed councillors 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.” Demonstrating the links between information, the ADC, and councillor accountability, once councillor said, “Citizens can come to my home and get information about any project which they think they don’t have enough information. I can also advice them to go to the the chairman of ADC to get extra information about the project.” Specifically, in the follow-up survey among councillors, 72% of councillors agreed citizens would be less likely to vote for them if they allocated development to their core, 81% agreed citizens would be more likely to vote for them if they allocated development to those in need, and 75% agreed that citizens would prefer need-based allocation even if the citizens were not the ones to benefit from it.

12Consistent with our argument, concerns from teachers were not limited to those who did not benefit from project allocations.
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. Finally, after the experiment was completed, we conducted a follow-up survey among a random sample of 100 of the experiment participants to ask them additional questions about the accountability structures they face. Further details on the surveys among head teachers, citizens, and the follow-up survey of councillors are in the Appendix.

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. 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. Our experiment is also somewhat unique in its use of choice experiments to understand the behavior of elected officials. While such experiments have frequently been used to model consumer choice, we are the first, to our knowledge, to use it to analyze the behavior of elected officials.

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. In order to solicit this decision, the RA showed each incum-

\footnotesize{\begin{itemize}
\item[14]See Stokes et al. 2013 for a review of the evidence on various distributional politics models.
\item[15]For recent reviews in health and ecological economics see Clark et al. (2014) and Hoyos (2010).
\end{itemize}}
bent three maps, each of which indicated the location of three randomly selected schools in their constituency. 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. Each incumbent allocated goods to a total of three schools out of a possible nine. An example of a map displayed to incumbents is shown in Figure 1 below. When shown a map, incumbents 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 the Appendix.

![Schools in Your Ward](image)

**FIGURE 2: Example Map of Schools**

In each of the three distributional decisions, the incumbent allocated a different development

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16Councillors are elected in units called “wards.” However, to align with the broader distributive politics literature, we use the term “constituency” to refer to incumbents’ electoral units. This should not be confused with the Constituency, which is a higher-level unit from which MPs are elected.

17Most incumbents chose three schools, however within some smaller wards it was not possible to generate three maps because there were not at least nine schools available. In such cases, incumbents only chose one or two schools to receive the goods. The three schools were randomly selected from a comprehensive list of primary schools in the constituency collected by the Ministry of Education. A small proportion of schools were excluded from this list because information about the characteristics of the schools was lacking from government records.

18Ultimately, about 20% of the schools selected by the councillors were chosen in the lottery to receive goods. A description of the lottery process is included in the Appendix.
good. One of the development goods was a set of iron roofing sheets. Few schools in Malawi have adequate classrooms, and the rainy season often means that classes are canceled, 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 development good was a set of teacher supplies kits, each of which included a box chalk, a chalkboard eraser, pens, notepads, and a plastic tote bag. We chose these goods based on discussions with donors working in Malawi’s education sector and with other project stakeholders. Our interviews with incumbents and teachers suggest that these goods are all highly valued.

At the incumbent level, we randomized the level of transparency associated with the incumbent’s decision. Specifically, we aimed to construct a treatment that would 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 achieve this aim, 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.

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 recommended to receive goods would be sent to the ADC (transparency treatment) or that no one will be told which schools she recommended to receive 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 3 for an image of an example letter). These letters were later filled out and sent individually to relevant ADCs by our research team. Based on research manager notes, in an estimated 40 cases (44%), a representative of the ADC or a representative from the schools named in the letter called the Research Manager to gather more information. We also administered other treatments in the experiment to test how information and aid branding affected allocation decisions. These treatments were orthogonal to the transparency treatment by design. Since

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19 The order in which incumbents made decisions over different goods was randomly assigned. In Appendix Figure A2 and Figure A3, we evaluate heterogeneous treatment effects by good type. We see little evidence that treatment effects differ across goods. We show pictures of the goods in the Appendix.
20 Author focus groups with voters and interviews with councillors.
21 This is likely a censored indicator of ADC interest, given the resources required to find the Research Manager’s phone number and place the call.
There are no significant interactions between the treatments, we choose to discuss these results in a separate manuscript.\textsuperscript{22}

\textbf{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 is primarily a treatment associated with informing the general Malawian population. The ADC is frequently cited as a source of information for the Malawian people in the media, particularly regarding holding government accountable for

\textsuperscript{22} In appendix Table A8 we show results interacting the transparency treatment with our information treatments. We see no evidence of an interaction across the information and transparency treatments. Though not presented in the manuscript or appendix due to page limits, models interacting the transparency treatment with the aid branding treatment also reveal no interaction across these two treatments.
public service delivery (Chirombo, 2017, Gunya, 2016, Jali, 2017, Malawi News Agency, 2017, Mwale, 2017, Pondani, 2017). In the follow-up survey of councillors, 83% agreed that the ADC is powerful primarily because it is a link to constituents. Similarly, as one ADC representative 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.” Another said, “[The ADC can help the people not to vote for you in the next election. So you need to be accountable to them. Also, [it] is a link from the people to the council.”

Further, although the question posed to the councillors was open-ended regarding the role of the ADC and how they hold councillors accountable, fewer than 1% of the councillors mentioned involving donors, and all mentioned involving citizens or “the people.” 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 ADCs were shared widely. When we visited schools several months after the letters were sent, an estimated 40% of teachers and 30% of community leaders were already aware of the project.

Incumbents viewed the decision to allocate aid through our experiment as a realistic and meaningful decision. Behaviorally, an estimated 30% of the sampled incumbents contacted the Research Manager following data collection to learn when the lottery would be held and the goods delivered. Twenty percent of 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. 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. Similarly, in the follow-up survey of councillors, 100% reported being approached in the last three months by a donor to consult on a development project in their ward individually, outside of the context of the full council. On average, councillors had been approached 3.4 times in the last three months to provide consultation of this nature, indicating that the experiment context aligns with typical councillor experiences. Finally, donor-funded projects at primary schools are common across Malawi and widely covered in the media (see, for example, Chilundu (2016), Jobo (2017), Kumbani (2015), Moyo (2017)).

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23 Estimates based on Research Manager notes.
24 This is likely a censored indicator of councillor interest, given the resources required to find the Research Manager’s phone number and place the call.
25 These certificates were not accepted at lower or higher rates across treatment groups, indicating that these certificates did not substitute for the transparency treatment in some way.
The experiment was designed to mitigate several validity concerns. A first concern was 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 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.²⁶

5 Sampling

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%.²⁷ 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 16 subjects were dropped due to technical issues.²⁸ No subjects refused to participate in the survey. The resulting 310 sampled elected councillors are reasonably representative of the distribution of councillors as a whole in Malawi, as shown in the Appendix. One exception is that we tended to under-sample less populated areas, largely due to the greater data availability challenges in these areas. 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 show the balance statistics across pre-treatment variables

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²⁶We analyze the characteristics of incumbents that score well in Appendix Table A2.
²⁷Council polling station level data for several areas are unavailable, potentially due to irregularities in the election tallying process (Patel and Wahman, 2015).
²⁸Several 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. As specified in our pre-analysis plan, we assessed whether these availability challenges and technical issues were correlated with the transparency treatment, and find no significant difference in attrition across treatment and control groups.
on incumbent and school-level characteristics. In Appendix Table A3, we show similar balance statistics across all covariates used in our analysis.

6 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 development allocation. Below, we describe our approach to measuring each of these variables, as specified in our pre-analysis plan.

6.1 School Needs

In order to measure 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 over-committed and underpaid. Primary school teachers are expected to teach 75 students on average, though some have more than 200. (For comparison, the global average is 23 students
### TABLE 1
Balance Across Treatment and Control

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Control</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incumbent Age (years)</td>
<td>41.29</td>
<td>41.83</td>
<td>-0.53</td>
</tr>
<tr>
<td></td>
<td>(9.16)</td>
<td>(9.33)</td>
<td>(1.05)</td>
</tr>
<tr>
<td>Incumbent Education</td>
<td>2.26</td>
<td>2.16</td>
<td>0.11</td>
</tr>
<tr>
<td>(level on 6-point scale)</td>
<td>(0.59)</td>
<td>(0.43)</td>
<td>(0.06)</td>
</tr>
<tr>
<td></td>
<td>(1.68)</td>
<td>(1.47)</td>
<td>(0.18)</td>
</tr>
<tr>
<td>Incumbent Victory Margin</td>
<td>0.23</td>
<td>0.25</td>
<td>-0.02</td>
</tr>
<tr>
<td>(%)</td>
<td>(0.22)</td>
<td>(0.24)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Incumbent Gender</td>
<td>0.89</td>
<td>0.91</td>
<td>-0.02</td>
</tr>
<tr>
<td>(% male)</td>
<td>(0.32)</td>
<td>(0.28)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>School Needs (mean)</td>
<td>-0.01</td>
<td>0.07</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>(0.68)</td>
<td>(0.57)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>School Number of Classrooms (mean)</td>
<td>8.35</td>
<td>7.78</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>(3.00)</td>
<td>(2.41)</td>
<td>(0.31)</td>
</tr>
<tr>
<td>School Number of Teachers (mean)</td>
<td>13.33</td>
<td>12.71</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>(5.67)</td>
<td>(5.59)</td>
<td>(0.64)</td>
</tr>
<tr>
<td>School Enrollment (mean)</td>
<td>953.88</td>
<td>934.47</td>
<td>19.41</td>
</tr>
<tr>
<td></td>
<td>(451.64)</td>
<td>(380.33)</td>
<td>(47.55)</td>
</tr>
<tr>
<td>Ward Number of Registered Voters</td>
<td>18390.16</td>
<td>18160.6</td>
<td>229.56</td>
</tr>
<tr>
<td></td>
<td>(8285.93)</td>
<td>(6886.2)</td>
<td>(869.45)</td>
</tr>
</tbody>
</table>

Notes: N=310. Columns 1 and 2 show the means for the treatment and control groups. Column 3 shows the difference between the two means. Standard deviations are shown below in parentheses.

We have reason to believe these measures of school need are associated 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 mentioned enrollment levels, the number of classrooms, and the number of teachers houses. 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.

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There are some need-based characteristics that these data do not capture; several also mentioned that they 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. However, during the experiment, when we asked incumbents to justify their decisions, among the 299 that gave an answer, 31 specifically mentioned classroom or teacher overcrowding. Finally, these school need variables also appear important for actual decision-making (World Bank, 2017a).
making as we show in Figure 6.

As an additional validation exercise, and to ensure that these measures align with on the ground conditions, after the experiment was concluded we visited 315 of the schools in our sample and conducted surveys among the head teachers of the schools and citizens in the area, 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 Figure A10, the results align well with our chosen measures of school needs, as well as the justifications for allocation decisions in the experiment that incumbents provided. The highest priority issues by far (named by over 60% of head teachers and citizens) were overcrowding in classrooms or teacher houses. Teachers also frequently mentioned needing more staff, various facility improvements including electricity, and learning materials.

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.\(^{31}\)

### 6.2 Political Support

In order to measure the political characteristics of communities, we collected polling-station level data from the Malawi Electoral Commission on the votes received by all candidates for district-level councils. Nearly all polling stations are 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. There is considerable debate about which citizens are most likely to be targeted by pork barrel or clientelistic allocations, and studies suggest that such strategies are contingent on the social and institutional environments faced by incumbents (e.g., Stokes et al. 2013). 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 net-

\[^{31}\text{School Needs} = \frac{x-\mu_1}{\sigma_1} + \frac{x-\mu_2}{\sigma_2} + \frac{x-\mu_3}{\sigma_3}\] where \(\mu_i\) and \(\sigma_i\) indicate the means and standard deviations of students per teacher, students per classroom, and proportion of temporary classrooms for all available primary schools in Malawi.
works, or information (Burgess et al., 2015, Keefer and Vlaicu, 2008, Kramon and Posner, 2013, Stokes et al., 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 those funded by foreign donors, are often biased in favor of strong supporters of the incumbent government (Brazys et al., 2015, Chinsinga, 2011, Dionne et al., 2013, Ejdemyr, Kramon, and Robinson, Ejdemyr et al.). Our interviews with incumbent councillors and focus group discussions with citizens confirmed that targeting core voters is a common strategy among elected officials in Malawi. 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 on the literature and our field research, our prior–specified in advance of randomization in our pre-analysis plan–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 the Appendix, we also re-estimate our results using alternative conceptualizations of political pivotality, including the total number of votes received by the incumbent and the percent of votes received by the leading opposition candidate.

We also take steps to rule out a swing voter effect. While we do not have data on the intensity of voter preferences, we can test whether politicians are more likely to allocate to communities where votes are more evenly divided between the incumbent and opposition candidates, which would imply non-linearities in the effect of Percent Votes on allocation decisions. We see no evidence consistent with a swing voter hypothesis. Nor do we see evidence that communities which supported the leading opposition candidate are systematically benefited or discriminated against in distributional decisions. One might also wonder whether co-ethnic targeting explains

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32 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, though the results are consistent regardless.

33 In the pre-analysis plan, we pre-specified the expectation that councillors would be more likely to allocate to schools located in areas with higher support for opposition councillors in the last election as PAP-H18.
some of our effects. While we do not have community level data on ethnicity, we find this explanation unlikely. Ethnicity typically does not vary extensively within wards, and competing candidates for local office often share ethnicity.\footnote{Malawi’s ethnic groups tend to be spatially concentrated. Moreover, once one accounts for region, ethnic heterogeneity has little ability to predict partisanship, particularly in recent elections (Ferree and Horowitz, 2010). While we lack within-ward data on ethnic heterogeneity, 78\% of councillors indicated to us that their ward consists primarily of one ethnic group. Additionally, in a survey of 2,000 citizens sampled from schools used in the experiment (see the Appendix for details) we found an average within-ward ELF score of 0.29, compared to a score of 0.89 for Malawi as a whole (using the same data). Finally, citizens’ greater knowledge of local versus national political performance also likely attenuates ethnic voting in local elections Casey (2015).}

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 regressions of school selection on the z-scores of school or polling station-level covariates. All regressions include incumbent fixed effects and standard errors clustered on the incumbent. These estimates appear to confirm that incumbents consider both need and political support when making allocation decisions.\footnote{In the pre-analysis plan, these expectations were PAP-H1 and PAP-H2, respectively.} A one standard deviation increase in an incumbent’s percentage of votes (21\%) increases the probability of selection by 0.06. A standard deviation increase in school need (1.9) increase the probability of selection by 0.04. These represent sizable substantive effects: a two standard deviation increase in need or votes would increase the probability of selection by approximately 36\% and 24\% respectively.
6.3 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 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.36

We take steps to validate that these variables are reasonable measures of incumbent knowledge. In Appendix Table A2, 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. Similarly, incumbents who won the 2014 election with a close margin are significantly more likely to have a high Political Knowledge score.

7 Analysis

We are interested in the probability that a school is selected in each of the respondent’s choice sets (as shown in each of the maps provided to each incumbent in the experiment), and how this probability varies with the characteristics of the school and whether the respondent is in the transparency condition. Let $z_{is}$ equal the characteristics of each school $i$ in choice set $s$, such as the percentage of votes for the incumbent or the level of need. We can represent the probability an incumbent selects a particular school in set $s$ conditional on $z_{is}$ using the conditional logit estimator shown in Equation 1 (McFadden, 1973).

$$P(y_{nisi} = 1) = \frac{e^{\beta_{s}z_{is}}}{\sum_{j=1}^{J}e^{\beta_{s}z_{ij}}} \text{ for } j = 1, 2, 3$$

However, conditional logit estimators rely on several assumptions which may be problematic here, such as constant effects across respondents and independence of irrelevant alternatives. We therefore also estimate the probability of school selection using a mixed logit (ML) estimator for repeated panel data (sometimes also called a random effects logit). This estimator extends

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36In 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 10% or 0% cut-offs. In some cases, there were not enough schools in a ward to adequately test an incumbent’s knowledge. We drop these incumbents from the main analysis; however, the results remain substantively unchanged if we instead impute the knowledge variables for these incumbents using the mean values of the knowledge variables.
the conditional logit by allowing $\beta$ to vary randomly across each respondent, $n$, and has the advantage of allowing for random taste variation and correlation in the estimated parameters. We estimate the mixed logit equation in Equation 2 using the approach in Croissant (2018), which relies on maximum simulated likelihood. In practice, the choice of a mixed or conditional logit makes little difference, and we show consistent results using both estimators.\(^{37}\)

\[
P(y_{nsi} = 1) = \int \prod_{s=1}^{S} \frac{e^{\beta s z_i}}{\sum_{j=1}^{J} e^{\beta s z_j}} f(\beta) d\beta \text{ for } j = 1, 2, 3
\] \hspace{1cm} (2)

We hypothesize that the utility of selecting high votes or high need schools will vary across respondents in treatment and control conditions. Let $t_n$ be our randomly assigned transparency treatment, and let $X_{nsi}$ be a vector of control variables, which include school characteristics, community demographics and political characteristics.\(^{38}\) We represent our estimation problem in linear form in Equation 3 below. In mixed logit estimates, we allow the effect of $z_i$ to be random with respect to incumbents, and other variables to be fixed. Since the treatment is assigned at the level of the incumbent, we also cluster our standard errors by incumbent.

\[
P(y_n = 1) = \phi(\beta_n z_i + \beta_1 t_n z_i + \lambda X_{nsi} + \eta_i)
\] \hspace{1cm} (3)

We are primarily interested in the average effect of treatment on the probability of school selection at each level of School Needs or Percent Votes. As discussed above, we also allow the treatment effect to vary by School Knowledge and Political Knowledge. We do this by interacting these knowledge variables with $t_n$ and $z_i$ in Equation 3 and adjusting our marginal effect calculations accordingly. We expect treatment effects will be less consistent with the null hypothesis among subjects with better knowledge of their constituency.\(^{39}\) For ease of interpretation, we normalize School Need and Percent Votes in these models using z-scores. This allows us to use a standardized scale to interpret the marginal treatment effects across different variables and units. It does not affect the treatment effect estimates. It is important to note that all constituent interaction terms are included in Equation 3 and the results below. Variables which are constant

\(^{37}\)In the pre-analysis plan, we specified using a linear probability model; however, we now believe the maximum likelihood estimator is more appropriate, as it is more consistent with the data generating process and current recommended practice in the choice experiment literature (Clark et al., 2014, Train, 2009). Moreover, since the variance in discrete choice data varies across tasks, OLS can provide biased or inefficient estimates. See Hauber et al. (2016) for a comparison of estimation techniques.

\(^{38}\)With the exception of some unavailable political and demographic variables, we include all control variables specified in the pre-analysis plan that vary within choice sets. Summary statistics and coding details for these variables are in the Appendix. 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).

\(^{39}\)These constituency knowledge variables were defined in our pre-analysis plan and discussed as a way to measure incumbent knowledge and condition treatments. However, we did not pre-specify a hypothesis about the conditioning effects of knowledge on transparency.
within choice sets drop out of estimating equations since they have no effect on the probability of school choice.\footnote{Since incumbents always select exactly one school in each choice set, incumbent-level covariates have no explanatory power, expect with respect to how they interact with school characteristics. One exception would be if individual specific variables had an effect on the ordering of an incumbent’s selection. For instance, if treatment is inducing satisfying behavior, we might observe a bias in favor of the first or last school on the map. We allow for this possibility in mixed logit models by including intercepts for each school and interacting the intercepts with treatment. The evidence is not consistent with an effect of treatment on choice ordering.}

\section{8 Results}

We begin by estimating the effect of transparency on the allocation of goods to needy schools. We expect that when incumbents expect their decisions to be announced to ADCs, they should be more likely to allocate goods to needy schools. Since the treatment effect is conditional on values of School Need, it is easiest to view the marginal effects visually, so we plot the treatment effects across the full range of values of school need in Figure 7.\footnote{Note that since these are fixed effects estimators, the predicted treatment effects are only defined for the average respondent. Predictions for individual respondents will depend upon the range of variables within their choice sets. For discussion see Train (2009, 29-32).} However we also show the results in tabular form in Table 2.\footnote{This table excludes coefficient estimates for control variables. In Appendix Table A4 we also provide a table with the coefficient estimates for all variables.}

The results provide suggestive but mixed evidence that transparency increases the importance of need in allocation decisions. In Table 2, Models 1 and 2, and Figure 7a, we see no difference between treatment and control groups, going against H1. The results are more consistent with H1 when we estimate the conditional effect among incumbents who demonstrated knowledge about school characteristics (Models 3-5 in Table 2 and Figure 7b). Here, the treatment decreases the probability that a lower need school is selected and increases the probability that a higher need school is selected. On average, and among high knowledge incumbents, treatment group incumbents are 9% more likely than control group incumbents to select schools with needs at two standard deviations above the mean. This effect is significant at $p = 0.099$. Treatment group councillors are also 8% less likely to select a school two standard deviations below the mean ($p = 0.14$). The coefficient estimates vary only slightly across conditional and mixed logit models, or with the inclusion of covariates.

In Figure 8 we also plot these effects by each component of our need index. The largest effects are for classroom and teacher overcrowding. We see little effect of our measure of classroom quality. This is consistent with the statements of incumbents themselves, who often emphasized the importance of structural overcrowding in their allocation decisions, as well as consistent with
the stated priorities of teachers in our survey.43

The fact that the effect of transparency is conditional on school knowledge may indicate 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. Later in this article we also consider alternative explanations.

We next consider how treatment affected allocation to schools located in communities where incumbents received a large percentage of votes. We expect that transparency will decrease the probability that incumbents engage in political targeting (H2), and the results in Table 2 and Figure 9 provide some support for this hypothesis. Similar to the results for School Needs, in Figure 9a we see no average effect of treatment. However, in Figure 9b we show estimates conditional on incumbents demonstrating knowledge of the political characteristics of their constituency. Among knowledgeable incumbents, the transparency treatment causes incumbents to

\[ p_{2\sigma} = 0.82 \]
\[ p_{-2\sigma} = 0.61 \]
\[ N = 675 \]

\[ p_{2\sigma} = 0.099 \]
\[ p_{-2\sigma} = 0.14 \]
\[ N = 626 \]

**FIGURE 7: The Treatment Effect of Transparency by School Need**

Notes: This figure shows the marginal effect of the transparency treatment on the probability of selecting a school for each level of School Needs. Panel A provides the average effect for all incumbents and Panel B shows the effects conditional on the incumbent choosing correct answers in the School Knowledge questions. Thick lines indicate the average effect and the thin lines show the 95% confidence interval. The histogram shows the frequency distribution of the School Needs variable. The provided p-values are evaluated at +/- two standard deviations from the mean. Values are simulated from Models 2 and 4 in Table 2 with covariates set at the mean.

See the Appendix for a discussion of our post-experiment survey with teachers.
Figure 8: The Treatment Effect of Transparency by Component of School Need

Notes: This figure shows the marginal effect of the transparency treatment on the probability of selecting a school by each level and component of School Needs for high knowledge incumbents. Shaded lines show the 95% confidence interval and vertical bars show the frequency distribution of the conditioning variable. The provided p-values are evaluated at +/- two standard deviations from the mean. Values are simulated from the results shown in appendix Table A4 with covariates set at the mean.
The Effect of Transparency, Need and Votes on School Allocation

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<th>Mixed</th>
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<td>(0.124)</td>
<td>(0.121)</td>
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<td>(0.155)</td>
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<td>Treatment*Need</td>
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<td>−0.044</td>
<td>−0.338**</td>
<td>−0.348**</td>
<td>−0.341**</td>
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<td>(0.104)</td>
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<td>−0.344**</td>
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<td>(0.228)</td>
<td>(0.206)</td>
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<tr>
<td>Percent Votes</td>
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<td>0.253**</td>
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<td>0.095</td>
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<td>(0.098)</td>
<td>(0.106)</td>
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<td>(0.158)</td>
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<td>(0.186)</td>
<td>(0.201)</td>
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<td>Treatment<em>Political Knowledge</em>Votes</td>
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<td>−0.674**</td>
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<td></td>
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<td>(0.263)</td>
<td>(0.275)</td>
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<td>(0.207)</td>
<td>(0.213)</td>
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<td>(0.207)</td>
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<td>Yes</td>
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<td>0.055</td>
<td>0.074</td>
<td>0.039</td>
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<td>−695.407</td>
<td>−650.081</td>
<td>−636.612</td>
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*p<0.1; **p<0.05; ***p<0.01

Notes: Models 1-4 show mixed logit estimates with standard errors clustered on respondent. Model 5 shows conditional logit estimates. Included but not shown in Models 2, 4, and 6 are controls for Percent Votes, Percent Votes*Treatment, Percent Votes*Treatment*Political Knowledge, Number of School Classrooms, Number of Teachers (log), School Enrollment (log), Relative School, Number of Temporary Classrooms (log), Number of Permanent Classrooms (log), Ward Turnout (log), Ruling Party Vote Share (MP Election), Ruling Party Vote Share (Councillor Election), Percent Votes, Runner-up Incumbent Councillor, and intercepts for each school.

Become less likely to select schools where they received a large proportion of votes, and more likely to select schools where they received fewer votes. Incumbents exposed to treatment were 11% less likely to select a school where votes for the incumbent were two standard deviations greater than the mean ($p = 0.05$). They were 23% more likely to select a school where votes were two standard deviations less than the mean ($p = 0.064$).

In H3, we theorized that the effect of transparency should be greatest among incumbents who faced electoral pressure. In Figure 10, we separate the sample based upon whether incumbents...
indicated to us that they planned to contest the 2019 election. Consistent with this hypothesis, treatment effects are greater among incumbents contesting the election. These incumbents are more likely to respond to the transparency treatment by allocating to high need schools and away from communities with a high percentage of votes. Among incumbents who do not plan to contest the election, we see—if anything—the opposite effect of treatment on allocation decisions to high vote areas.\footnote{The small number of incumbents not intending to contest the next election makes these effects difficult to interpret.} These results are consistent with incumbents considering the electoral consequences of their actions when making decisions about the allocation of development goods. In Appendix Figure A2 and Figure A3, we also test whether incumbents who won by a closer victory margin than average are more likely to respond to the transparency treatment. We find less evidence consistent with H3 in this model.

Together, these results suggest that 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.

**FIGURE 9:** The Treatment Effect of Transparency by Percent Votes

Notes: This figure shows the marginal effect of the transparency treatment on the probability of selecting a school by Percent Votes. Panel A provides the average effect for all incumbents and Panel B shows the effects conditional on the incumbent choosing a correct answer in the Political Knowledge question. Thick lines indicate the average effect and the shaded area shows the 95\% confidence interval. The histogram shows the frequency distribution of the Percent Votes variable. The provided p-values are evaluated at +/- two standard deviations from the mean. Values are simulated from Models 2 and 4 in Table 2 with covariates set at the mean.
Figure 10: The Treatment Effect by Contestation Plans

Notes: This figure shows the marginal effect of the transparency treatment on the probability of selecting a school by Percent Votes and School Need for knowledgeable incumbents. Panel A provides the average effects for incumbents who plan to contest the 2018 election and Panel B shows the effects for incumbents who do not plan to contest.

9 Interpretation and Robustness

There are several potential challenges in interpreting these results. First, one might worry that social desirability biases these estimates. We emphasized to incumbents 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 particularly great concern for us since our intention with the experiment is to mimic typical donor-politician interactions, and incumbents often have to worry about the implications of donor oversight in making such decisions. Moreover, 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. Also, if such bias exists, it would attenuate our treatment effect, as 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 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. If so, this would not imply bias in our treatment effects, but would challenge our preferred interpretation of these effects. We do our best to motivate and justify our measures with focus groups and post-treatment survey questions. Nonetheless, we recognize that this attribution issue remains an unavoidable 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. In the Appendix, we consider tests of several alternative measures of political targeting. We see no evidence consistent with incumbents targeting swing voters or punishing opposition voters, though we do see evidence consistent with incumbents targeting communities with a greater number (rather than percent) of supporters.

Relatedly, one might worry about the interpretation of the heterogeneous effects based on school and political knowledge. It could be the case that incumbents who 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 different effects among these incumbents. As discussed above, we take several steps to demonstrate that these measures reflect incumbent knowledge. Also, in Appendix Table A7, we include as controls two- and three-way interactions of incumbent-level covariates with the Treatment, Percent Votes and School Needs. These tests allow 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 the transparency treatment among knowledgeable incumbents are not primarily driven by other measurable characteristics.

One might also be interested in how the effects of transparency vary across incumbent characteristics. In Appendix Figure A2 and Figure A3 we consider heterogeneous treatment effects
by gender, party, choice characteristics and victory margin. We see some differences across party and gender; though given the small sample sizes for these sub-groups, we interpret these results cautiously.

10 Discussion and Conclusions

Citizens and members of the international development community frequently bemoan the mis-allocation 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 varied decision environment. We randomly manipulated the transparency of distributional decisions by informing half of the 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 suggest that transparency plays a key role in distributional decisions. 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 with a high percent of votes for the incumbent were 11% less likely to be selected by knowledgeable incumbents in the transparency condition than in the non-transparency condition; communities with few votes were 23% more likely to be selected. 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. There are compelling areas for future exploration. First, there is research left to be done exploring the role of knowledge in mediating
these effects. One potentially valuable implication of our findings is that policymakers should combine civic education with transparency, in order to increase the demand for or supply of constituency knowledge. However, we caution that this prescription is speculative. It could also be the case that the type of incumbents who choose to invest in constituency knowledge are different in ways we cannot measure, and it is important that future research tease out the causal mechanisms underlying these conditional effects.

Another important concern is that Malawian councillors may not be representative of elected officials in other contexts. 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. Similarly, we do not know how our findings might translate given a different origin of the development funds or goods to be allocated; perhaps the name of the international NGO attached to the letter to the ADC was a different treatment for the councillors than would be the name of a domestic NGO or a central government agency. Given the frequency with which councillors discussed international NGOs in particular as both agents of development and of accountability, we would anticipate the involvement of the NGO in our study (Tearfund) was a particularly strong treatment. Another vital caveat regarding generalizability 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 councillors would 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 we do not dispute 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., Gibson et al. 2015, Resnick and de Walle 2013, Winters 2010). 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.

References


Hoyos, David (2010). The state of the art of environmental valuation with discrete choice experiments. Ecological Economics 69(8), 1595 – 1603.


