



Information and Accountability:

— Evidence Syntheses of Within-
Government and Citizen-Government
Accountability Pathways

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LILY L. TSAI, BENJAMIN S. MORSE, GUILLERMO TORAL, AND VARJA LIPOVSEK
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What Do We Know About Transparency and Non-Electoral Accountability?

1. Overview

Does government transparency lead people to press for better performance by bureaucrats and frontline service providers? Government transparency — defined here as access to information about the responsibilities and actions of those in government — is widely viewed as a prerequisite for good governance.¹ In canonical models of accountability (Fearon 1999), transparency enables voters to vote out politicians who underperform and re-elect those who deliver; enables citizens to identify when street-level bureaucrats fail to uphold their obligations and to take corrective action; and enables officials within government to sanction or reward other government actors, typically at lower levels, in accordance with their performance.

Over the past decade, studies have shown that transparency initiatives that increase access to information can lower corruption among street-level bureaucrats (Banerjee et al. 2016; Olken 2007), enhance the quantity and quality of public services (Pandey, Goyal, and Venkatesh 2009), and improve citizen well-being (Björkman and Svensson 2009). Simultaneously, advancements in information and communications technology have made it easier than ever before to access and disseminate such information. Together, these developments have motivated millions of dollars in transparency initiatives.

Yet, despite the growing interest among policymakers in harnessing the power of information to improve governance — and the growing availability of studies that assess the efficacy of this approach — evidence reviews

1. As Kosack and Fung (2014) note, “there is no single conception of transparency; rather, transparency has multiple meanings, as well as multiple rationales, purposes, and applications” (p. 67). Our definition follows that of World Bank (2016), which defines “transparency” as “access to publicly available information about the actions of those in government and the consequences of these actions.”

that can be used to inform policymakers' investments and define priority research areas remain scarce.² This is especially true regarding evidence on information and accountability relationships *outside the realm of elections*, such as those between officials within government or between citizens and frontline providers.

To address this gap, we look comprehensively at the evidence on the impact of government transparency on *non-electoral accountability*. We examine studies published between 2007 and 2016 that assess the impact of government transparency on the performance of *unelected* government actors, such as bureaucrats and frontline service providers.

To organize the evidence, this report develops a theoretical framework to identify and unify the various mechanisms through which information may lead to greater government accountability. We identify three main causal mechanisms, which help to organize and categorize different types of accountability-enhancing information interventions: (1) increasing knowledge of how to monitor and sanction, (2) increasing motivation to do so, and (3) lowering monitoring costs.

Our hope is that this framework will not only help to identify gaps in the evidence base in a clear and concise manner, but also bring clarity and coherence to the theoretical relationship between information and accountability — and thus help guide development programs that aim to leverage information for improving accountability in the field.

Using this framework, we then conduct two evidence reviews on ***non-electoral accountability***.

Review of within-government accountability. The first review examines studies that focus on government officials as accountability actors. This review examines the impact of information on “within-government accountability,” i.e., efforts by actors within the government to hold other government officials accountable. This category includes those in the executive branch of government (e.g., politicians holding bureaucrats accountable or bureaucrats holding local service providers accountable) or those in horizontal accountability institutions and the judicial branch (e.g., judges, prosecutors, auditors).

Review of non-electoral citizen (or “social”) accountability. The second review examines studies on the effect of information on citizens' efforts to hold unelected officials accountable and/or downstream impacts on the behavior of government actors.

HIGH-LEVEL FINDINGS

Based on these reviews, we make several overarching reflections.

Quantity of evidence is thin and “lumpy.” First, and most notably, the evidence base is thin and disproportionately concentrated in particular regions, countries, and sectors. Despite an exhaustive search process, we identified just 43 studies that assess the impact of information on government accountability. Of these 43 studies, 26 were in the education and health sectors, and 25 were from just three countries — India, Indonesia, and Uganda. Moving forward, we need studies from a wider variety of contexts and policy areas

2. In part, this reflects the speed with which this literature has emerged — of the studies reviewed here, more than 50% were published within the past two years or remain as working papers yet to be published. Nevertheless, several high-quality, if somewhat outdated, reviews have been published in recent years (see, e.g., Kosack and Fung {2014}, Gaventa and McGee {2013}, and Fox {2015}).

to understand the scope conditions that govern whether and when information is effective at improving governance outcomes.

Most studies show a positive impact, but we need to be careful about generalizing global impact, due to incentives for reporting significant effects as well as the “lumpiness” of the evidence. Our reviews show that increased information had some form of beneficial impact on over half of the outcomes measured across all studies — but it is critical to note that this result does not lend itself to easy interpretation. It should not be taken as evidence that informational interventions are typically effective or ineffective. Studies with positive impacts are more likely to be published (or written) than those without, leading to upward bias in the reported effects. In addition, researchers may spend fewer resources collecting data on outcomes they do not think will be affected by the intervention, also leading to upward bias in the reported effects. Thus, subtle or difficult-to-measure impacts often go unmeasured, which can lead to downward bias in the reported effects. These limitations, of course, afflict all literature reviews and meta-analyses, and ours is no exception. Rather than focusing on “average” impacts across all existing studies, we argue that a more productive approach is to focus on the contextual conditions that appear to influence whether and when information is effective, drawing on both qualitative insights from the literature and analysis of hard data on impacts across studies. For a practical illustration of this approach, refer to our “Solutions in Context” memo.³

For both within-government accountability and citizen-government accountability, transparency and information provision seem to be most effective in contexts that have actors and mechanisms to implement top-down sanctioning. Though the evidence remains thin, studies and significant effects for both within-government and citizen-government accountability are concentrated in developing contexts that have actors and mechanisms to implement top-down sanctioning — i.e., where higher levels of government show some willingness and capacity to punish poor performance at lower levels.

Transparency and information provision may be more effective at stimulating citizen-led accountability when citizens have strong individual material incentives to monitor service provision, and when providers have the ability and resources to improve performance. Results from studies on citizen engagement are consistent with the idea that information is most likely to be effective when (1) citizens have strong material incentives to monitor and/or sanction government actors in pursuit of improved service delivery and (2) providers have the ability to respond to these pressures.

Evidence on causal mechanisms is limited. We find that most of the interventions covered in the research address only one or two steps in the causal pathways from information to government accountability. For example, many studies of citizen accountability focus on whether information provision increases citizen monitoring, but few look at what happens as a result of the monitoring — that is, whether citizens also take steps to sanction poor performers or whether higher levels of government sanction as a result of the citizen monitoring. In another example, many initiatives provide information about actors’ duties or the outputs that they produce, but few provide information about government actors’ levels of effort or their rights and duties. As a result, we have a limited understanding of which levers on the chain from information to accountability are most effective at improving governance outcomes.

3. Lipovsek, Varja, & Tsai, Lily L. “How to learn from evidence: A solutions in context approach.” (2018). Washington, DC: Transparency and Accountability Initiative.

ROADMAP FOR THE REPORT

The rest of the report is organized as follows. Section 2 introduces our conceptual framework, which draws on theories of government accountability to articulate a causal chain between information and government accountability. Section 3 explains the design and implementation of our systematic search for empirical literature between 2007 and 2016, and the resulting “evidence base” we obtained.

The evidence review on within-government accountability is presented in Section 4. We first discuss the overall quantity of evidence and its distribution across different contexts and sectors. Given the dearth of evidence in this area, we are unable to make any firm conclusions. Instead, we provide a descriptive summary of some of the main themes running through the 12 studies in this review.

The evidence review on citizen (or social) accountability is presented in Section 5. Again, we first discuss the quantity and distribution of the evidence. While still limited, there is more evidence in this area.

We conclude in Section 6 by discussing the implications of the findings and directions for moving beyond existing principal-agent models for understanding the relationship between transparency and accountability.

2. A Unified Theoretical Framework for Information and Accountability

How can access to information affect government accountability?⁴ To answer this question, we first need to know the actors involved. Who is getting the information? Whom would they be holding accountable through increased monitoring and sanctioning?

The next question concerns causal pathways. Why might information increase an accountability actor’s monitoring and sanctioning? Although the path from information to government performance always begins with greater monitoring and sanctioning action by accountability actors, there are many ways information may achieve this effect.

In this section, we develop a unified theoretical framework for understanding the impact of information provision on government accountability. For each set of actors in an accountability relationship, we identify three broad mechanisms through which greater access to information might increase monitoring and sanctioning. We then use this framework to categorize different transparency and informational interventions according to these three mechanisms and discuss how each type of intervention boosts the workings of the mechanism. We also use our framework to create an interactive visual tool that organizes and allows readers to search the existing evidence base.⁵

4. In this report, we define “government accountability” as the extent to which those in government — including politicians, public officials, street-level bureaucrats, and frontline service providers — act in the public interest.

5. Tsai, Lily, & Lipovsek, Varja. “Information and Non-Electoral Accountability: Evidence in Context.” (2018). Cambridge, MA: MIT GOV/LAB. <https://mitgovlab.org/results/information-and-non-electoral-accountability-evidence-in-context/>

ACCOUNTABILITY ACTORS: WHO IS GETTING THE INFORMATION, AND WHOM ARE THEY HOLDING ACCOUNTABLE?

One useful starting point for identifying the key actors involved are the accountability relationships described by the “long” and “short” routes to government accountability (proposed by the 2004 *World Development Report* and refined in a more recent 2017 publication (World Bank 2017)).

To summarize, there are four different accountability relationships: (1) citizens holding politicians accountable, (2) politicians holding unelected bureaucrats accountable, (3) bureaucrats holding frontline service providers accountable, and (4) citizens directly holding frontline service providers and potentially unelected bureaucrats accountable.

In the long route to accountability, there are three accountability relationships between (1) citizens and the politicians they elect to design and implement policies on their behalf, (2) politicians and the public officials they appoint to manage government agencies, and (3) public officials and the frontline service providers they employ to manage the day-to-day tasks of policy implementation. These accountability relationships are often referred to as “principal-agent” relationships, in which principals are the accountability actors who hold agents accountable for completing their duties. In the long route to accountability, citizens are conceptualized as principals holding politicians, or their agents, accountable. Politicians are then principals who are supposed to hold unelected bureaucrats, or their agents, accountable. Finally, bureaucrats are, then, principals who are supposed to hold frontline service providers, or their agents, accountable.

Together, these three accountability relationships constitute what is often referred to as the long route to government accountability, so named because citizens’ demands must pass from politicians to public officials and then to frontline service providers before they can impact performance.⁶ Within this framework, a key reason for poor government performance is the difficulty that principals face in monitoring the behavior of agents to verify that they are fulfilling their responsibilities and obligations. It is difficult for citizens to know exactly what politicians are doing, and it can be quite difficult for politicians to know what bureaucrats are doing.

When monitoring is very difficult, politicians, bureaucrats, and frontline service providers can engage in shirking, embezzlement, and other forms of malfeasance with impunity. The result is a breakdown of the long route to accountability, with citizens unable to vote out low-performing politicians, politicians unable to dismiss low-performing public officials, and public officials unable to fire low-performing service providers.

In the short route to accountability, by contrast, citizens engage and directly hold frontline service providers and grassroots officials accountable to demand improvements in the quality of service provision. Sometimes these efforts complement formal channels of within-government accountability, as when citizens report instances of corruption by street-level bureaucrats to higher-level officials.⁷ In other instances, citizens’ efforts to monitor and sanction frontline providers may operate through informal channels, bypassing government altogether. Tsai (2007), for example, shows how citizens in rural China are able to use unofficial rules and social norms to force

6. In this framework, “public officials” can also be used to refer to the role of institutions and actors of horizontal accountability, such as judges, prosecutors, auditors, and anti-corruption bodies.

7. The so-called “fire-alarm” model of accountability — where citizens, civil society organizations, or journalists report failures of accountability directly to senior government officials, even though they have no legal and material basis to directly sanction providers themselves — is one such example.

local officials to fulfill their public obligations, even when formal institutions of accountability are weak.

The short route to accountability is predicated on the assumption that because citizens are the beneficiaries of government services, they have strong incentives to monitor frontline service providers to ensure they perform.

However, it can still be difficult and costly for citizens to monitor local providers. High monitoring costs are especially likely to inhibit citizen action when the benefits to monitoring (in terms of improved service delivery) are uncertain, remote, or likely to accrue over a long time (e.g., investments in education).

Another obstacle to the short route is that it requires considerable knowledge and skill on behalf of citizens and civil society groups. To effectively monitor and sanction service providers, citizens must know what those providers are responsible for and what they are capable of, as well as how to alert higher-level officials through formal channels when failures of accountability are observed. While some criteria may seem obvious — teachers should show up to teach, for example, and police officers should not solicit bribes — many are not. Parents might wonder, for example, whether responsibility for the lack of student learning falls on teachers for failing to perform or whether responsibility might actually fall on higher-level officials for failing to provide adequate textbooks and other learning materials to schools.

In this model of government accountability, access to information promotes government accountability because it enables accountability actors — whether citizens, civil society organizations, or officials within government — to monitor, sanction, and/or reward government service providers.⁸ The hope is that these changes will, in turn, force government actors to behave more accountably by exerting a greater effort to serve the public or by refraining from corruption. As actors within government become more accountable, government performance should improve, both in terms of the outputs (e.g., vaccination rates, student graduation rates) and development outcomes (e.g. incidence of disease, literacy rates). This chain of events is depicted in Figure 1.

CAUSAL MECHANISMS: HOW IS INFORMATION HELPING ACCOUNTABILITY ACTORS TO MONITOR AND SANCTION?

Although the path from information to government performance always begins with greater monitoring and sanctioning action by accountability actors, there are many ways information may achieve this effect. For each of the four accountability relationships described above, we need to understand how transparency and information provision can lead to more monitoring and sanctioning. To do this, we propose a theoretical framework that specifies three broad mechanisms by which greater access to information might increase monitoring and sanctioning. For each mechanism, we then identify the types of informational interventions that aim to improve the workings of that mechanism, and we use these categories to organize the evidence base.

8. We use the expression “service providers” to refer not just to last-mile providers — such as teachers and doctors — but also to the public officials and street-level bureaucrats who supervise them.

Figure 1: Causal mechanisms connecting information to government accountability

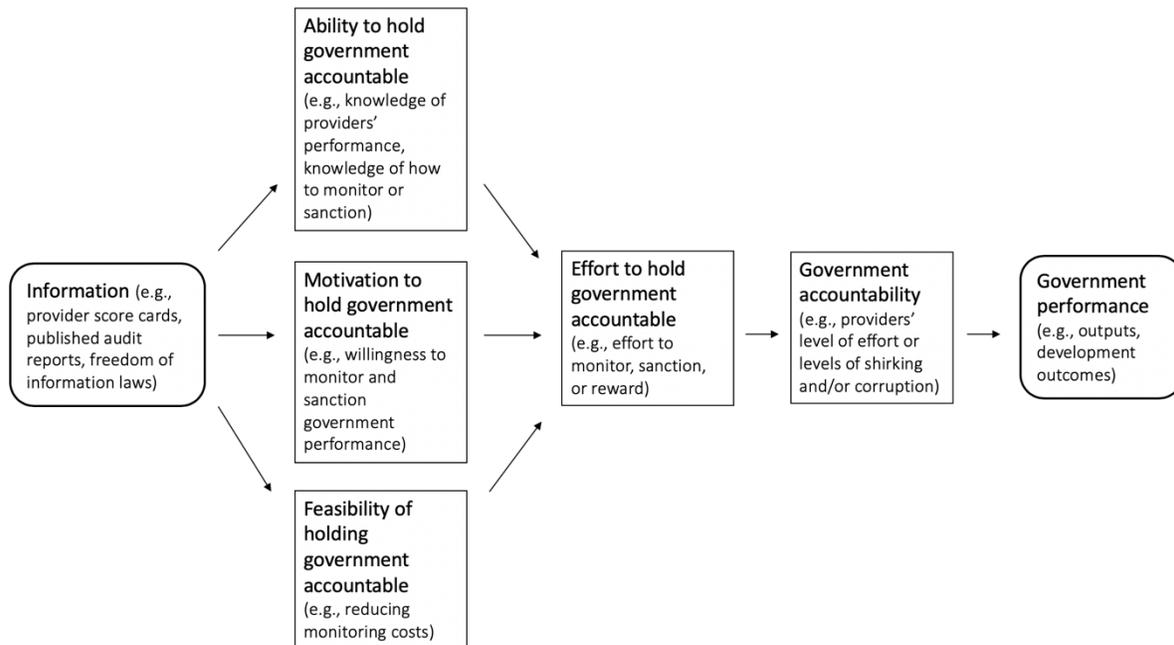


Figure 1: Information can have a causal impact on enhancing government accountability and performance by 1) enhancing the ability and knowledge of how to monitor and sanction, 2) enhancing the motivation to monitor and sanction, or 3) enhancing the feasibility of monitoring and sanctioning by reducing costs. The bolded round boxes denote the inputs and outputs in the system while the square boxes are intermediary steps.

Mechanism 1: Enhancing ability and knowledge of how to monitor and sanction

The first pathway through which greater information can improve government accountability is by providing accountability actors — whether citizens or officials within government — with the requisite *knowledge* they need to monitor and sanction service providers or other officials effectively. For effective monitoring, a key precondition is that accountability actors are knowledgeable about providers’ duties and responsibilities and can therefore accurately identify when providers fail to fulfill these duties. While standard principal-agent models take for granted that principals (i.e., citizens, politicians, and public officials) know what their agents are responsible for, in practice, this is not always the case.

One type of intervention that policymakers have designed to address this knowledge gap provides *information about providers’ duties and responsibilities*, in the hope that doing so will equip accountability actors with the

requisite knowledge to accurately detect substandard performance when monitoring.⁹ Such was the idea behind the intervention evaluated in Björkman and Svensson (2009), for instance, which used community meetings to inform citizens about local health workers' duties and obligations in rural Uganda. Though this tactic typically focuses on citizens, policymakers have also used this approach to activate within-government, top-down monitoring by informing politicians of the duties and responsibilities of bureaucrats within their districts (Raffler 2016).

A second type of intervention that policymakers have designed provides accountability actors with **information about their avenues for redress and sanction**. Accountability actors who are knowledgeable about service providers' duties and responsibilities may have the ability to identify failures of accountability, but they cannot act on this information unless they also know how to sanction providers. There are a variety of means by which accountability actors may take action — from informal mechanisms (such as social pressure) to more formal channels (such as alerting higher-level officials) — but many of these actions are not widely known. Examples of informational interventions that fall into this category include awareness campaigns for anti-corruption reporting hotlines, invitations to Parent Teacher Association meetings, community meetings, or other forums where residents can pressure providers (Olken 2007; Pandey et al. 2009); and trainings for senior-level officials on the steps they can take to sanction local governments for failures of service delivery (Raffler 2016).

Mechanism 2: Enhancing motivation to monitor and sanction

Even if accountability actors are knowledgeable about service providers' responsibilities and know how to sanction them for bad behavior, they may not necessarily feel like making the effort. Taking time or resources to monitor and sanction might be very difficult for them, and they might wonder why they should do so when other individuals may or may not be making an effort.

Thus, a second pathway through which information can be used to jumpstart accountability is by providing citizens, public officials, and politicians with non-material motivations for monitoring and sanctioning government actors who are performing poorly.

Interventions that seek to influence accountability through this pathway provide these actors with *information on their own duties and obligations for holding officials accountable*, in hopes of persuading information recipients that they — and others like them — have a responsibility to monitor and sanction poor government performance. Examples of this approach include providing information to politicians about their oversight responsibilities (Raffler 2016) and providing citizens with information about their civic duty to monitor and sanction (Pandey et al. 2009).

Mechanism 3: Enhancing feasibility of accountability action by reducing monitoring costs

The third pathway through which information can be used to improve accountability is by reducing the costs associated with monitoring and sanctioning. Interventions operating through this pathway may, for example, seek to make it easier to access information about *providers' levels of effort*, so accountability actors don't have

9. Note that this type of information may also influence accountability actors' incentives to monitor and sanction, when the fulfillment of those duties confers direct benefits to accountability actors. For example, providing citizens with information about local officials' duty to provide particular services or entitlements will also increase the incentives to monitor and sanction among those who are eligible for that subsidy (Banerjee et al. 2016).

to spend as much time and effort on monitoring. Perhaps the most common example of this approach is the use of audits and the dissemination of their results to public officials. Within the field of development, audits have been used to reduce health worker absenteeism (Banerjee et al. 2008), improve teacher attendance (Duflo et al. 2012), and limit capture by local governments when implementing infrastructure projects (Olken 2007). Though typically associated with top-down monitoring, audits have also been disseminated to citizens to encourage bottom-up sanctioning (Molina 2014).

Another approach to reducing monitoring costs involves providing information on the *outputs and development outcomes produced by service providers*. Often used when provider effort is difficult to observe directly, this strategy allows accountability actors to benchmark the services they receive against their knowledge of the resources providers have at their disposal to make an inference about their level of effort. So, for example, providing parents with the reading comprehension score of their children should make it easier for them to discern whether teachers are doing their job, and by extension, whether there are steps they need to take to hold them accountable. Of course, the viability of this approach hinges on the assumption that parents can readily attribute lack of learning to lack of teacher effort (e.g. absenteeism, unpreparedness). If on the other hand, parents know that teachers' *de jure* obligation to ensure students are learning is at odds with their *de facto* capacities — because, for example, schools are ill equipped — this approach is unlikely to be effective (Lieberman et al. 2014).

More generally, whenever service providers' *de jure* responsibilities vary from their *de facto* capacities, information about the outputs they produce is unlikely to be sufficient for accountability actors to make an inference about their performance. Thus, a third approach to using information to reduce the costs of monitoring is to provide information about the *inputs available to service providers*. By making it easier to infer whether failures of service provision are attributable to lack of effort (i.e., shirking or corruption) or the lack of *resources*, these interventions reduce the costs that accountability actors face when trying to infer service providers' true performance. To cite a prominent example of this approach, officials in the Ministry of Education in Uganda used a media campaign that publicized information about an education grants program, enabling schools and parents to reduce capture by district-level governments through bottom-up monitoring (Reinikka & Svensson 2011).

ORGANIZING THE EVIDENCE: A TOOL FOR HOW TO LEARN FROM THE EVIDENCE BASE

Using our theoretical framework, existing studies can be organized by the types of informational interventions evaluated and outcomes measured. For each accountability relationship and its corresponding set of actors (principals holding agents accountable), the evidence base can be organized as Table 1 illustrates.

Table 1 lists the main accountability outcomes of interest and the main types of information that may be used to improve accountability.

The main types of informational interventions (listed vertically down the left-hand side) are categorized by the three causal mechanisms we discuss in our theoretical framework: increasing the knowledge that people have about how to monitor and/or sanction officials, increasing their motivation to act, and lowering the costs of monitoring.

Interventions that aim to work through the first mechanism of increasing knowledge about how to take action either provide recipients with information about avenues for taking action or information about the duties and obligations of the government official. Interventions that aim to work through the second mechanism and

increase the motivation for taking action tend to provide recipients with information about their own duties and obligations to take action. Interventions aiming to work through the third mechanism by lowering monitoring costs do so by providing information about the resources that service providers have, how much effort service providers are exerting, and/or the level of services and development outcomes they are producing.

The main outcomes of interest also follow the causal process posited by our theoretical framework in Figure 1. We hope that informational interventions may have an impact on the *ability* of recipients to hold government officials accountable, on their actual *efforts or actions* to hold officials accountable, on the *actions or accountability* of the officials themselves, and on their *performance*, in terms of the levels of services, outputs, and outcomes they produce.

Table 1: Organizational layout of a database on the impact of information on government accountability

Information Treatments	Accountability actors' <i>ability</i> to hold government to account		Accountability actors' <i>effort</i> to hold government to account		Accountability of government service providers		Performance of government service providers	
	Knowledge of how to monitor agents	Knowledge of how to sanction agents	Monitoring of agents	Sanctioning of agents	Providers' level of effort	Providers' level of corruption	Outputs	Development outcomes
Path to accountability: greater knowledge of how to monitor and sanction								
Accountability actors' avenues of redress								
Service providers' duties and obligations								
Path to accountability: greater motivation to monitor and sanction								
Accountability actors' duties and obligations								
Path to accountability: lower monitoring costs								
Inputs available to service providers								
Service providers' level of effort								
Outputs and outcomes produced by providers								

Based on our theoretical framework for organizing the evidence, we designed an interactive database to visually represent the evidence on informational interventions and government accountability (currently containing two of the four accountability relationships that were within the scope of this project; the pilot tool is available online).¹⁰ This format is inspired by the International Initiative for Impact Evaluation’s evidence mapping methodology, which was designed to help practitioners easily identify priority gaps in the evidence base.

This approach allows us to map what kinds of information affect what component of accountability, and along which path, providing a richer and more systematic approach to the links between information and accountability. It thus helps identify gaps in the evidence and identify priority areas to inform donor strategies, strengthen portfolio and program design, and direct future research.

We also believe this interactive visualization of the evidence base can be a useful tool for better targeting the use of existing evidence to focus and design more effective research and development interventions to foster government accountability. The online version of this interactive database allows the user to observe how the tool changes as we filter studies by different features, such as the information’s delivery mode, the policy area or the country studied, or the methodology of the study. In keeping with the focus of this review, the current online tool contains only studies of non-electoral accountability, but both our theoretical framework and the interactive visualization tool are designed to organize all studies of transparency and accountability, including electoral accountability.

3. Systematic Literature Searches: Scope and Methods

In the rest of this report, we discuss the results of evidence reviews that we conducted for *within-government accountability* (including politicians holding bureaucrats or service providers accountable, and bureaucrats holding service providers accountable) and for *citizen, or social, accountability* (e.g., citizens directly holding service providers and unelected officials accountable). (See Preface for why these particular pathways were selected.)

So how did we figure out what evidence was out there? In this section, we describe the process we used to conduct a systematic literature search to identify recent studies that assess the impact of informational interventions on government accountability. We used this process to conduct evidence reviews on within-government accountability and on citizen-government accountability.

For each of these evidence reviews, we conducted the following systematic and replicable search process. For each review, we restricted our search to papers or working papers published in the past 10 years (2007–2016) in economics, political science, or public administration journals. We also restricted our search to papers focused on developing countries (as defined by the World Bank’s low- and middle-income categories).

10. Tsai, Lily, & Lipovsek, Varja. “Information and non-electoral accountability: Evidence in context.” (2018). Cambridge, MA: MIT GOV/LAB. <https://mitgovlab.org/results/information-and-non-electoral-accountability-evidence-in-context/>.

We then adopted a brute force approach, to be confident that we would capture all relevant papers. We focused on papers indexed in Web of Science, a widely recognized repository of academic publications, and supplemented this search with searches of the Social Science Research Network (SSRN) and Google Scholar. The rationale behind our search strategy was that all papers relevant to our review should include in the title, abstract, and/or keywords (1) at least one word or set of words indicating a *government actor* or *citizen actor*, as appropriate; (2) at least one word or set of words related to *accountability*, and (3) at least one word or set of words related to *information*. For each of these three semantic fields, we designed an exhaustive list of possible words or set of words (see Appendices 1A and 1B). These criteria allowed us to design an extensive set of Boolean terms to run in the Web of Science search engine.

SCOPE OF THE WITHIN-GOVERNMENT ACCOUNTABILITY REVIEW

For the within-government review, these search terms flagged 5,691 articles as potentially relevant to this study. Our research assistant went through the titles and abstracts of these 5,691 articles and selected those that seemed to belong in our literature review. The number of articles fell to 79. A closer reading of the main text of the articles showed that only 51 of those were actually relevant. We also used Google Scholar and SSRN to identify potentially relevant papers among those citing the 79 papers, finding an additional 36 papers that seemed relevant to our literature review. We were thus left with a set of 87 papers. Of those 84 papers, 20 focused on developing countries and 67 on developed countries.¹¹ After careful reading, only 12 of the 20 focused on developing countries were found to be relevant to our research question.

The final set of 12 papers is methodologically varied. Six of them are experimental, three are quasi-experimental, and three are quantitative observational. Each paper conducted an analysis of a single intervention, so in the discussion below, we refer to *a total of 12 studies on within-government accountability*.

SCOPE OF THE CITIZEN-GOVERNMENT ACCOUNTABILITY REVIEW

For the citizen-government accountability review, our search query returned 1,290 papers after sub-setting to articles focused on developing countries and published in the past 10 years in political science, economics, or public administration journals. Because our search terms were selected to cast as broad a net as possible, most of these papers were not relevant to this review, either because they were topically unrelated to accountability or because they did not focus on the impact of information on accountability outcomes specifically. In the end, only 19 of the 1,290 papers were found to be relevant to this review. We then used Google Scholar to identify potentially relevant papers from among those citing the papers we identified, through our Web of Science search, yielding an additional four papers.

The resulting sample of papers for this review includes 23 papers — 14 randomized controlled trials (RCTs) and nine quasi-experimental papers. Because, however, seven of the RCTs evaluated multiple distinct informational interventions (e.g., information provided through meetings versus score cards), we count each evaluated intervention as a distinct study, for a total of 30 studies. In our review below, we thus refer to a total of *30 studies on citizen-government accountability*.

11. The breakdown by methodology of the 84 papers is as follows: 11 are experimental, 5 are quasi-experimental, 40 are quantitative observational, and 28 are qualitative.

4. Evidence Review: Within-Government Accountability: How Much Evidence Is Out There? What Does It Say?

HOW MUCH EVIDENCE IS THERE, AND WHERE DOES IT CONCENTRATE?

Overall, the evidence base on within-government accountability is very thin. Despite using very broad search terms and imposing no requirements in terms of research design, we were able to identify only 12 studies.¹² One of the studies, in fact, noted that “this is to our knowledge the first experimental test of whether providing data to policy actors changes their behavior” (Callen et al. 2016). While there may be other studies of which these authors were not aware, and/or studies using non-experimental evidence, the quote is illustrative of the state of the literature in this field.

As we can see from Table 2 (and our interactive database, available online at <https://mitgovlab.org/results/information-and-non-electoral-accountability-evidence-in-context/>), many types of informational interventions and their impacts on specific causal mechanisms and outcomes remain unexamined.

Table 2: Evidence on within-government accountability by outcomes measured and type of information provided

	% of total	# of studies (out of 12)*
Type of information provided		
Accountability actors':		
Avenues of redress	0%	0 (out of 12)
Duties and obligations	17%	2
Entitlements	0%	0
Service providers':		
Duties and obligations	0%	0 (out of 12)
Inputs	25%	3
Effort / corruption	42%	5
Outputs	8%	1
Development outcomes	0%	0

12. Some studies were excluded from the literature review because researchers randomized a bundled treatment that included information and incentives, which does not allow us to reach any conclusion about the effect of information per se. Moreover, when we look within the studies, the authors usually attributed the effects they found to incentives, not information, even though information is arguably a necessary condition for incentives to work (take, for example, an intervention that randomizes the tracking of bureaucrats’ absenteeism and provides incentives to decrease it.) A notable exception was Cilliers et al. (2016), which randomizes one treatment with information only and one with information and incentives. In their setting, information on its own does not decrease absenteeism or outcomes but it does make higher-tier bureaucrats more likely to accurately report absenteeism of lower-tier bureaucrats.

Outcomes studied

Knowledge of how to monitor	8%	1 (out of 12)
Knowledge of how to sanction	0%	0
Monitoring effort	25%	3
Sanctioning effort	8%	1
Provider effort	42%	5
Provider corruption	8%	1
Outputs	42%	5
Outcomes	42%	5
Attitudes toward government	8%	1

Sector

Education	25%	3 (out of 12)
Healthcare	25%	3
Other	50%	6

Mode of delivery

Trainings	17%	2 (out of 12)
Media campaign	8%	1
Other	75%	9

Region

Africa	25%	3 (out of 12)
Asia	58%	7
Latin America	8%	1

*The categories do not necessarily add up to 12 within each section because they are not mutually exclusive or, as in the case of Region, a study may report on more than one region.

The evidence base is very “lumpy” and concentrated in certain areas, with large gaps in other areas.

Gap in evidence on horizontal accountability institutions. Despite the prominent role that horizontal accountability actors such as judges, prosecutors, and anti-corruption agencies play in countries as diverse as Brazil, China, and Rwanda, evidence on the use of information by these actors is scarce. Almost all of the papers we found examined how politicians hold other (lower-tier) politicians accountable, how politicians hold bureaucrats accountable, or how higher-tier bureaucrats hold other (lower-tier) bureaucrats accountable. We found only one paper (Banerjee et al. 2016) directly exploring the use of information by horizontal accountability actors.

Focus on information about level of service provision and corruption. What type of information is most commonly delivered? Much of the evidence was on information that lowers the costs of monitoring. Most common were interventions that simply provided information on performance — on inputs or on providers’

level of effort and/or corruption.¹³

Evidence was scarce, however, on information intended to increase the motivation or the ability of recipients to take action. Increasing the motivation of recipients to take action by providing actors (e.g., politicians and mid-level bureaucrats) with information on their *responsibilities* to monitor lower-level bureaucrats was executed in just two recent studies. Evidence was also scarce on how information provision may affect actors through increasing their *knowledge of how to monitor and sanction* other government officials. None of the studies we found examine the effect of providing information on accountability actors' avenues of redress or entitlements, on service providers' duties and obligations, or on development outcomes.

These gaps were in clear contrast to what we found for citizen-government accountability, an area in which a fair number of interventions provided information about citizens' avenues of redress and entitlements. Existing research suggests that practitioners and researchers working on citizen accountability are perhaps more aware of the need for citizens to be aware of their rights and of ways to be heard than exist similar needs for politicians and bureaucrats who seek to hold other government actors accountable.

Focus on provider effort, level of service provision, and development outcomes. The three outcomes that were most commonly studied were provider effort (e.g., attendance at work), outputs or level of service provision, and development outcomes. These three outcomes were each measured in five of the 12 studies we found (Table 2).

“Black box” and lack of information about causal mechanisms. These outcomes obviously constitute some of the areas we care most about, but the relative focus on these outcomes means that we have little understanding of how information interventions lead to better service provision and development. The process by which government actors hold other government officials accountable remains a black box. Most of the studies gave little consideration to assessing the impact on intermediate outcomes, or the different mechanisms through which information can improve outputs and outcomes, such as increasing knowledge of how to monitor and sanction, or their efforts at doing so. Only one-quarter of studies on within-government accountability examined the effect of information on the actual monitoring efforts of recipients (while almost half of the studies on citizen-government accountability did so.)

Evidence across sectors. Regarding sector, a quarter of the studies focus on education, a quarter on healthcare, and half on other sectors, such as infrastructure, employment, and environmental policy.

Focus on countries with significant bureaucratic capacity. With the exception of one study, which draws on panel data for 148 countries around the world, these studies examine interventions in only six countries — Brazil, China, India, Pakistan, Tanzania, and Uganda. As we discuss below, it may not be completely a function of chance that all of these countries have long-standing, institutionalized bureaucracies, with at least pockets that have relatively high-functioning, professionalized civil servants working in areas where higher levels have formal channels for punishing other government actors for misbehavior and poor performance.¹⁴

13. Most studies (10 out of 12) examined interventions that provided only one type of information. Two studies looked at interventions that provided two types of information, one of them focusing on providers' inputs and effort/corruption, and the other one on providers' outputs and outcomes.

14. Another way to explore the conditions under which certain evidence may be relevant to other contexts is to use the interactive evidence tool we have designed to employ the solutions-in-context approach we recommend for learning from the evidence base. For an explanation of why we should use this approach to learn from evidence, see “How to Learn from Evidence: A Solutions in Context Approach”, available online: <https://mitgovlab.org/results/effect-of-international-standards-on-accountability-behaviors/>.

WHAT DOES THIS EVIDENCE SAY?

In this section, we summarize the findings from the small number of studies on the effects of information on within-government accountability. Since not all of the studies are experimental or quasi-experimental, or provide enough detail for a meta-analysis, we can only provide a descriptive and qualitative summary, which should be read with caution. Due to the small number of studies, readers should not draw firm conclusions based on the descriptive statistics below. Second, as we note above, we have no guarantee that the evidence published (either in journals or research papers) is representative of all the studies that have, in fact, been done (since many may remain unpublished). Thus, to complement the descriptive statistics, in a subsection, we discuss the details of the studies reviewed, highlighting key commonalities and differences among them.

Descriptive statistics

Table 3 summarizes the evidence by showing the number of studies that report a positive effect on each of the nine outcomes that we consider along the causal chain of information and government accountability described in Section 2.

Table 3: Summary of impacts on key outcomes (within-government accountability)

Proportion of studies reporting a positive effect on within-government actors':

Knowledge of how to monitor	1/1
Knowledge of how to sanction	1/1
Effort to monitor service providers	1/1
Effort to sanction service providers	1/1
Attitudes toward government	1/1

Proportion of studies reporting a positive effect on service providers':

Level of effort	3/5
Level of corruption	0/1
Outputs produced	3/5

Proportion of studies reporting a positive effect on:

Development outcomes	4/5
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68%

Proportion of all measured outcomes with positive impact

(of all outcomes measured across all 12 studies)

Note: Figures are reported for number of studies reporting a positive effect, out of the total number of studies found that analyze the effect of information on a given outcome.

First, we see that all the studies that examine the effect of information on whether accountability actors know how to monitor, and their efforts to monitor and sanction, find a positive effect. Findings are more mixed for the effects of information on providers' actions, though most are positive. While the number of these studies is too small to draw any definitive conclusions, these positive findings are encouraging. Note also that different papers examine outcomes at different points in the information-to-accountability chain. Our ideal for the evidence base as a whole is to have evidence on how information impacts accountability actors' knowledge and ability to hold governments to account, accountability of providers, and government performance. In principle, we should see clearer effects on the earlier links of the chain, which should be more sensitive to the effects of information. This is, in fact, what we see in the papers on within-government accountability.

Regardless of whether interventions were in education, healthcare, or other sectors, about two-thirds of studies reported positive effects (Table 4). The type of information in the intervention also did not matter dramatically. In terms of mode of delivery, media campaigns and trainings seemed particularly effective.

Table 4: Summary of effectiveness of within-government interventions

	# of positive outcomes (as a proportion of all outcomes)	# of studies (out of 12)*
<i>Sector</i>		
Education	7/10 (70%)	3 (out of 12)
Healthcare	4/6 (67%)	3
Other	4/6 (67%)	6
<i>Type of information provided</i>		
<i>Accountability actors':</i>		
Avenues of redress	0/0	0 (out of 12)
Duties and obligations	5/6 (83%)	2
Entitlements	0/0	0
<i>Service providers':</i>		
Duties and obligations	0/0	0 (out of 12)
Inputs	3/4 (75%)	3
Effort/corruption	8/13 (62%)	5
Outputs	10/14 (71%)	5
Development outcomes	10/14 (71%)	5
Attitudes	2/3 (67%)	1
<i>Delivery mode</i>		
Trainings	5/6 (83%)	2 (out of 12)
Media campaign	3/3 (100%)	3

Other	7/13 (54%)	9
<i>Region</i>		
Africa	6/10 (60%)	3 (out of 12)
Latin America	3/3 (100%)	1
Asia	4/7 (57%)	4

*The categories do not necessarily add up to 12 within each section because they are not mutually exclusive or, as in the case of Region, a study may report on more than one region

Additional insights

In this section, we discuss a number of insights gleaned from our review of studies on within-government accountability. Specifically, providing information to government accountability actors about the performance of other government officials can lead to the sanctioning of poor performance when government accountability actors have existing institutions within which to act or are empowered by new interventions to use the information. Interventions that empower government accountability actors to use performance information also increase the probability they will take action to supervise other government actors. When, however, government accountability actors are embedded in a clientelistic political system that does not insulate them from politicians who use public sector jobs or resources to mobilize political support, and/or their supporters who expect this patronage, transparency and information provision may have limited or only short-term effects on performance and accountability.

Sanctioning and contracting on performance outputs can work. A cluster of studies examine sanctioning and performance contracting in China and show that information about performance at lower levels of government increases the sanctioning of poor performance by those at higher levels. For example, Zheng et al. (2014) find that the probability of leaders of Chinese cities being promoted depends on the city's environmental performance, as the central government decided to consider not just economic performance but also sustainability and social stability when making promotion decisions. Similarly, Caldeira (2012) finds evidence consistent with "yardstick competition" among Chinese provincial governments vis-à-vis their economic performance. Using a more rigorous method, Chen et al. (2015) leverage a difference-in-differences design to examine the impact of a new policy that established more demanding regulations on SO₂ emissions for some cities in China, together with a performance-based evaluation system. They find that emissions fell more strongly in the treatment cities and deduce that the new policy "changed local bureaucrats' behavior." These three papers with evidence from China suggest that, at least in that context, those in higher levels of government use data to discipline those at lower levels and foster performance.

Empowering government accountability actors through training and legal mandates can also help. Raffler (2016) studies a program in Uganda that empowers local politicians to better oversee the bureaucracy by giving them fine-grained financial information and trainings about their mandates and rights to oversee bureaucrats. The author finds that the intervention increased politicians' knowledge of local government finances and procedures, and their effort at overseeing bureaucrats, as measured by demands and access to financial documents. An upcoming paper by the same author will analyze the effects of the program on

bureaucratic outcomes. It is important to note, however, that the author finds an effect only in districts where politicians are not aligned with the central government. As shown by Callen et al. (2016), electoral incentives seem to mediate the effect of information on within-government accountability.

Albuquerque Tavares (2015) presents a very different quasi-experimental study in Brazil that reinforces the idea that training government accountability actors so that they are better able to use the information may be critical for them in keeping their agents accountable. The author studies a policy that assigned low-performance schools in São Paulo to a results-based management training program for their directors. This program included “administrative training for school managers, the development of diagnostics, monitoring and targets for learning-related indicators {...} and the development of specific action plans to solve problems and achieve short-term goals.” The author finds that schools that were assigned to the program had lower teacher absenteeism, lower teaching vacancies, better results-based management practices, and better test scores in math among low-performance students.

Within-government accountability can be vulnerable to clientelism and electoral incentives.

Another cluster of studies in South Asia suggest that provision of information about bureaucrat absenteeism can sometimes have an effect, but this effect depends on the electoral incentives of politicians overseeing bureaucrats and the degree of clientelism in the political system. Callen et al. (2016), for example, find that an intervention flagging senior health officials about doctor absenteeism in a medical facility increased subsequent doctor attendance by 27 percentage points. Results, they show, are driven by facilities in districts with high levels of electoral competition. This evidence suggests that politicians’ electoral incentives partially determine whether they pressure bureaucrats to hold frontline service providers accountable.

In a similar vein, Dhaliwal and Hanna (2014) examine the effects of a program in India that randomly installed machines to control staff attendance in health clinics. The intervention recorded data on staff presence and reported it to supervisors. In this system, leave days would be deducted on the days that staff were absent. The authors find that healthcare professionals’ attendance increased by almost 15% and that health outcomes improved. They note, however, that demand among government officials (including elected and unelected officials) to use the attendance data was low, since they feared conflicts with staff. In fact, they find some evidence to back these fears — in treatment facilities, there was greater dissatisfaction among workers, and it was harder to fill vacancies. The authors conclude by pointing to an “implicit deal” among governments and bureaucrats on nonmonetary dimensions to retain staff.

Finally, Banerjee et al. (2008) conduct a randomized trial of a program in Rajasthan, India, where attendance of nurses was recorded by a nongovernmental organization and passed to the government, with a schedule for adjusting the nurses’ wages. The authors find that during the first six months of the program, the incentive scheme worked and attendance rates raised. However, after six months, “the local health administration deliberately undermined the incentive system,” which reversed the improvements in attendance. The authors present evidence that, over time, the types of absence that were “justified” increased and conclude that senior health officials were either colluding with nurses to allow absenteeism or just failing to impose penalties. Overall, these three studies suggest that it is misleading to assume that government accountability actors will use better-quality information to foster the accountability of other government actors. They also point to the importance of understanding the political and clientelistic arrangements among politicians, bureaucrats, and service providers that underlie social programs, and the importance of designing interventions that consider these arrangements.

One way to understand the findings of the South Asia studies is to acknowledge that information on its own, without accompanying incentives, is unlikely to lead to long-lasting change. This is, to some extent, what Cilliers et al. (2016) find in their study in rural Ugandan schools. They randomly assigned schools to a monitoring

scheme in which school directors were required to report teacher attendance (information that was then communicated to the community through SMS). In a random subset of schools, the monitoring intervention was accompanied by bonus payments for teachers with adequate attendance. This design allowed the authors to distinguish the effects of information alone from the effects of information plus incentives. What they find is that information, on its own, does not have a significant effect on teacher absenteeism or on student enrollments, though it does reduce the underreporting of teacher absences by school directors. Information accompanied by incentives, however, has a significant effect on all of these outcomes.

Finally, it is worth mentioning a couple of recent studies that address the *uses of information by government actors*, rather than its effects. Because they do not examine the effects of information on government accountability, they are not included in our review, but they provide useful insights that may help guide further research and practice. Gaspar and Mkasiwa (2014) conduct a case study of four local government authorities in Tanzania and examine the use made of performance information by different stakeholders within the government, including councilors, central government officials, and members of parliament. Overall, they find that multiple actors within government have a stake in information and that these actors hold different views on what constitutes good performance. More specifically, they find that some information was collected and used for boosting legitimacy, some for rational and increasing the efficiency of decision making, and some for the intrinsic value of the information per se. They also point to the non-collection of information as a politically relevant outcome. Ultimately, the authors argue, it is the power and interests of different stakeholders that shape the collection and use of performance information, as well as the objectives of that collection and use.

A similar conclusion on the uses of performance information is reached by Gao (2009), who studies the dozens of performance contracts a Chinese county signed with subordinate organizations. The focus of this paper is on the over 1,000 indicators that were used in such agreements, covering areas such as service provision, economic development, social development, and Chinese Communist Party (CCP) development. On one hand, the author argues that these indicators allow the county government to enhance the alignment of the policy goals of local officials, as well as their responsiveness. On the other hand, the author argues that many indicators are, in fact, unmeasurable and thus subject to manipulation regarding accountability decisions. The author argues that performance management in China is not necessarily used to boost performance but is used for other ends, such as improving governance, balancing economic growth and social stability, and boosting the legitimacy of the CCP.

5. Evidence Review: Citizen Accountability

HOW MUCH EVIDENCE IS THERE, AND WHERE DOES IT CONCENTRATE?

Overall, the evidence base on non-electoral citizen accountability remains limited, despite high interest.

Despite considerable interest in informational interventions among policymakers, the evidence base remains quite limited, with only 30 studies in total.

As we can see from Table 5, the evidence base for non-electoral citizen accountability is similar to the evidence base in within-government accountability, in that it is “lumpy” and concentrated in certain areas.

Table 5: Evidence on citizen-led accountability by outcomes measured and type of information provided

	% of total	# of studies (out of 30)*
Type of information provided		
<i>Citizens':</i>		
Avenues of redress	23%	7 (out of 30)
Duties and obligations	17%	5
Entitlements	20%	6
<i>Service providers':</i>		
Duties and obligations	47%	14
Inputs	30%	9
Effort/corruption	10%	3
Outputs	43%	13
Development outcomes	30%	9
Outcomes studied		
Knowledge of how to monitor	0%	0 (out of 30)
Knowledge of how to sanction	0%	0
Monitoring effort	48%	13
Sanctioning effort	3%	1
Provider effort	55%	15
Provider corruption	7%	2
Outputs	40%	11
Outcomes	48%	13
Attitudes toward government	11%	3
Sector		
Education	43%	13 (out of 30)
Health	27%	8
Entitlement programs	10%	3
Other	20%	6
Mode of delivery		
Meetings	40%	12 (out of 30)
Media campaigns	23%	7
Pamphlets, score cards, or letters	30%	9
Other	20%	6
Region		
Africa	37%	11 (out of 30)
Asia	43%	12

Latin America	10%	3
Cross-national	10%	3

*The categories do not necessarily add up to 30 within each section because they are not mutually exclusive or, as in the case of Region, a study may report on more than one region

Focus on information about the duties of service providers and their outputs, rather than actual effort. The most common type of information evaluated was information about service providers' duties and obligations, such as information about teachers' or health workers' *de jure* working hours and responsibilities, which was provided in 47% of the studies (Table 5). (Given the larger number of studies in this review, we move to using percentages rather than proportions for summary statistics.) This approach to stimulating improved governance aims to *enable* citizens to more effectively monitor service providers by providing them a benchmark against which providers' observed behavior and performance can be compared. A closely related approach to enabling more effective monitoring involves providing citizens with information about their *entitlements* (e.g., the right to rice subsidies), but this approach was less common, accounting for only 20% of the studies included in this review (Table 5).

The second most common type of information evaluated was information about the outputs produced by service providers (43% of studies) and development outcomes, such as student literacy (30% of studies) (Table 5). These interventions aim to increase citizen action by lowering the costs of monitoring, on the assumption that citizens can readily attribute variation in outputs or outcomes to provider effort rather than factors beyond the provider's control, such as inputs. The converse approach to reducing monitoring costs is providing information about a provider's inputs to citizens in the hope that doing so will allow citizens to more easily attribute performance to the provider's level of effort.

Only three studies (10%) provided information about providers' *actual* level of effort or corruption, even though this type of information is arguably the most direct, accurate, and actionable performance measure, since it is entirely within providers' control (unlike outputs and outcomes) (Table 5). Whereas citizens may struggle to infer providers' performance from information on inputs, outputs, or outcomes, due to attributional ambiguities, information about provider effort is a direct measure of providers' performance. This gap may reflect the fact that such information is often viewed as sensitive, and therefore dissemination is not politically palatable. Nevertheless, from a theoretical perspective, this avenue holds promise as the most direct means to reduce citizens' monitoring costs and motivate action. Though it is challenging, decision makers might look for windows of opportunity when direct information on provider effort and corruption can be disseminated with the consent of government, to avoid provoking backlash.

A workaround when this approach is not possible is to couple information on outputs or development outcomes with comparative information from neighboring clinics, schools, or districts. Providing a benchmark against which providers' can be judged makes it easier for citizens to infer providers' performance. While common in the realm of electoral accountability (e.g., politician score cards), comparative information remains understudied in the domain of non-electoral accountability, with only four of the 30 studies that target citizens examining contexts where this type of information is provided.

Evaluations of programs that provide information about citizens' avenues of redress, designed to *enable* citizens to more effectively sanction providers, were also relatively uncommon, accounting for only seven of the 30 studies (23%) (Table 5). This, too, should be surprising, since knowledge of the steps one can take in response to

failures of accountability is an obvious prerequisite to citizen action — and one that is often not met in practice.

It is worth noting that most papers studied interventions that provided multiple types of information, and the average number of distinct types of information provided among each intervention was 2.2. However, we do not find any particular combination of types of information to be most prevalent across the studies in the review.

Focus on outcomes of citizen monitoring and level of service provision, rather than citizen sanctioning or level of corruption. There is almost no evidence on the impact of information on the level of effort that citizens exert to *sanction*, rather than merely monitor, frontline service providers, whether sanctioning directly through informal social pressure or indirectly through reporting and whistleblowing to higher levels of government. This dearth of evidence makes it difficult to know whether information's downstream impacts on provider effort and development outcomes are driven by greater monitoring, sanctioning, or some combination of both.

Further research on the role that information can play in familiarizing citizens with concrete ways to monitor and sanction government is important. Considering the concrete ways that citizens can monitor and sanction government is also useful, because it illuminates the preconditions for information to catalyze bottom-up monitoring — if citizens cannot easily monitor providers or cannot readily access a means to sanction unaccountable behavior, greater transparency is unlikely to lead to positive change.

Relatively few studies, moreover, examine the impact of information on actual levels of corruption by service providers. Measuring corruption is, of course, difficult, but the consequences of this gap are important. If, for example, greater monitoring causes frontline providers to increase effort but also their level of corruption (as compensation), then existing studies that examine only provider effort may overstate the benefit of these programs. Capturing a more holistic picture of how frontline providers change their behaviors — both good and bad — will require researchers to adopt more creative and innovative measurements moving forward. (Potential approaches include work by Zinn and Wurbach (2016), and Tanis and Fazekas (2017).

Information about causal mechanisms. Not only do we have little evidence of whether information provision improves service provision through increased citizen sanctioning as well as increased citizen monitoring, but we also have little evidence of whether citizen knowledge of how to monitor and/or sanction officials increases (Table 5). This gap is important not only because it means a potentially promising pathway to change remains untested, but also because other types of informational interventions often take for granted that citizens are familiar with the steps they can take to monitor and sanction government providers, even though this assumption may not always hold in practice.

Evidence across sectors. The majority of studies examine interventions in the education (43%) and health sectors (27%) (see Table 5). Studies of information and its ability to improve access to entitlement programs such as rice subsidies or guaranteed employment were less common, accounting for only three out of 30 studies. Interventions in other categories include studies of funds used in infrastructure projects (10%) and cross-national studies of freedom of information (FOI) laws and corruption in government generally (10%). No studies addressed accountability relationships in the agricultural, policing, and water and sanitation sectors.

Focus on countries with significant bureaucratic capacity. Similar to the evidence on within-government accountability, evidence on citizen-government accountability is concentrated in countries with significant bureaucratic capacity and some pre-existing institutions for high-level government, top-down sanctioning of poor performance. Sixty-three percent of the studies come from just three countries — India, Indonesia, and Uganda. Again, it is worth noting that the lack of country variation among the available studies limits our ability

to study rigorously the conditions that moderate the effectiveness of information.

Mode of information delivery. Community meetings were the most common form of delivery (40%), followed by pamphlets, score cards, and letters (30%), and media campaigns (23%). In the “Other” category are movie screenings, SMS messaging, and FOI laws (Table 5).

WHAT DOES THIS EVIDENCE SAY?

As with the evidence on the effects of information on within-government accountability, we summarize the findings from a relatively small number of studies. Since not all of the studies are experimental or quasi-experimental, or provide enough detail for a meta-analysis, we can only provide a descriptive and qualitative summary, which should be read with caution. Again, we have no guarantee that the evidence published (either in journals or research papers) is representative of all the studies that have, in fact, been done (since many may remain unpublished).

Descriptive statistics

Table 6 displays the proportion of studies that report a positive effect for each of the eight outcomes considered in this review.

First, even after considering caveats about publication and research bias, roughly two-thirds of the studies in our review show that providing information to citizens has a significant positive impact on development outcomes and service provision.

Across all 30 studies, we find that a positive effect was found on 57% of the measured outcomes (final row of Table 6). Though the total number of studies is small, we see that a majority of studies find a significant impact on citizen monitoring of service providers and on citizen attitudes toward government, similar to the impacts on level of provider effort, outputs produced, and development outcomes.

However, the evidence base remains too limited to draw firm conclusions from these findings. It is also important to keep in mind that not all studies collect information on all outcomes, and it is possible — indeed, likely — that researchers spend fewer resources collecting data on outcomes they do not think will be affected by the intervention, leading to upward bias in the reported effects. Conversely, subtle or difficult-to-measure impacts often go unmeasured, leading to downward bias in the reported effects.

Table 6: Summary of impacts on key outcomes (citizen-led accountability)

Proportion of studies reporting a positive effect on citizens':

Knowledge of how to monitor	NA
Knowledge of how to sanction	NA
Effort to monitor service providers	7/13
Effort to sanction service providers	1/1
Attitudes toward government	2/3

Proportion of studies reporting a positive effect on service providers':

Level of effort	8/15
Level of corruption	2/2
Outputs produced	9/11

Proportion of studies reporting a positive effect on:

Development outcomes	7/13
----------------------	------

57%

Proportion of all measured outcomes with positive impact

(of all outcomes measured across all 30 studies)

In addition, the studies included in this review may overstate the impact of information on accountability outcomes, because, as a general rule, studies with positive effects are more likely to get published than are studies with null effects. It is thus likely that many studies of failed interventions never made it to publication (or were never written to begin with). This is a problem that plagues all meta-analyses studies, and ours is no exception.

Table 7 summarizes our measure of a program's overall effectiveness — the proportion of measured outcomes for which a positive effect was observed — along four dimensions: sector, the type of information provided, delivery mode, and region.

Table 7: Summary of effectiveness of citizen-led interventions

	# of positive outcomes (as a proportion of all outcomes)	# of studies (out of 30)*
<i>Sector</i>		
Education	11/27 (40%)	13 (out of 30)
Healthcare	11/15 (73%)	5
Other	3/4 (75%)	3
<i>Type of information provided</i>		
<i>Citizens':</i>		
Avenues of redress	10/14 (71%)	7 (out of 30)
Entitlements	10/11 (91%)	6
<i>Service providers':</i>		
Duties and obligations	17/29 (58%)	12 (out of 30)
Inputs	14/17 (82%)	9
Effort/corruption	2/4 (50%)	3
Outputs	13/23 (56%)	11
Development outcomes	11/17 (64%)	7
Attitudes	2/3 (67%)	1
<i>Delivery mode</i>		
Meetings	16/26 (61%)	9 (out of 30)
Media campaign	7/14 (50%)	7
Pamphlets/score cards	14/21 (67%)	9
<i>Region</i>		
Africa	12/20 (60%)	11 (out of 30)
Latin America	2/6 (33%)	3
Asia	19/28 (67%)	12
Cross-national	2/4 (50%)	3

*The categories do not necessarily add up to 30 within each section because they are not mutually exclusive or, as in the case of Region, a study may report on more than one region

Additional insights

Based on the 30 studies in this review, we can make a number of additional observations. First, the evidence seems more promising when there is a clear alignment among the information provided, what citizens care about in their daily lives, and government actors who are willing and able to respond. Second, information provision to citizens seems more likely to result in better service provision in contexts with relatively stronger top-

down sanctioning of local officials by those in higher levels of government.

Information is more effective when it is valued by citizens who make demands providers can address.

Overall, interventions that provide information that is more salient — directly and clearly relevant to an individual's everyday concerns — seem to have a greater impact on citizen accountability outcomes.

For example, interventions providing information about individual or household entitlements and the health sector, which are often more immediately urgent to ordinary people, appear to be somewhat more effective than those in the education sector. Interventions that targeted the health sector had a positive effect on 73% of measured outcomes, whereas programs in the education sector had a positive effect on only 40% of measured outcomes (Table 7). Moreover, programs that provide information about citizens' entitlements within a given sector — whether in the health sector, education sector, or other sectors — also appear to be particularly effective, with a positive effect being found on 91% of measured outcomes (Table 7).

Our reading of the literature suggests that an explanation for these patterns may be the dual importance of citizen motivation and provider agency. For information to be effective, citizens must have strong and clear reasons to act on it, and frontline providers, for their part, must have the ability to respond to these demands. These two conditions are most likely to be met in the context of entitlement programs, such as guaranteed employment (Ravallion et al. 2015) or rice subsidies (Banerjee et al. 2016). They are also common in the health sector, where citizens often have an urgent interest in improved health (sometimes, as literally a matter of life or death) and providers generally have the capacity to meet those needs.

By contrast, incentives to act on information may be weaker in the education sector, where parents may or may not prioritize improving education above other demands on their time, given that the value of education accrues over a long time horizon, and even the most hardworking teachers often struggle to improve student learning due to factors beyond their control. Perhaps, as a result, information interventions appear to be somewhat less effective in this sector (Banerjee et al. 2010; Lieberman et al. 2014).

These considerations suggest information interventions may be most likely to improve government accountability when they address performance shortfalls that are valued by citizens and relatively easy for government officials to address. Consistent with this perspective, Björkman et al. (2017) find that providing information about health workers' duties and responsibilities to citizens in rural Uganda led to greater monitoring and improved health outcomes precisely because it helped citizens identify and monitor behaviors that were within health workers' control — e.g., attendance, opening hours, and waiting time — and that had immediate and direct impacts on citizen well-being. Also emphasizing the *dual* importance and citizen incentives and provider agency, Björkman et al. (2017) find that an intervention that encouraged citizens to demand better services but did not provide information about health workers' duties and responsibilities led citizens to focus on issues beyond the control of health workers, and the intervention ultimately proved ineffective. Government actors may also be unwilling or unable to respond when they are embedded in clientelistic relationships, which allocate services based on political criteria.

Thus, evidence for the short route to accountability exists, but under certain conditions. In the ideal scenario, the short route likely works best in cases like those in Porto Alegre, Brazil, or New York, USA (Gilman et al. 2019) where local governments who really want citizen input deliver information about government performance and put a simple, clear question to citizens. Citizens answer with clear, relevant information about their wishes, and this information helps local governments solve the most urgent problems first and allocate resources efficiently. In these scenarios, information provision to citizens works because there is clarity about what citizens are being asked to do and there are government actors who are willing and able to respond.

Creating “fire-alarm accountability”: Transparency and information may be more likely to result in citizen monitoring in places with top-down sanctioning. Another factor that may make information provision more likely to result in citizen accountability action is the presence of actors and institutions that can implement top-down sanctioning — i.e., higher levels of government that can punish poorly performing local officials and service providers.

Most of the evidence of positive impact comes from just two countries —Indonesia and Uganda. Why does information provision to citizens seem to result in better service provision in these contexts? While we cannot be completely certain, because existing studies tend not to unpack all the causal mechanisms, there are a few clues. First, existing studies focus on the outcome of citizen monitoring. Almost no studies on non-electoral citizen accountability look at citizens who take action in terms of sanctioning service providers or officials. One explanation for this gap may be that studies of non-electoral accountability have simply imported from studies of electoral accountability the assumption that citizens have access to sanctioning mechanisms. While this assumption makes sense for electoral accountability — voters have the ability, at least theoretically, to vote out poor performers — such an assumption makes less sense when studying non-electoral citizen accountability.

Indonesia and Uganda, however, have relatively stronger top-down sanctioning than many developing contexts. In both places, there are higher levels of government that are at least sometimes willing and able to sanction local officials and service providers at lower levels. In these places, where citizens believe that there is some chance higher levels of government will respond by disciplining misbehaving local officials or providers, citizens may be more likely to respond to informational interventions by increasing their monitoring activities and “ringing the alarm” when they see a problem.

In short, transparency and information interventions can help to create systems of fire-alarm accountability in places where top-down sanctioning already exists (McCubbins and Schwartz, 1984). In this model, there is a division of responsibility in accountability actions — citizens take responsibility for monitoring and higher levels of government take responsibility for sanctioning.

6. Concluding Reflections

Despite considerable interest among policymakers in the power of information and transparency to improve governance outcomes, rigorous evaluations of their impact remain scarce. Using an extensive search process to identify studies that rigorously evaluate the impact of information on accountability, this study identified only 30 studies on the links among information, citizen engagement, and government accountability, and only 12 studies on the link between information and within-government accountability. The overall dearth of evidence highlights the importance of expanding the evidence base generally, across all sectors and all of the various types of information that may encourage action by accountability actors.

While it is too early to assess the overall effectiveness of this approach, given the limited size of the evidence base, this review suggests some preliminary ideas about when information is most likely to be effective. Regarding mobilizing citizen action, the available evidence is consistent with the idea that information is most

effective when two conditions are met: (1) citizens have strong material incentives to monitor and/or sanction government actors in pursuit of improved service delivery and (2) providers have the ability to respond to and meet these pressures. These conditions often characterize citizen-provider relations in the context of entitlement programs or primary healthcare but may be less common in the education sector — where the value of quality education accrues over a long time horizon and thus may not be valued by parents in the immediate term, and where teachers struggle to contend with challenges to quality education beyond their control.

This review also identifies several priority avenues for future research, grant making, and program design. Above all, there is a need to expand the evidence base generally, across all domains and sectors. Research outside the countries of Indonesia, India, and Uganda will be particularly important for understanding which contextual factors influence information's effectiveness. In addition, further research is needed on the effectiveness of information outside the domains of health and education. For example, we find no studies that assessed the impact of information on accountability relationships between police and citizens, despite the fact that most citizens encounter the police more often than any other type of frontline provider. Accountability relationships in the agricultural and water and sanitation sectors are also understudied.

In terms of evaluating particular types of information, we see a need for greater experimentation with information related to providers' effort and/or levels of corruption, since this avenue is both understudied and theoretically the most direct pathway to lowering accountability actors' monitoring costs.

MOVING BEYOND THE PRINCIPAL-AGENT FRAMEWORK: INFORMATION++ APPROACHES

Our review also calls attention to the assumptions that underlie the principal-agent framework and that are taken for granted to motivate stakeholders' focus on information and transparency interventions. The principal-agent framework assumes the existence of a relationship in which a principal delegates a task to an agent, yet in the governance sector, such arrangements do not always exist. Sometimes, principals (be they citizens, senior officials, or politicians) do not see themselves as actors delegating tasks to their agents, as economic theory would have them do. This disconnect may happen either because of attitudinal barriers or because it would be, in fact, unreasonable for them to do so. For instance, in many contexts, politicians have short mandates, while bureaucrats are tenured civil servants who accessed their jobs years or decades before the politician who is expected to oversee them got elected. Moreover, internal dynamics within governments often deviate from the simple, hierarchical relationships that most models assume. As Dhaliwal and Hanna (2014) observe, "while reforms based on principal-agent models have somewhat clear effects in theory, in practice they are difficult to implement in real government settings due to the complexity of the environment."

In these environments, the mere provision of information to reduce information asymmetries may, however, not be enough to foster government accountability. For example, information may fail to lead to improvements in government accountability, due to insufficient political competition (Callen et al. 2016), low capacity among principals (Albuquerque Tavares 2015; Raffler 2016), active opposition to information interventions on the part of agents and/or lack of support from agents (Banerjee et al. 2008; Dhaliwal and Hanna 2014), or the lack of accompanying incentives (Cilliers et al. 2016).

More generally, the principal-agent model overlooks mechanisms other than the reduction of information asymmetries through which information treatments can impact government effectiveness. Here, we identify five such mechanisms based on recent research in behavioral social science: salience, persuasion, training, coordination, and alignment of incentives. Each of these mechanisms calls for complementing information with

other elements that could be either assigned to all subjects or units in the study or assigned only to a random subset of them. While the former approach is commonly found in development programs and research, the latter approach allows for the measurement of the separate effects of information and additional elements of those interventions, thus fostering learning of how and why different information strategies work. In the paragraphs below, we spell out each of these options for complementing information treatments, with reference to the most common case, of providing information about the performance of agents. In each case, we make explicit the assumptions that would need to hold for these complements of information to impact government accountability. To the extent that these assumptions hold in a particular geographic, policy, or governance context, practitioners may want to consider embedding these elements in their information interventions.

Information only. The baseline is a pure information treatment, where information is expected to lower information asymmetries. The typical treatment here is the provision of information to principals on the performance of their agents. The key assumptions here are that principals do not already have that information, but demand it and will use it once it becomes available to them.

Information + saliency. Information can also be leveraged to make a particular issue of government performance salient over others. The typical treatment here would consist of providing information that goes beyond communicating a fact and grabs receivers' attention on the issue at hand. In the case of interventions providing information about agents' performance, a saliency complement would benchmark this data to comparable agents, to previously defined expectations, or to the duties and responsibilities of the agents. An example of such treatment is the one designed by Callen et al. (2016), who provided data about doctor absenteeism to politicians, flagging in red those clinics where absenteeism was above a certain threshold. The critical assumption here is that actors have not just limited information, but also limited bandwidth to identify the most relevant problems or to focus on them.

Information + persuasion. Another option is to leverage information to persuade, by transmitting it through effective communication techniques that change the priors of actors who receive the information. The typical treatment here would consist of the provision of information with the intent, and the communication capacity, to sway the receiver's point of view. In the case of interventions providing information about agents' performance, complementing information with persuasion may mean underlining the information's source or another aspect of it that appeals to emotional responses. The critical assumption is that information — if communicated in a certain way — will be able to push the receivers to update their beliefs.

Information + training. Information can also be leveraged to empower actors to act on a specific issue they are being informed about. The typical treatment here provides information through training sessions that teach actors how to use the information effectively. In an intervention that provides information about agents' performance, a training complement may teach principals how to identify under-performers and give them practical skills for addressing performance gaps. For instance, Raffler (2016) complemented information provided to politicians about bureaucrats' performance with training sessions in which politicians learned about their mandates and rights. The assumption here is that actors lack capacity to use the information or to immediately see the relevance of the information they are being provided.

Information + coordination. Another interesting option is to use information to foster coordination among agents. The typical treatment here consists of providing information in a way that enhances

the emergence of common knowledge and the coordination of those receiving the information, be it through the context of the information provision or through additional information provided on how best to coordinate. For instance, Banerjee (2016) examines the provision of cards with information about a program to its beneficiaries as a strategy to reduce leakages in program administration. For half of the study's villages, this treatment was complemented by posting the beneficiary list publicly and distributing information through loudspeakers. Eligible households in villages subjected to the public treatment received more benefits than eligible households in villages where the cards were mailed but no public information was provided, which the author interprets as the public treatment facilitating the coordination of beneficiaries. The assumption in combining information with coordination treatments is that there are barriers preventing individuals from acting on the information received on their own that can be overcome by providing the information in a way that fosters collective action.

Information + incentives. Finally, information can be leveraged to incentivize actors, which can be done by incentivizing agents to perform and/or by incentivizing principals to hold agents to account. The typical treatment here provides information while establishing performance-based incentives linked to those metrics. For example, Cilliers et al. (2016) study an intervention where school directors had to report teacher attendance, and additionally for a subset of the schools, these attendance reports were linked to bonus payments for teachers. The authors found that, while information on its own did not improve teacher attendance or student enrollments, it did when complemented with incentives. Another possibility is to use information to enhance existing incentives, for example, by revealing the probability of detection (and/or sanctioning) in contexts where government actors are not accountable because they believe they are unlikely to be detected and/or sanctioned. While in general researchers have explored how information and incentives for agents to perform can boost government accountability, providing information and incentives for principals to hold agents to account may be at least as important. These incentives may increase the benefits of using readily available information. As in all cases, the critical assumption in this case is that there are information constraints that prevent any existing (formal or informal) incentives from functioning.

These five complements to information potentiate the three main enablers of accountability action, as depicted in Figure 1: ability, motivation, and feasibility (to hold government actors to account). Moreover, these enablers are not mutually exclusive. In fact, they are often combined in policies and randomized studies of information and accountability.¹⁵ It is useful, however, to theorize them separately, and future research should test their importance for increasing government accountability in different settings. This can be done through factorial experimental designs that allow researchers to spell out the effect of each of the separate components as well as the effect of their combination. Future research could thus contribute to refining and expanding the hypotheses in Figure 1: e.g., under which circumstances does information plus coordination increase the ability and motivation of citizens to monitor government actors?

Finally, there are other issues related to how information may impact government effectiveness that are meaningful theoretically but have not been addressed empirically in the papers we review. These include the durability of information effects (Nygqvist et al. 2017), the framing of the information (e.g., Kettle et al. 2016), the provision of absolute versus relative (or benchmarked) information, the source of the information, and the

15. For example, the school intervention presented Cilliers et al. (2016) combined information with incentives and coordination, since attendance reports were broadcast to school stakeholders every month.

mode of delivery. These are particularly important for designing policies that leverage information to improve government accountability.

Appendix 1: Literature Search Protocol

Appendix 1A: Search protocol for studies of within-government accountability

We designed a “brute force” search on Web of Science. The idea was to come up with the bare-minimum semantic fields that should be mentioned in the title, abstract, or keywords (the fields covered by Web of Science’s “topic,” a searchable category) and then to come up with the maximum number of words that could reasonably be used within each semantic field by papers that we would want to include.

In practice, our search terms ask Web of Science to return articles published in the past 10 years that have:

1. At least one word in the semantic field of “government actors” (our subject of interest), which include:
 - a. Words for **generic** government actors: “officials,” “politicians,” “bureaucrats,” “civil servants,” “policymakers,” “policy actors,” “public workers,” “public administrators”
 - b. Words for **large categories of public workers**: “doctors,” “nurses,” “teachers,” “policemen”
 - c. Words for **executive** branch leaders and institutions: “mayors,” “governors,” “ministers,” “secretaries,” “the executive,” “the government,” “local governments,” “municipal governments,” “state governments,” “provincial governments,” “regional governments”
 - d. Words for **legislative** branch leaders and institutions: “the legislative,” “congress people,” “congressmen,” “parliamentarians,” “members of parliament,” “city councilors,” “congress,” “parliament,” “lawmakers,” “legislators,” “deputies,” “senators,” “senate,” “regional assembly(ies),” “state assembly(ies),” “representatives,” “regional congress(es),” “state congress(es)”
 - e. Words for **judiciary** branch leaders and institutions: “the judiciary,” “judges,” “court(s),” “justices,” “magistrates”
 - f. Words for **external-control** leaders and institutions: “prosecutor(s),” “auditing institution(s),” “comptroller(s),” “regulator(s),” “watchdog,” “anti-corruption agency,” “ombudsman,” “ombudsperson,” “auditor(s),” “inspector(s)”
2. AND at least one word in the semantic field of “keeping accountable” (our verb of interest), which include:
 - a. Words related to **accountability**: “accountability,” “accountable,” “responsiveness,” “responsive,” “sanction(s),” “sanctioning,” “sanctioned,” “reward(s),” “rewarding,” “rewarded,” “punish,” “punishing,” “punishment(s),” “punished,” “penalty,” “penalize,” “penalized,” “incentive(s),” “incentivize,” “incentivized,” “discipline,” “disciplined,” “disciplining”
 - b. Words related to **monitoring**: “monitoring,” “monitor,” “monitored,” “oversee,” “oversight,” “oversaw,” “overseeing,” “supervision,” “supervise,” “supervised,” “control,” “controlling,” “controlled,” “assess,” “assessing,” “assessed,” “evaluate,” “evaluating,” “evaluated,” “measure,” “measuring,” “measured,” “audit,” “auditing,” “audited”
3. AND at least one word in the semantic field of “data” (our object of interest), which include:
 - a. Words capturing different types of **data**: “data,” “information,” “documents,” “records,” “evidence,” “report(s),” “flag(s),” “statistics,” “indicator(s),” “census,” “evaluation(s),” “assessment(s),” “audit(s),” “measure(s),” “transparency”
 - b. Words capturing the **collection and transmission** of such data: “measuring,” “documenting,” “recording,” “reporting,” “flagging,” “evaluating,” “assessing,” “measured,” “documented,” “recorded,” “reported,” “flagged,” “evaluated,” “assessed,” “inform,” “informed,” “informing”

These search terms produce 100,407 articles published between 2007 and 2016 within the journals indexed by Web of Science. However, these include many papers from the natural sciences and other irrelevant fields. We, therefore, focus on papers published in journals in the areas of political science, economics, and public administration — a total of 5,691 articles. These are the titles and abstracts that we reviewed to identify papers that are broadly relevant to our literature review. We also reviewed the titles and abstracts of all papers that cited these 5,691 articles, as indexed in Google Scholar.

APPENDIX 1B: SEARCH PROTOCOL FOR STUDIES OF INFORMATION, CITIZEN ENGAGEMENT, AND GOVERNMENT ACCOUNTABILITY

Our search process began with a Web of Science search for the following keywords:

("Scorecards") or ("Score cards") or ("community-based monitoring") or ("community based monitoring") or ("community monitoring") or ("community participation") or ("citizen monitoring") or ("citizen participation") or ("social audit") or ("social audits") or ("report cards") or ("audit") or ("audits") or ("auditing") or ("information campaign") or ("newspaper campaign") or ("radio campaign") or ("radio access") or ("transparency") or ("transparency campaign") or ("active citizenship") or ("performance information") or ("participatory budgeting") or ("participatory") or ("collective action") or ("social accountability") or ("participatory accountability") or ("transparency") or ("information") or ("freedom of information") AND ("demand for accountability" or "collective action" or "participation" or "private action" or "monitoring" or "sanctioning" or "monitor" or "sanction" or "accountability" or "performance" or "corruption" or "public services" or "quality of services" or "leakage") or ("freedom of information") NOT ("elections")

Restricting the sample to articles published within the past 10 years from developing countries and within the disciplines of economics, political science, or public policy, this search process resulted in 1,290 distinct studies. Of these, 19 were found to be relevant to this review. We then used Google Scholar to identify potentially relevant studies among those that cited the studies we identified through our Web of Science search, yielding an additional four studies. The resulting sample includes 14 randomized controlled trials (RCTs) and nine quasi-experimental studies. Seven of the RCTs evaluated multiple types of information, resulting in a total of 30 distinct evaluations included in this review.

Appendix 2: Papers Reviewed on Information and Citizen Accountability

Andrabi, Tahir et al. "Report cards: The impact of providing school and child test scores on educational markets." *American Economic Review* 107.6 (2015): 1535-1563.

Banerjee, Abhijit et al. "Tangible information and citizen empowerment: Identification cards and food subsidy programs in Indonesia." *Journal of Political Economy*, forthcoming (2016).

Banerjee, Abhijit V. et al. "Pitfalls of participatory programs: Evidence from a randomized evaluation in education in India." *American Economic Journal: Economic Policy* 2.1 (2010): 1-30.

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Camargo, Braz et al. "Information, market incentives, and student performance." (2014). Germany: Iza.

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Appendix 3: Papers Reviewed on Information and Within-Government Accountability

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Banerjee, Abhijit et al. "E-governance, accountability, and leakage in public programs: Experimental evidence from a financial management reform in India." No. w22803. (2016). Cambridge, MA: National Bureau of Economic Research.

Banerjee, Abhijit V. et al. "Putting a band-aid on a corpse: Incentives for nurses in the Indian public healthcare system." *Journal of the European Economic Association* 6.2-3 (2008): 487-500.

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Appendix 4: Other References

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