



The power of information in public services: Evidence from education in Uganda

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ABSTRACT

In this paper we argue that innovations in governance of social services are an effective way to improve outcomes such as attainment of universal primary education. To test this hypothesis we exploit an unusual policy experiment: a newspaper campaign in Uganda aimed at reducing the capture of public funds by providing schools (parents) with systematic information to monitor local officials' handling of a large education grant program. Combining survey and administrative data, we show that public access to information can be a powerful deterrent to the capture of funds at the local level and that the reduction in the capture of funds that resulted had a positive effect on school enrollment and learning outcomes.

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1. Introduction

The literature on education policy in developing countries focuses predominately on the last link in the service delivery chain; i.e., using a variation across schools or students to estimate the impact of various programs and inputs at the school level. A growing literature based on randomized trials have also helped start building consensus of what works, what doesn't, and why. However, a country's ability to improve education outcomes is not only determined by what happens at the school level, but by the behavior of different actors and agencies involved in the design and implementation of education policy. As service delivery in many developing countries is often plagued by inefficiencies and corruption, interventions that focus on improving governance in general and governance of social services in particular can be an important complement to more traditional school-based interventions to increase enrollment and student learning.¹

To examine this hypothesis we exploit an unusual policy experiment. Towards the end of 1997, the Ugandan government began to

publish systematic public information on monthly transfers of capital grants to districts in the national newspapers. The newspaper campaign came in response to evidence of extensive capture and corruption in the education sector – in 1995 schools received on average only 24% of the total yearly capitation grant from the central government (Reinikka and Svensson, 2004). The campaign was intended to enhance head teachers' and parents' ability to monitor the local administration and to voice complaints if funds did not reach the schools.

Using the survey data and administrative data from the Ugandan Ministry of Education, we link school enrollment and average primary leaving exam scores with data on the capture of funds and distance to the nearest newspaper outlet. A school's exposure to the newspaper campaign is determined both by the timing of the campaign and schools' (parents') access to newspapers. Exploiting variation over time (before and after the newspaper campaign was initiated) and across space (distance to a newspaper outlet), we find that public access to information can be a powerful deterrent to the capture of funds at the local level and that the reduction in the capture of funds was associated with an increase in enrollment. We also find positive, albeit weaker, effects on student learning (test scores). The results suggest that the effect on the quantity of education of making more resources available at the schools (through reduced local government capture) is of the same order of magnitude as some of the more cost-effective school interventions that have been evaluated based on randomized design.

This paper links to a large literature on education policy in developing countries (for surveys see Glewwe, 2002; Glewwe and

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¹ We are not aware of any other studies that explicitly test how changes (improvements) in governance affect school-specific outcomes (enrollment and student learning). There are however several studies on policy formation at the local level in developing countries (see, for example, Duflo and Chattopadhyay, 2004) and on education policies and the financing of schools in particular (see, for example, Kremer et al., 2002).

Table 1

Summary statistics on school characteristics, 1995 and 2001 surveys.
Source: Authors' calculations based on 1996 and 2002 survey; see text for details.

	Median	Mean	Standard deviation
<i>1995</i>			
School size (number of students)	450	530	367
Student–teacher ratio	37	37	11
Income (Ugandan shilling)	5617	6681	3218
Ratio of qualified to total teachers	0.88	0.79	0.25
<i>2001</i>			
School size (number of students)	855	954	477
Student–teacher ratio	55	56	16
Income (Ugandan shilling)	8565	9756	4027
Ratio of qualified to total teachers	1	0.88	0.19
Distance to newspaper outlet (kilometers)	9	15.3	33.3

Kremer, 2006) as well as a small but growing microempirical literature on corruption.² It adds to the former by focusing on the governance of social services and by exploring the effects of making untied funds available to schools. It adds to the latter by relating changes in measured corruption to changes in socioeconomic outcomes.

The next section describes the data used in the empirical analysis and the method used to quantify the capture. Section 3 describes the situation before the newspaper campaign and lays out the key components of the reforms in the late 1990s. In Section 4 we discuss the empirical strategy. Section 5 presents the empirical evidence of reduction in the capture of funds on school enrollment and learning results. Section 6 concludes.

2. Data

The data used in this paper come from two sources: survey data on capture/corruption from two public expenditure tracking surveys, and enrollment and test score data from administrative records. Summary statistics are reported in Tables 1–3.

Public expenditure tracking surveys were conducted in 1996 and 2002.³ Both surveys collected detailed information on grant receipts (the 1996 survey collected information for the period 1991–1995 and the 2002 survey collected data for 2001) and enrollment. The 2002 survey also collected data on the knowledge of the grant program by administering a test to head teachers, the means to acquire information on the grant program, and other variables that may influence the bargaining position of individual schools.

In both surveys, the grant data collected at the school level appear to adequately reflect what schools actually received. The data were collected directly from the school records, and in most cases the enumerators could double-check the information by examining copies of checks received. School records were kept for internal use only. They were not submitted to district or central authorities and were not used as a basis for funding. The risk that head teachers might have underreported school income in order to divert funds for themselves was perceived as less serious, since each check had to be signed by at least two people (the head teacher and the chairperson of the school management committee).

The 1996 sample consisted of 250 schools, randomly drawn from 18 districts. To ensure that the sample had broad regional coverage (Northwest, North, Northeast, East, Central, Southwest and West),

² For a discussion of this literature, see Svensson (2005). Contributions dealing with public corruption include Di Tella and Schargrodsky (2003), Hsieh and Moretti (2006), Olken (2006, 2007), Reinikka and Svensson (2004), and Svensson (2003).

³ For a discussion of the 1996 public expenditure tracking survey, see Reinikka (2001) and Reinikka and Svensson (2001, 2004). A more general discussion of these types of service provider surveys can be found in Dehn, Reinikka and Svensson (2003) and Gauthier and Reinikka (2007).

Table 2

Summary statistics on school enrollment and test scores, 1995, 1997, 2001 and 2002. Source: Ministry of Education (Education Management Information System/EMIS) and Uganda National Examination Bureau (Primary Leaving Exams records); see text for details.

	Median	Mean	Standard deviation
<i>1995</i>			
School size (number of students), P7	34	42	37
Average primary leaving exam score	8.7	9.8	5.8
<i>1997</i>			
School size (number of students), P7	37	46	38
Average primary leaving exam score	10.7	11.1	5.3
<i>2001</i>			
School size (number of students), P7	46	53	37
Average primary leaving exam score	9.8	10.5	5.2
<i>2002</i>			
School size (number of students), P7	44	54	38
Average primary leaving exam score	10.3	10.8	5.4

Table 3

Summary information on capitation grants received as share of entitled grants (percent). Source: Authors' calculations based on 1996 and 2002 surveys and Ministry of Education; see text for details.

	Mean	Median	Standard deviation	Maximum	Minimum	Number of observations
<i>All schools</i>						
1991	3.2	0.0	13.5	114.0	0.0	154
1995	25.4	0.0	35.8	109.8	0.0	200
2001	81.8	82.3	24.6	177.5	9.0	217
			1991		1995	2001
<i>Regions</i>						
Central			6.1		24.3	92.8
North			0.0		42.1	102.4
Northwest			4.2		11.7	90.3
West			0.0		18.4	71.6
Southwest			0.6		19.0	83.3
East			6.7		20.1	62.4
Northeast			3.6		49.3	73.4

and that it was representative of the population of schools in the selected districts, schools were selected using a stratified random sample (see Reinikka, 2001 for details). For each region two or three districts were drawn with a probability proportional to the number of schools in the district, and in each district 10–20 schools were surveyed, depending on the number of schools in the districts.

The 2002 survey expanded the sample with an additional 170 schools from 9 of the original 18 districts.⁴ At the same time, not all of the original 250 schools could be resurveyed in 2002 because of security concerns. Two districts (Moroto and Bundibugyo) were dropped, reducing the sample by 20 schools. One district (Gulu) experienced a major insurgency during the data collection phase, and an additional 11 schools had to be dropped. And one school in the original sample had closed.⁵ We thus have a sample of 218 schools for

⁴ The sampling frame for these additional schools was based on the 2001 school census, and the sampling procedure was similar to that of the 1996 survey. Specifically, a stratified random sample was chosen where each district was weighted according to size (number of schools). Thereafter, one district was randomly chosen from each region. Two additional districts were then selected from the two largest regions. The number of schools to be sampled from each of these 9 districts was proportional to the number of schools in the district.

⁵ An additional complication was that since the 1996 survey, four districts had been split, thus yielding a sample of 22 districts.

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