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DETERMINANTS OF CORRUPTION IN LOCAL HEALTH CARE PROVISION: EVIDENCE FROM 108 MUNICIPALITIES IN BOLIVIA

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Determinants of Corruption in Local Health Care Provision: Evidence from 108 Municipalities in Bolivia

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Abstract

Using newly collected data from a survey of health care users and health facilities in Bolivia, we study the determinants of perceptions of corruption in local health services across 108 municipalities. In particular, we investigate the impact on corruption of two sets of explanatory variables, proxying for i) quality of management in health facilities; ii) voice and accountability. We find that corruption is significantly associated with longer waiting time to obtain medical procedures (which we interpret as a proxy for poor management, having controlled for indicators of how crowded the facility is, such as the number of beds and doctor per capita). Moreover, corruption is perceived to be lower in those municipalities where facilities have consistent monitoring of personnel (in this case, frequent written evaluations of personnel). As for "voice," we find mixed results. No association emerges between perceived corruption voter turnout, participation of citizens to cultural and religious associations (which we interpret as a proxy, albeit imperfect, of social capital), and the number of non-governmental organizations (NGOs) that, following the 1994 decentralization reform, are supposed to channel citizens voice into municipal budget planning. Nonetheless, corruption is lower in those municipalities where NGOs are more active, suggesting that some forms bottom-up accountability can be effective in keeping corruption in check.

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1. Introduction

Corruption is a pervasive phenomenon in Bolivia. Cross-country measures of corruption, such as those published by Transparency International, the Global Competitiveness Report, and the Governance Indices reported by Kaufmann et al. (2001) have been consistent in placing Bolivia among the least transparent societies in the world.

Although available data relies mostly on perceptions collected from business environment surveys and expert opinion, there are many angles to the issue of corruption – ranging from large kickbacks associated with public procurements to petty corruption in everyday interactions with public officials. Moreover, corruption is likely to have different characteristics and effects at different levels of government and in different sectors of the economy. However, due to the lack of data, disaggregated analysis of corruption is scant.

This paper is a first attempt at filling this gap.

Using newly collected data for 108 municipalities in Bolivia we investigate the determinants of corruption (as measured by average perceptions of corruption) in basic health care provision at the local level.

In Bolivia, the case for disaggregating the analysis of corruption to the sub-national level - and especially the municipal level – is particularly compelling. Since Bolivia embarked on an ambitious set of decentralization reforms in the mid-1990s, a substantial amount of public resources have been managed at the municipal and departmental levels of government. For example, approximately two thirds of social expenditures are managed by sub-national governments and the same share of investments in social infrastructure are managed by municipalities. Parallel to the decentralization reform, the government initiated a program of universal basic health care for mother and children (*Seguro Basico de Salud*, SBS) that directly involves local-level governments from the financial as well as the administrative point of view (more on this in the following section). Finally, the reforms resulted in a new institutional framework at the different levels of government for fiscal management, personnel management, public investment and citizen participation.

In our analysis, we are particularly interested in two set of possible determinants/deterrents of corruption (i) exit and voice; (ii) and management practices.

The analysis of accountability in terms of "voice" and "exit" dates back to Hischman (1970). In short, public sector users can assess their approval of service through voice (protest) or exit (by finding alternative sources of supply).

Voice can work through both formal and informal institutional channels. Formal channels include the electoral process itself, which provides an established mechanism by which to evaluate and re-elect (or fail to re-elect) public officials. Informal channels include social, cultural and religious associations as well as the media through which citizens form and express public opinion. In particular, voice can play a role in motivating public officials to work for the poor, to commit to public services and to be user-oriented among others.

The existing, and so far mostly qualitative, literature suggests a negative association between voice and corruption - the higher voter turnout and the higher civic participation, the lower the levels of corruption and the greater the effectiveness of public service delivery (Putnam, 1993; Crook and Manor, 1998). A recent study on the Bolivian public sector finds that citizen voice and participation play a key role in improving governance in a number of public agencies (World Bank Institute, 2001).

The option of exiting public sector services provides an alternative mechanism for citizens to affect public sector performance. In the Bolivian case, the substantial cross-sectional variation in the distribution of public and private providers of basic health services provides, in principle, a good test of the effectiveness of exit on corruption – 44 out of 108 sampled municipalities have both public and private providers of basic health care services (the rest have only public providers).

Recent research has identified institutional arrangements as important determinants of the substantial variation we observe across and within countries in the quantity and quality of public services provided.[1] Questions of institutional design range across a number of important topics, including how service providers are paid, the locus of decision-making about capital, and current expenditures and mechanisms for

[1] See Tirole (1994), Savedoff, (1998), and Burki et al. (1998).

accountability. A growing literature also suggests that the incidence of corruption can be affected by modifying incentives that agents face (see Kaufman et al., 2001; and Azmar et al.,2000). Nonetheless, due to the lack of quantitative data on the functioning of institution and facilities, the empirical evidence on the association between indicators of transparent practices and corruption has been limited. In this paper we are able to shed some light on this issue by studying the association between what we take to be a proxy of quality of management - the frequency of written evaluation of personnel – and perceived corruption.

The paper develops as follows. Section 2 provides some country context for the analysis. Section 3 describes the data. Section 4 discusses methodology and empirical results and section 5 concludes.

2. Country context

The Popular Participation reform (referenced here as LLP), adopted in April 1994, was an ambitious decentralization reform that aimed to devolve political and fiscal power to local government and institutionalize mechanisms for local accountability and grassroots popular participation. The reform has been regarded by commentators to have been highly successful in participatory planning, a process of citizen involvement in policy design, implementation and monitoring (see Graham, 1998, Grindle, 2000, Faguet, 2001). A key feature of Popular Participation is that municipal councils are supposed to be kept accountable by Oversight Committees (*comites de vigilancia*), themselves appointed and controlled by territorial base organizations (O*rganizaciones Territoriales de Base,* OTBs) in each municipality. This two-tiered system of checks and balances is meant to facilitate the inclusion of civil society organizations in the process of policy design, implementation, and oversight at the municipal level.

The reform also resulted in the creation of dozens of new municipalities and the expansion of existing municipalities to urban/rural jurisdictions. One hundred and ninety municipalities have been created since 1994, adding to the existing 124. The main effect of this process was to strengthen municipal governments in rural communities. In 2002, close to 90 percent of municipalities and OTBs are predominantly rural. Under the

Popular Participation Law, OTBs are legally registered under one of three categories: peasant communities (*comunidades campesinas*), indigenous communities (*comunidades indigenas*) or neighborhood councils (*juntas vecinales*). Over 15,000 OTBs presently take part in the annual participatory planning process that results in local policy design, implementation and monitoring.

The Popular Participation reform decentralized responsibilities for public infrastructure and equipment to the local level - municipalities are responsible for the maintenance of local health infrastructure and equipment, especially for primary and secondary facilities. They are also responsible for building new facilities and developing basic health networks.

In parallel, the Bolivian government has made concerted attempts to extend health service coverage, particularly to women and children living in rural areas. With the Insurance Program for Mothers and Children (*Seguro Materno Infantil*, Decree 24303) in 1996 and the Basic Insurance Program (*Seguro Basico de Salud, SBS,* Decree 25265) in 1998 the government aimed at increasing the utilization of formal health services by reducing financial barriers to families in accessing these services. Under *Seguro*, children under the age of five and women receive free treatment for a defined set of services that target the major causes of morbidity and mortality among these population groups.[2] Services are free of charge (there are no co-payments). Facilities are reimbursed by local municipal governments for drugs, supplies, hospitalizations, and laboratory exams linked to the delivery of the covered services.[3]

Data collected by the National Health Information Service (SNIS) shows that there have been important gains in the key service indicators for maternal and child

[2] Services covered by Seguro are: *Maternity*: Prenatal care, Preeclampsia and eclampsia, Vaginal delivery with neonatal care, Cesarean section with neonatal care, Postpartum sepsis, Postpartum hemorrhage; *Neonatal*: Asphyxia, Pneumonia, Sepsis; Children under 5 years: Acute Respiratory Infection, Diarrhea, Vaccinations.

[3] The reimbursement rates for covered services are defined by the Ministry of Health based on the average costs of providing these services using an essential drugs list. Reimbursements for other costs, in particular labor and equipment, are not included in the Seguro program. For MOH facilities, salaries are paid by the central government through their local departments; municipalities are responsible for paying other capital costs. Both public and private providers are reimbursed for changes related to seguro services on an ex post basis. Supreme Decree 25265, Article 7 (Coverage of Services) states that the services covered by the *Seguro Basico de Salud* include external consultations, hospitalization, medicines, auxiliary diagnostic tests and follow-up visits. In the case of rural communities without formal health service, the Seguro Basico de Salud covers the additional cost of periodic visits by health personnel and health service costs associated with locally trained, accredited and authorized health agents.

health since the *Seguro* was introduced. Immunization rates for polio, for example, rose some 20 percentage points over the second half of the decade, to 90 percent of one year olds. Table 1 shows that the share of assisted childbirths doubled, to cover just over half of births in 2000. The rate of increase in fourth pre-natal checkups was more modest, rising from one in four to one in three pregnant women over the period.

Even if *Seguro Basico de Salud* has had marked success in extending coverage and improving access to health services, anecdotal evidence suggests that weak governance might have limited its impact. Moreover, we find that the cross sectional variation in perceptions of corruption is substantial. In this work we try to explain this variation by explicitly linking it to proxies for voice/popular participation and measures of good management.

Our measure of corruption is the perceptions of corruption in the local health sector by health care users.[4] Given the ongoing emphasis on local-level governments and their increasing involvement in health care management, focusing our analysis at the municipal level seemed to be a natural choice.

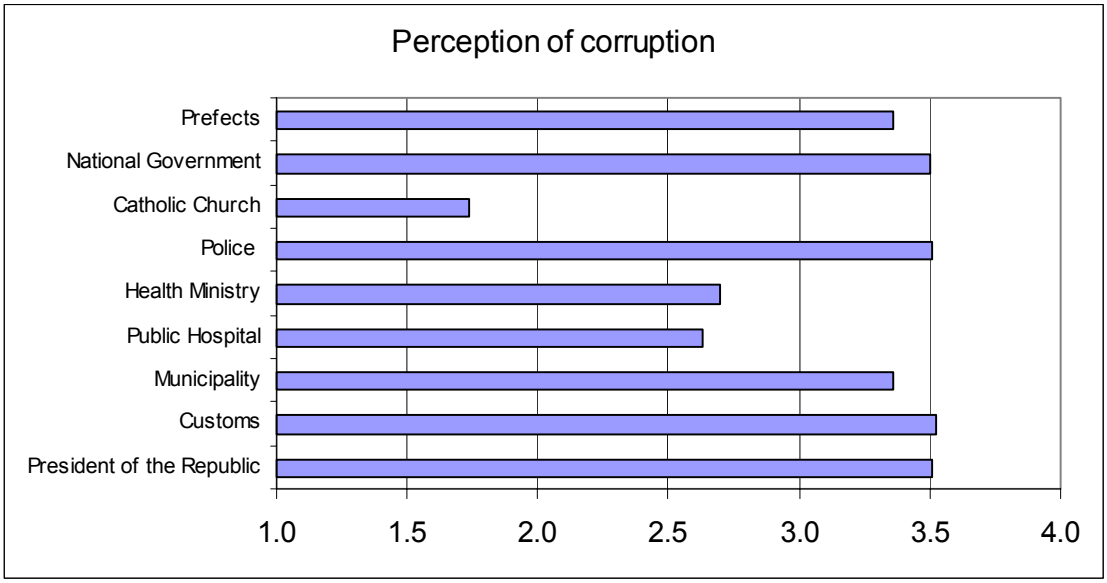
In order to put the econometric investigation into context, three types of comparison are useful: first, comparisons of general perceptions on corruption across various levels of government, to help place health sector corruption within a larger picture; second, comparisons of health sector-specific perceptions on corruption and, finally, comparisons between subjective and objective measures of corruption (e.g. bribes and perceptions on bribes), as well as between different types of subjective measures (e.g., municipal versus health sector perceptions). The comparisons here are based on the data described in the next section.

Figure 1 depicts general perceptions on corruption across different levels of government. We ask health service users to assess the frequency of corruption, defined openly, on a scale running from 1 to 4 (where 1 is "never corrupt" and 4 is "always corrupt"). The responses reveal two characteristics of importance: first, a rough ranking of intergovernmental perceptions on corruption suggests departmental administration to be most corrupt, followed by central government, and municipal government; second, the

[4] Because of our focus on Seguro services, all of our respondents are women.

perception that the health sector, both at national and municipal levels, is less tainted by corruption than other government agencies.

Figure 1
General Perceptions on Corruption
("How frequent is corruption in…?")

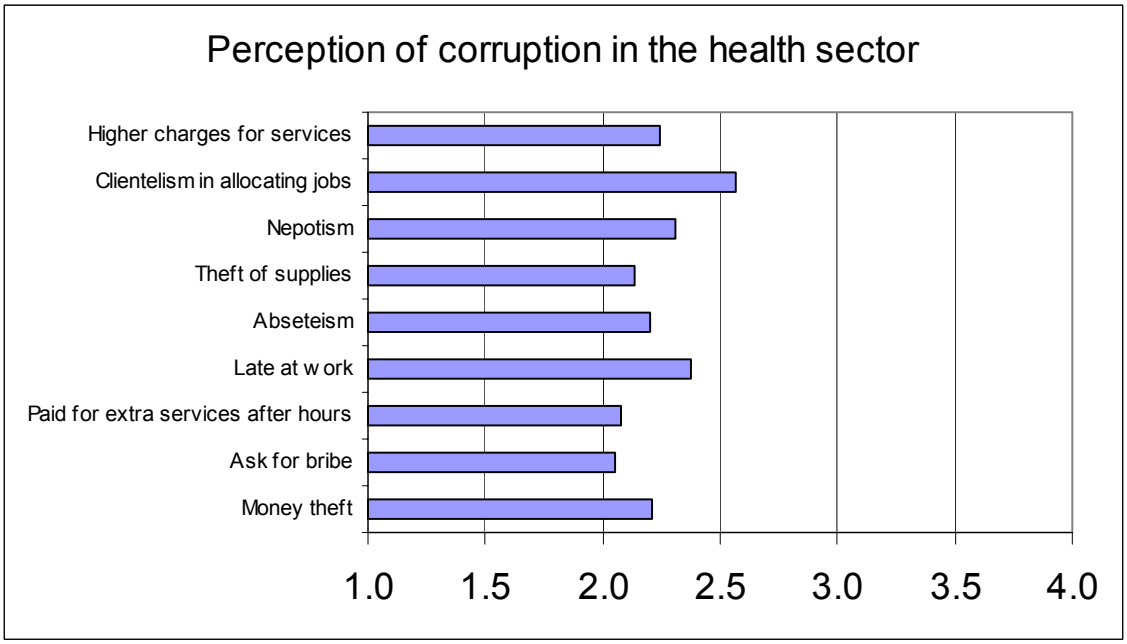


Source: Own survey, 2001.

Figure 2 shows perceptions on corruption in the health sector. Respondents perceive the abuse of political power through political patronage or nepotism to be among the most frequent acts of corruption. Significantly, political, rather than service or management variables are perceived to drive health sector corruption. This observation may reflect a more general pattern of disenchantment with political intermediation in Bolivia at that time (UNDP-Bolivia 2002).[5] Among "non-political" acts, graft is perceived as most important. As defined in the literature, graft is a broad category that includes many forms of action –from straightforward theft to the more general mismanagement of public resources.

[5] In national elections several months after our survey took place, the ruling party lost power.

Figure 2
Municipal Health Perceptions on Corruption
("How frequent are the following acts…?")



Source: Own survey, 2001.

Although perceptions of corruption are routinely used as measures of corruption (see for example Fisman and Gatti, 2002; and Kaufman et al., 2001), it is interesting to know whether they actually reflect underlying bribery practices. In our survey we collected information on informal payments for health services that are supposed to be rendered for free under SBS. Thirty percent of the respondents reported payments. We find the correlation between perception of corruption and size of informal payment to be substantial (0.34), suggesting that perceptions are relatively good predictors of corrupt practices.

A further possible concern is that these perceptions reflect individual views on corruption as opposed to actual occurrence of corrupt practices. Nonetheless, this possible source of bias is attenuated in this context as we associate averages of perceptions over all of the respondents in each municipality (around 20 per municipality) to average values of the relevant explanatory variables.

3. Data Description

The data used in this paper were collected as part of a larger study on decentralization, health and corruption in Bolivia. Three surveys were carried out for three different samples of actors involved in municipal health: a sample of municipal governments, of public health service providers, and of public health service users. The sample of municipalities is stratified by two criteria: (i) the distribution of new and old municipalities, as defined by whether the municipality existed prior to 1994, or whether it came into existence with the Popular Participation Law[6], and (ii) the distribution of poor and non-poor households within municipalities, as measured by the 1992 Basic Needs Index (NBI), so that the sample should be representative of the poor across municipalities.[7] A total of 108 municipalities were surveyed, 51 of which are new (created after 1994) and 55 of which existed prior to the reform. The sample includes municipalities from all of the nine departments (provinces), and includes both intermediate-size cities as well as predominantly rural municipalities.

The sample of health service providers was selected randomly within each municipality. A total of 26 general hospitals (so-called third-level health centers), 51 basic hospitals (second level) and 30 health centers (first level) were covered in order to reflect the range of health service providers in the public sector. For ease of reference, when referring to the range, we use the term "health facilities".

The sample of health service users were in households drawn randomly using the 1992 census municipal household maps for each of the selected municipalities. The samples are representative of the "towns" but not of the surrounding hinterland.[8] For the individual survey, the focus is limited to those services that are provided under the *Seguro Basico de Salud*. A total of 2888 respondents provided information on 1607 cases of services covered by *Seguro Basico* services, with a recall period of one month. The sampling design provided us with a representative sample of female health service users at the municipal government level in Bolivia.

[6] The list of pre-existing municipalities is drawn from Secretaria Nacional de Participacion Popular 1996, *Cifras de la Participacion Popular*, La Paz: SNNP.
[7] The NBI index is drawn from UDAPSO et al 1993.
[8] Unfortunately this 'town bias' is inevitable, because there are no sampling maps for rural households in Bolivia.

Most of the data used in the empirical section are taken from our surveys. When this is the case, the variables are municipality averages of the individual survey data.

Table 2 reports basic sample statistics.

4. Specification and results

4.1 Basic Specification

We first run a basic cross sectional regression of determinants of corruption of the type:

$$HEALTHCORRUPTION_i = \alpha + \beta_0 X_i + \beta_1 EXIT_i + \beta_2 VOICE_i + \beta_3 MANAGEMENTRULES + \varepsilon_i$$

where *i* indexes municipalities. Our dependent variables, HEALTHCORRUPTION, is the municipal average for corruption as perceived by individual users, as described in section 2. At the individual level, HEALTHCORRUPTION ranges between 1 and 4 with 1 indicating that the individuals perceived that the specific corruption practice never occurs in the local health service and 4 indicating that the practice always occurs. HEALTHCORRUPTION is 2.17 on average.

The basic regression includes a parsimonious set of controls for municipal characteristics that were chosen to replicate standard specifications in the cross country empirical literature on corruption (see for example Fisman and Gatti, 2001). Controls include illiteracy rate as from Unidad de Analisis de Politicas Sociales, 1995, (UDAPSO), the (estimated) percent of rural population, and a measure of income per capita. Knowing the problems associated with measuring income with precision, we experimented with different per capita measures – average labor income, average total (labor and other sources) and a proxy for assets (constructed following the methodology by Filmer and Pritechett, 1998).[9] As the proxy for assets performs best, we use it as a control for the level of development in all of the specifications that follows.

[9] The standard of living/wealth index for Bolivian households is constructed from a set of consumer durables (TV, radio, refrigerator, car, etc) as they appear in the questionnaire. Each of these items is coded one if the household owns it and zero if not. All items are used in a factor analysis and using the principle component method the factor scores coefficient is computed. Only the first principle component is retained since it represents the linear combination of the durable items. The factors scores were then used as

To control for systematic differences in corruption across types of facilities, we include the percentage of respondents that had attended last a health post. This variable enters the regressions with a negative and significant coefficient throughout the different sets of estimation. This association is interesting as it still holds after we control for the percentage of rural population, and suggests that health posts - usually small facilities - might be an environment less prone to corruption.

We then add our variables of interest to the basic specification one by one.

We first include a variable indicating how long on average people had to wait to receive a treatment the last time they used health care. We find that waiting time is consistently and positively associated with the perception of corruption. The significance of the variable is not sensitive to the inclusion of regional dummies as well as of some proxies for how crowded the health service is in a specific area, as proxied by doctors per capita and health personnel per capita (as updated from the municipality census of 1996 – columns 7 and 8). Although causal inference in this context are not be warranted, this finding does suggest that here waiting time proxies for (poor) management quality.[10] Results are reported in table 3.

4.2 Exit and Voice

In table 4 we explore the interplay of exit and voice option. To proxy for the presence of alternative venues for health care, we include in the regression the average distance from the hospital - we expect that the lower the density of facilities in a given area, the higher the incentive for corruption since it is structurally harder for patient to opt for an alternative facility. We find indeed that the higher the average time to reach the hospital, the higher the perceived corruption (column 1). Following Gray-Molina et al. (1999), who interpret the presence of private hospitals as an exit option for patients, we include a dummy for whether there is a private facility in the municipality (as reported by the major). We do not find this dummy to be significant. Most likely, to the extent that

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weights, and each household is assigned a score based on the weight of each specific item given that household owns the item (say a TV). The sum of all weights across all items constituted the final index value for each household.

[10] This results mirrors a consistent finding in the literature of corruption that corruption is associating with longer waiting time (see for example Kaufman and Wei, 1999). Moreover, in a related work (Chakraborty et al. 2002) we find that waiting time is positively associated with informal payments for health services covered by SBS.

services in a private facility are provided at a cost, the presence of a private hospital does not represent an effective alternative for health care, especially in areas of high poverty.

We then link corruption to several variables related to voice and participation. The first variable measures whether the respondents in our sample voted in the 1999 municipal elections (VOTED99). This question is useful for assessing the degree of interest in local politics as well as measuring the idiosyncratic preferences (averaged out over municipalities) of our sample of respondents. We also include an alternative measure for voter participation - municipality-wide voter turnout (TURNOUT99), as reported Bolivian Electoral Court data. We then include some variable that are meant to capture the extent of citizen's participation to public life. Following the growing literature on social capital (see for example Narayan and Pritchett (1996)) we build a measure of social capital as the share of survey respondent who report to participate to one or more local organizations (religious, sport, etc.). Finally, we explore whether the presence of OTBs is effective in keeping corruption in check. OTBs are a key actor in the Popular Participation reform. They channel citizen voice at the community level during the policy planning process, are charged with the joint execution of many public works during policy implementation and provide social oversight of policy decisions during both phases. We include in the regression the number of territorial base organizations (OTBs) registered in the municipality. Alternatively, we include the degree of OTB activism (OTB_ACTIVE) as measured by mayoral evaluations.

Results for the estimation are reported in columns 3-7. Neither measure of voters' turnout enters the regression significantly. Similarly, participation to social capital-type activities is not associated significantly with perceptions of corruption. We also find that the mere density of OTBs on the territory is not associated with lower corruption, but that their level of activity - as independently rated by the local mayor - is significantly associated with lower perceived corruption. Although causality inference should be made with caution in a cross-sectional context, this result suggests that voice – when channeled through appropriately active grassroots institutions - can be effective in reducing misuse of public resources.

4.3 Management rules

A growing literature suggests that different management practices - by modifying incentives faced by agents – might significantly affect the extent of corruption. Although an in-depth analysis of theses issues is beyond the scope of this paper, we examine whether a specific management practice - evaluating personnel - is associated with systematic differences in corruption. In the questionnaire we administered to health facilities in the 108 municipalities, we asked the director of the facility whether and how often personnel was evaluated in writing. Out of the 98 responses, personnel was never evaluated in written form in 20 percent of the facilities (evenly distributed among health posts, basic hospital and large hospitals). In 35 percent of the facilities, personnel is reported to be evaluated more frequently than quarterly. When included in the regression, frequency of evaluation is negatively and significantly associated with lower perceived corruption. This association is robust to controlling for the type of facility where the interview occurred and to the inclusion of department dummies. This result suggests that good management practices and control on personnel might be effective in reducing perceived corruption. Results are reported in table 4, columns 8-10.

5. Conclusions

This paper is a first attempt at studying the determinants of corruption at the sub-national level and, in particular, in the health sector.

Using newly collected data from a survey of health care users and health facilities in Bolivia, we study perceptions of corruption in the local health services across 108 municipalities. Although corruption appears to be a pervasive phenomenon in Bolivia, our survey suggests that health services are perceived by users as significantly less corrupt than other public institutions such as central government, the police, and customs. Sample statistics point at a positive correlation between perceived corruption and the incidence of informal (and possibly illegal) payments for basic health services that are supposed to be free as well as a substantial cross sectional variation in corruption across municipalities.

In order to explain the cross sectional variation in corruption perceptions, we focus on two sets of explanatory variables, proxying for i) quality of management in

health facilities; and ii) voice and accountability. After controlling for a basic set of correlates (income, percent of rural population, illiteracy rate, etc.), we find that corruption is significantly associated with longer waiting time to obtain medical procedures while it is lower in those municipalities where facilities implement some forms of consistent monitoring of personnel (in this case, frequent written evaluations). As for voice, we find no association between perceived corruption and the number of territorial organizations (OTBs) that, following the 1994 decentralization reform, are supposed to channel citizens voice into municipal budget planning. Nonetheless, corruption is lower in those municipalities where the OTBs are more active, suggesting that bottom-up accountability can be effective in keeping corruption in check. We also found that the extent of corruption is significantly less at the lowest level/ smaller facilities (health posts), suggesting that this type of provision could improve accountability to the local communities.

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Table 1: Evolution of key indicators for maternal and child health services (%).

	1994	1995	1996	1997	1998	1999	2000
Assisted childbirth	25	27	33	39	42	47	52
Fourth prenatal check-up	23	27	26	28	30	31	33
Pneumonia	26	30	39	68	69	76	89
ADIs	18	19	21	26	29	31	37
DPT3	78	82	71	78	77	85	93

Source: National Health Information Service

Table 2 – Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Corruption	108	2.171776	.3268228	1.234722	2.831746
Labor per capita income	108	2795.237	1325.596	798.6429	7702.796
Total per capita income	108	3071.067	1472.198	798.6429	8585.507
Illiteracy rate (1995)	108	.745463	.147118	.28	.95
Waiting time	108	1.253908	.1807241	1	1.9
Distance to hospital	108	1.187159	.214924	1	2.25
Percent rural population	106	.7008972	.3469558	0	1

Income is in bolivianos, 2001. Waiting time:1=less than 1hr; 2=between 1 and 4 hrs;3= between 4 hrs and one day; 4=more than one day. Distance: 1=less then 30 min; 2=between 30 min and 1hr; 3=between one and two hrs; 4=more than 2 hrs.

Table 3 – Basic specification

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Per cap. labor income	-0.000							
	(0.54)							
Per cap. income		-0.000						
		(1.05)						
Factor for Durable goods(PC)			-0.105	-0.124	-0.142	-0.053	-0.146	-0.142
			(2.65)**	(3.19)**	(3.72)**	(1.26)	(3.45)**	(3.75)**
ILLITERACY RATE (1995)	0.377	0.391	0.296	0.239	0.254	-0.050	0.254	0.205
	(1.50)	(1.57)	(1.28)	(1.10)	(1.34)	(0.27)	(1.07)	(0.99)
Percent rural	-0.339	-0.367	-0.518	-0.523	-0.406	-0.226	-0.382	-0.377
	(3.08)**	(3.25)**	(4.39)**	(4.52)**	(4.19)**	(2.19)*	(3.32)**	(3.68)**
% respondents who attended health post				-0.218	-0.225	-0.056	-0.192	-0.197
				(2.63)**	(2.78)**	(0.65)	(2.14)*	(2.40)*
Waiting time for producers					0.611	0.605	0.600	0.644
					(3.70)**	(3.96)**	(3.43)**	(3.99)**
Department dummies						Yes		
Doctors per cap. (in 1998)							-0.000	
							(0.87)	
Sanitary personnel per cap. (1997)								32.197
								(1.48)
Constant	2.166	2.212	2.285	2.411	1.549	1.717	1.582	1.451
	(8.72)**	(8.75)**	(10.36)**	(11.07)**	(5.46)**	(6.23)**	(4.79)**	(5.19)**
Observations	106	106	106	105	105	105	95	104
Adjusted R-squared	0.19	0.20	0.25	0.29	0.38	0.54	0.37	0.39

Dependent variable is perception of corruption index (1=never corrupt– 4=always corrupt).
Robust t statistics in parentheses* significant at 5%; ** significant at 1%.

Table 4

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Exit				*Voice*				*Evaluation*	
Factor for Durable goods(PC)	-0.118	-0.120	-0.116	-0.133	-0.125	-0.124	-0.113	-0.090	0.09	-0.014
	(3.20)**	(3.19)**	(3.01)**	(3.25)**	(3.17)**	(3.06)**	(2.98)**	(2.29)*	(2.39)*	(0.32)
ILLITERACY RATE (1995)	0.368	0.413	0.211	0.235	0.252	0.241	0.162	0.157	0.143	-0.196
	(1.69)	(1.78)	(0.93)	(1.07)	(1.15)	(1.05)	(0.73)	(0.70)	(0.60)	(0.87)
% rural pop	-0.481	-0.398	-0.502	-0.518	-0.517	-0.522	-0.553	-0.427	-0.39	-0.325
	(4.46)**	(3.30)**	(4.44)**	(4.40)**	(4.47)**	(4.33)**	(4.64)**	(3.50)**	(3.09)**	(2.50)*
% respondents who attended health post	-0.257	-0.289	-0.212	-0.234	-0.207	-0.218	-0.237	-0.207	-0.17	-0.105
	(3.16)**	(3.38)**	(2.57)*	(2.74)**	(2.43)*	(2.65)**	(2.88)**	(2.31)*	(2.09)*	(1.07)
Distance from hospital (time)	0.341	0.335								
	(3.01)**	(2.96)**								
Private health facility in muncip?		0.042								
		(0.65)								
Voter turnout99			0.450							
			(1.19)							
Voted in 1999 elections?				0.224						
				(1.21)						
Participate to association?					-0.075					
					(0.51)					
No. OTBs per cap.						-0.485				
						(0.04)				
OTB active?							-0.145			
							(2.45)*			
Frequency of written evaluation								-0.056	-0.057	-0.039
								(3.44)**	(3.61)**	(2.84)**
Type of facility surveyed									0.04	
									(0.85)	
Department Dummies										Yes
Observations	105	99	105	105	105	105	103	94	94	94
R-squared	0.33	0.32	0.30	0.30	0.29	0.29	0.33	0.35	0.35	0.48

Dependent variable is perception of corruption index (1=never corrupt– 4=always corrupt).

Robust t statistics in parentheses* significant at 5%; ** significant at 1%. Estimation includes a constant (non reported).