Tropentag 2010
"World food system – A contribution from Europe "
ETH Zurich, September 14 - 16, 2010

JUSTUS-LIEBIG-
UNIVERSITAT
GIESSEN

An Inquiry into Causes of Corruption: Instrumental Variable (IV) Approach

Asif Reza Anik, Gunnar Breustedt, Siegfried Bauer

Introduction

According to the Corruption Perception Index (CPI), the level of corruption in Bangladesh has been perceived to be the highest in the world from 2001 to 2004. Though from 2005, Bangladesh has slightly improved her situation, but this is not sufficient enough to say that level of corruption in the country has reduced (Transparency International, 2010).

Transparency International-Bangladesh (2008), estimated that in the fiscal year 2006-07, while interacting with different public service providers:

- 66.7% of households experienced corruption and 42.1% of households had to pay bribe

- Households paid BDT 54.43 billion as bribe which was 1.17% of national GDP.

Most of the literatures on corruption are at macro level and deal with cross country analysis. This gives little insight about the relationship between corruption and individual agents.

Objectives

The broad objective is to identify farm household's socio-economic characteristics that are responsible for differences in the households' corruption experiences and amount of bribe in service delivery entities. The specific objectives are:

- To identify which farm households are more likely to experience corruption; and

- To identify farm household's socio-economic characteristics for which amount of bribe varies among different households for the same service.

Methodology

A total of 210 farm households belonging to 6 different districts of Bangladesh are interviewed. Multistage Sampling Technique is used to select these households.

A probit model is used to identify which households are more prone to corruption. The model is constructed as follows:

$$\text{Pr}\left(y_i = 1 \,|\, x_{1i} \,.....\, x_{ki}\right) = \Phi\left(\beta_1 x_{1i} + \beta_2 x_{2i} + ... + \beta_k x_{ki}\right)$$

Where, Pr is the probability, y_i is the i-th household's experience about corruption (1=experienced), $x_{1i}.....x_{ki}$ are different socio-economic characteristics of the household that may influence corruption experiences.

The following tobit model is used to identify socio-economic factors that may influence amount of bribe z_i paid by the households:

$$z_i = Tobit\left(\delta_1 + \delta_2 x_{1i} + \delta_3 x_{2i} + ...+ \delta_3 x_{ki}\right)$$

Where, z_i is the amount of bribe (BDT) paid by the i-th household while receiving services, $x_{1i}......x_{ki}$ are different socio-economic characteristics of the household that may have impact on bribe amount.

As both the probit and tobit model can be biased due to endogenity, we adopt a 2SLS estimation technique which is most common among different IV approaches. Two variables are used as instruments in both the models: relationship with parties (RPP) and relationship with community organizations (RCO). Our instrumented variable is relationship with public representatives (RPR). The first stage for both the probit and tobit model is as follows:

$$RPR_i = \mu + \gamma_1 RCO_i + \gamma_2 RPP_i + \lambda x_i + \varepsilon_i$$

Here, x_i is the household and community characteristics of the i-th household that may influence corruption experiences and amount of bribe except RPR.

In the second stage, the predicted value of RPR is included as an independent variable in both regressions on the right-handside.

Result and discussions

While interacting with different public service entities, 70.00% of the households experienced corruption.

Bribery is the most common (64.7%) among different forms of corruption; followed by negligence of duties (19.3%) and nepotism (9.2%).

Farm household's annual average bribe payment to different service entities is BDT 1485.59.

Households having relation with UNO office are more likely to avoid corruption than those who have no such relation (IVPROBIT estimates). The UNO office has immense influence as this is the prime authority for implementing and monitoring different government programmes and projects in the respective locality. Such influences can easily be used to enjoy hassle free services.

Rural household's are more likely to experience corruption than their counterparts who live in peri-urban areas (IVPROBIT estimates). Compare to peri-urban areas both public and private services in rural areas are limited. Besides media, civil society organizations, and awareness of people are relatively less in number and effective in rural areas. Absence of anticorruption activities and propaganda make rural households more vulnerable against corruption.

Inquiry into causes behind different amount of bribe shows that only household's cost has positive significant impact on bribe amount (IVTOBIT estimates). This suggests that service recipients' socio-economic status except economic capability to pay bribe does not get consideration whenever they fall on bribery. The rent seekers only discriminate service receipts on the basis of their economic status, as they fall on them heavily to devour higher sum of bribe.

Table 1: Farm household's socio-economic factors influencing corruption experiences (IVPROBIT) and amount of bribe (IVTOBIT)

Regressors	IVPROBIT estimates		IVTOBIT estimates	
	Coefficients	Robust Std. Err.	Coefficients	obust Std. Err.
Dummy of Govt. job (1=HH has member with govt. job)	-.04276	.4477049	867.4938	1489.686
Household head's year of schooling	-.00975	.0211115	-113.3414	72.23688
Expenditure (BDT/per-head)	.00007	.0000642	.5966832*	.2287707
Dummy of location (1=Peri-urban, 0=Rural)	-.42312*	.2147816	-101.7979	775.7356
Relationship variables (1=Have relation)				
Public representatives	-.68620	.5624627	1793.35	2081.693
UNO office	-.76628*	.3924279	-766.5509	1580.976
Other govt. offices	-.22492	.3796439	-1664.138	1285.939
Wald test of exogeneity	1.79		0.08	
Cragg-Donald Wald F statistic	13.99		14.068	
Sargan test statistic	0.001		0.169	
Prob > chi^2	0.0018		0.035	
Durbin-Wu-Hausman	0.5469***		0.97037***	
Number of obs.	209		209	

Note: * significant at 1% level
Source: Field survey 2009.

Conclusions

Corruption notoriously exists in public service delivery organizations and bribery is the most common form of corruption.

Households living in rural areas and without any relation with UNO office are relatively more prone to corruption.

Households with higher per-head expenditure are paying higher amount of bribe.

References

Transparency International (2010). Corruption Perception Index 2009. Transparency International.

Transparency International-Bangladesh (2008). National Household Survey 2007 on Corruption in Bangladesh. Transparency International-Bangladesh.

Contact Address: Asif Reza Anik,, Justus Liebig University, Department of Project and Regional Planning, Senckenbergstr. 3, D-35390 Giessen, Germany.
e-mail: Asif.R.Anik@agrar.uni-giessen.de