Correlates of Corruption in India:
Analysis and Evidence from the States

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Abstract: Several leading indicators of corruption point to a serious problem in India on whole. Yet what explains the substantial variance of corruption levels perceived and experienced by citizens across Indian states? Surprisingly little research in the field has addressed this important question. This analysis elucidates a number of relevant and testable hypotheses from the growing literature on the determinants of corruption and applies them to the case of the Indian states. The estimates of the empirical models show that the level of development – measured both in economic and education terms – and the level of fiscal decentralization are significant and negatively related with levels of corruption. Factors such as income inequality, religious fractionalization, media exposure and whether a state has a bicameral or a unicameral legislature are statistically insignificant.

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Introduction

Corruption in the public sector hinders economic growth (Mauro 1995; Bliss and Di Tella 1997), reduces trust, legitimcay and social capital (Rothstein and Stolle 2008) and leads to greater political instability (Anderson and Tverdova 2003) while systematically hurting the poor, by reducing the efficiency of the provision of public goods to citizens[1]. According to several sources ranking countries on corruption, India, a transitioning country in many respects yet a stable democracy, generally ranks among the middle to lower half of countries surveyed in multiple samples[2]. On its face, relative most other countries, it would seem that India generally has a moderate to large problem with corruption as a country on whole. While this may indeed be the case, as a strong federal country with a relatively high degree of political and fiscal decentralization, corruption levels are not monolithic across the country, and in fact, rent-seeking varies significantly from state to state. For example, while citizens in Kerala and Himachal Pradesh have comparatively limited personal experience with - and low perception of - corruption in their states, the public services in regions like Bihar and Jammu and Kashmir appear to be fraught with rent-seeking. What explains such variation among Indian states?

While numerous recent studies have identified several determinants of corruption at sub-national levels for other federal or semi-federal states such as the United States (Alt and Lassen 2003 and 2008; Glaeser and Saks 2006; Goel and Nelson 1998) Brazil (Ferraz and Finan 2008), Italy (Del Monte and Papagni 2007), India has received surprisingly little focus. As the world's largest democracy and containing 10 states with

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[1] Transparency International Country Report India 2008
[2] For example, in Transparency International's corruption perception index (CPI) of 2008, India ranked 85th out to 180. Similarly, in the World Bank's survey on control of corruption, India was in the 47th percentile in 2007.

populations over 50 million inhabitants, it is critical for scholars and policy-makers to have a better understanding of then problem of corruption within this diverse and populous state.

This analysis seeks to elucidate the determinants of corruption in Indian states by employing the largest in-country survey ever conducted on citizen perceptions and experience with corruption. In 2005, more than 14,000 citizens in 20 of India's 28 states were asked about their personal experiences and perceptions with corruption in the public sector for services that are provided by state-level governments. Upon surveying the literature of the determinants of corruption, I test five hypotheses for which data is available and that appear to apply well to the case of India. Based on the findings in the empirical analysis, I report thee significant factors that receive strong empirical support. One, wealthier states are less corrupt on average. Two, states with higher levels of education are less corrupt than those with lower aggregate levels. Finally, states that are more fiscally decentralized, in that they are more reliant on their own citizens for revenues rather than federal transfers, are less corrupt than those which are more dependent on the federal government for funds.

The remainder of this analysis goes as follows. In the next two sections I review the literature on the determinants of corruption, beginning briefly by discussing the findings of several other studies looking at corruption at the sub-national level. Additionally, in this section I elucidate five testable hypotheses. Next I discuss in detail the survey data which is used as the dependent variable of the study, followed by the data used to test the hypotheses. Subsequently, I report the findings of the cross-section

analysis and show a number of bivariate analyses. I conclude with a summary of the

results and some policy recommendations based on the findings.

Explanations of Corruption in Sub-National Governments

What of course makes the sub-national level of analysis attractive is the idea that

many of the oftentimes complex control variables, such levels of democracy, rule of law,

electoral systems, colonial heritage, press freedom, etc. are somewhat 'naturally'

controlled for by looking at variations in regions within a single country. The drawback

is of course when data is limited to one year (as in the case of the survey data here), the

sample size is restricted to a relatively small number of cases, making sweeping

generalizations based on the results rather unrealistic. Keeping in mind this trade-off,

several recent studies have looked into corruption within federal countries at the

provincial/ state level, most of which focusing on variation within the U.S. states. For

example, along with relative wealth and the levels of bureaucrat salaries, Alt and Lassen

(2003) find that electoral institutions such as campaign expenditure restrictions, direct

initiatives and open primaries all are associated with lower corruption, while thresholds

on direct initiatives are associated with higher levels of corruption in U.S. states on

average. In a further study on the effects of divided verses unified government, Alt and

Lassen (2008) report that divided government along with a separately elected judiciary

are correlated with lower corruption on average, while in the case of a unified

government; a separately elected judiciary has an especially strong effect on curbing

corruption. Looking at the number of corruption convictions in U.S. states, Glaeser and

Saks (2006) find that education, size of the public sector and income levels are associated

less corruption convictions, while income inequality is positively correlated with the dependent variable. Conversely, with respect to the size of the public sector, Goel and Nelson (1998) find that higher state involvement in the economy is associated with higher corruption convictions in U.S. states.

In federal systems outside the U.S., Ferraz and Finan (2008) explore the effect of a recent anti-corruption measure taken by the Brazilian government in 2004 and find that accountability in regions where media consumption was higher on average played a significant role in holding incumbents accountable when exposed for fraud in receiving federal transfers. Francken et al (2005) demonstrate a similar relationship with the media in regions in Madagascar and find that higher media consumption constrains rent-seeking in education programs, and further, in poorer areas, radio consumption is especially effective. In Italian regions from 1963 to 2001, Del Monte and Papagni (2007) find that economic development, party concentration of power, civic organizations, and government consumption all significantly impact the levels of corruption convictions. From this literature, along with a vast cross-section literature on the determinants of corruption, I draw on five hypotheses which I test that are of particular interest and applicability to the Indian states.

Additional Literature and the Hypotheses

1. Higher Levels of Income and Education

In most all studies of the determinants of corruption – whether at the national or sub-national level – studies have found that most affluent and better educated countries or regions are associated with lower levels of corruption. Essentially, the theoretical

foundations for this hypothesis come from Lipset's theory of modernization (Lipset 1960) combined with the standard principle-agent model oftentimes employed in the corruption literature (Rose-Ackerman 1975). Lipset posits that as citizens (the agents) become wealthier and better educated they will be more capable of monitoring their public representatives (the principle). Due to the greater likelihood of being caught, incentives are reduced for politicians and bureaucrats to engage in rent-seeking behaviour. The higher levels of wealth also give more citizens the resources to mobilize and take action against corrupt public officials. This sentiment is essentially echoed by Huntington (1968), in that he claims that in earlier stages of development there are greater opportunities for corruption due to the changes in the socio-economic system of the state. Numerous studies have shown strong empirical support for the impact of income and education on corruption (Treisman 2000; Alt and Lasson 2003; La Porta et al 1999; Montinola and Jackman 2002). We would thus hypothesize that regions in India with greater levels of education and affluence, would, on average, be less corrupt.

2. The Heterogeneity/ Fractionalization Hypothesis

India, a country of 1.16 billion inhabitants, is a country with high levels of ethnic, linguistic and religious diversity[3]. It has two major ethnic groups (Indo-Aryan and Dravidian), 15 official languages and at least 5 major religious (Hindu, Islam, Christianity, Buddhism and Sikh)[4]. Thus a discussion about the effects of heterogeneity on corruption applies quite well in the case of India. As Mauro (1995) argues, regions or countries with higher levels of ethno-linguistic fractionalization might reduce the

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[3] See CIA fact book on India: https://www.cia.gov/library/publications/the-world-factbook/geos/in.html
[4] ibid

likelihood that citizens will oppose or penalize corrupt public officials. Citizens are more apt to back a politician that is of their religion or ethnicity and in return, leaders of various groups might be more inclined to allocate resources in a systematically unfair way to benefit their own ethnic, religious or linguistic group. Several studies have found evidence suggesting that on average, greater diversity is associated with higher levels of corruption (Alesina et al 2003; La Porta et al 1999; Charron 2009). We would thus expect that, ceteris paribus, regions that have greater levels of heterogeneity will be more susceptible to clientalism and politics of division that lead to greater corruption in the public sector.

3. Income Inequality Hypothesis

Although admittedly it is next to impossible to distinguish a distinct causal direction between these two variables, inequality and corruption are expected to be related. Several recent studies have demonstrated a significant relationship between these two variable, with some finding that corruption has a positive effect on income inequality (Gupta et al 2002; Gyimah-Brempong 2002) and others showing support that inequality increases corruption, in particular in democratic states (You and Khagram 2004). The argument as to why these two forces are related is rather strait-forward. In areas that are more unequal, more of the citizens will of course be poorer, which should compel them to pressure the state for greater redistribution, which would come from taxing the wealthier class (Meltzer and Richard 1983). In response to redistributive pressures, the wealthy have greater incentives to engage in political corruption to avoid paying higher tax along with bureaucratic corruption to avoid tax payments. In this scenario, the poorer

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citizens have fewer resources to keep the wealthy in check or monitor their behavior and

are likely to receive poor services such as health and education from the state. They are

thus themselves more likely to be dependent on petty corruption to receive services

because bureaucrats are in a better position to extort them in exchange for basic public

services (You and Khagram 2004). Additionally, You and Khargram (2004) show that in

democracies, inequality is likely to have a greater impact on corruption than in

dictatorships because the wealthier classes are forced to rely on corruption over

repression of the masses. Further, the greater number the poor, the more opportunities

for vote buying during a political campaign. Based on this, we would anticipate that on

average, higher levels of income inequality in Indian states are associated with higher

levels of corruption.

4. *The Effect of Decentralization on Corruption*

The impact of decentralization – whether political, financial or administrative - on

corruption is a hotly contested topic. India is a long-time federal system with state-level

elected official and parliaments which are represented by both national and regional

parties. Today it contains a total of 28 states and 7 unit territories, most of which under

the States Reorganization Act in 1956 were draw around linguistic lines[5]. Each state is

primarily responsible for issues such as law enforcement, education, public works and

services, and hospital care within their borders. On the one hand, Tanzi (2001) and

others argue that fiscal decentralization might lead to greater levels of corruption,

especially in developing countries, because local leaders are expected to be less

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[5] "States Reorganisation Act, 1956". *Constitution of India*. Commonwealth Legal Information Institute.
http://www.commonlii.org/in/legis/num_act/sra1956250/.

competent than those at the national level and might be more prone to clientalism because of closer and more frequent contact with citizens. Moreover, the lines of responsibility are more blurred than in a strict unitary, centralized system, thus voters do become more confused regarding to whom they should assign blame for corrupt politics. Gerring and Thacker (2004) find empirical evidence in a cross-sectional study supporting this argument with respect to political decentralization.

On the other hand, the greater the political or fiscal decentralization, the closer the voters come to their politicians, which should increase accountability, encourage responsible governance and reduce corruption. Provincially elected governments that are more responsible for collecting their own revenues via citizens in their state should be less inclined to rent-seeking than a regional government that is mainly subsidized by the central government – meaning that public officials are less accountable for their funds and policies. Fisman and Gatti (2002) and Gurgur and Shah (2005) find empirical evidence for greater levels of decentralization being associated with lower corruption levels. However, most of the tests of this hypothesis have been conducted using national level data on corruption and aggregated levels of decentralization. India provides an excellent test case in that there are substantial variations in the level of decentralization – especially fiscal decentralization – among the states. Thus it will be fruitful and interesting to test whether greater levels of in-state fiscal responsibility are correlated with higher or lower corruption across the sample.

5. The Media

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Several studies have argued and found empirical evidence to support the idea that countries with greater media access and an independent free press have lower corruption at the national level, *ceteris paribus* (Brunetti and Weder 2003; Lindstedt and Naurin 2005; Ahrend 2002). At the provincial level, Ferraz and Finan (2008) and Francken et al (2005) demonstrate the media's pivotal role in helping curb corruption in certain regions due to higher volume of radio listeners in Brazil and Madagascar respectively. Since this analysis is examining a sample of state within one country, variations in press freedom are expected to be low to non-existent across regions. However, one might expect that states with higher levels of media consumption might have a more informed public on political matters, thus building a population that is better suited to monitor and penalize corrupt behaviour in the public sector.

Data and Research Design

The Survey

The 'Indian Corruption Study' was undertaken by Transparency International (TI) and the Centre for Media Studies (CMS) and released in October of 2005. It is the largest corruption survey ever conducted, with a total of 14,405 respondents, spread over 151 cities, 306 villages within 20 Indian states. The surveyors received between 527 and 960 respondents for each state. In the majority of states, the distribution of respondents is skewed towards urban citizens by roughly a 2-1 ratio (see Table 1).

The focus of the study was on corruption in the public sector. More specifically, it intended to capture the level of 'petty corruption' that the 'common man' faced in obtaining 11 different public services such as: Income tax bureaucracy, municipal services, judiciary, the Rural Financial Institution (RFI), Land Administration, police,

public schools, water suppliers, electricity suppliers, government hospitals and ration-card suppliers. The survey does not contain information regarding the extent to which a business must pay a bribe in order to obtain a permit or the extent to which high level 'state capture'-type corruption exists. However, the content of the survey lends itself quite nicely to a comparison of state-by-state levels of corruption in India in that it is the provincial and local governments in India – not the central government – that mainly provide these services in question. Additionally, another advantage of the survey method in corruption analysis is that it does not rely as much on the comparative strength of the legal systems across states as much as a 'hard measure', such as the number of yearly convictions for example.

The methodology of the survey was also unique in the sense that it based the results on both *perceptions* of petty corruption and actual *experiences* with having to pay 'extra money' to obtain basic services. Secondly, the survey also obtained information regarding the outlook of the service provider. On the later point, the researchers wanted to find out certain aspects of the service providers, such as how monopolistic the services were, how often the bureaucrats interacted with the public, and how essential the services are the average person.

*****Table 1 here*****

Table 1 displays the 11 services in question in the survey and their respective composite score based on the percentage of citizens who had a personal experience with corruption or perceive the service to be corrupt. Clearly, the more 'need based' services provide greater opportunities for rent seeking in India, as roughly half the respondents have personally paid a bribe to a Land Administration or local judiciary bureaucrat and a

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startling 80 percent have had to pay a bribe to law enforcement. While public hospitals, electricity service and PDS department are perceived by a majority of respondents to be corrupt in practice, less than 30 percent have actually had first-hand experience with paying a bribe. In building the composite index, the respondent's experiences and perceptions of corruption in the 11 different public service areas were weighted 60 and 40 percent respectively. Upon compiling all responses from each of the 20 states, the mean score is 4.88 with a standard deviation of 1.04 and the scores range from 2.40 (Kerala) to 6.95 (Bihar), with higher scores indicating higher levels of corruption[6]. Table 2 lists each state's individual score, ranking and urban-rural distribution of respondents.

*** *Table 2 about here* ***

Additional Data

   While the survey data provides the dependent variable in the study, several other sources were used to obtain data to test the five hypotheses. Hypothesis 1 refers to wealth and education as factors that should be associated with lower corruption. Gross state product per capita for each state (in billions of Rupees in 2004-2005) was taken from the *Directorate of Economics & Statistics of respective State Governments* within the *Central Statistical Organization* of India. I proxy education levels in this study with the literacy rate in each state, which was obtained from a survey conducted by the *International Institute of Population Sciences* (IIPS) in India in 2007[7].

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[6] The scores in the survey range from 240 to 695. I divided these by 100 to keep the range from 0-10.
[7] The survey results can be found at: http://www.nfhsindia.org/

To test hypothesis 2, that more diverse states should have higher corruption on average, I constructed a Herfindel Index of religious fractionalization for each state in India based on the census data from 2001. The Herfindel Index is:

$$H = \sum_{i=1}^{N} s_i^2$$
,

 'N' is the number of religious groups (in this case 5 groups – Hindu, Muslim, Christian, Buddhist and Sikh make up approximately 98% of the population according to the census). 'S' is the proportion of each group in each state (squared) and added together. It essentially measures the likelihood that two random people drawn from a particular state will have a different religious affiliation. The index is then subtracted from 1 and has a range of '0' to '1', with higher scores equating higher levels of religious diversity. Because many of India's states were drawn up around linguistic lines, I feel religion was a better measure of diversity within states.

To test hypothesis 3, that greater levels of inequality are associated with higher levels of state-level corruption, I use the within-state Theil-Index of Indian Manufacturing sector wage inequality from the *University of Texas Inequality Project* (Galbraith 2008) from 1998, which is the most recent year available[8]. Higher scores equal greater levels of income inequality.

Hypothesis 4 discusses the potential impact that greater levels of decentralization might have on corruption. The concept of decentralization has been difficult at times to pin down in the literature, and there appears to be no universally accepted measure. Some studies on the effect of decentralization on corruption operationalize it as the ratio of non-central to central public employment (Gungar and Shah 2005), the share of non-

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[8] For complete details, see: http://utip.gov.utexas.edu/data.html

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central government expenditures of total expenditures (Fismand and Gatti 2002), the presence of sub-national political units (Treisman 1999; Gerring and Thacker 2004) or the number of competing jurisdictions (Arikan 2004) for example. I choose to measure decentralization in this study as the ratio of each state's self-generate revenue to their total revenues. There are several advantages to this measure. One, it demonstrates the level of fiscal independence (or dependence) each region has from (or on) the central government. Two, states that are using locally generated tax dollars to pay for local government projects and serves should in theory feel like they are more directly accountable for the performance and quality of the output of such services. Conversely, state government that receive a high proportion of their revenues via federal transfers are for all intents and purposes spending the tax dollars of citizens in other regions of the country, and thus the link between the tax-payers and state governments is less direct than in states with a higher proportion of in-state generated revenues. The data on Indian state revenues is taken from Roa (2001).

Hypothesis 5 discusses the impact that the media has on corruption. Since the study is at the state-level, we would not expect variations in press freedoms across state lines to be significant, since the Indian constitution renders Freedom of the Press implicit in the guarantee of freedom of speech and expression[9]. Thus we would expect that the press' impact on corruption would come from variations in *access* to the media across states. From the same survey that the IIPS completed in 2007, I take two measures. First, I take the percentage of people who responded that they are exposed to the media at least once a

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[9] In Article 19(1)(a) of the Indian Constitution. In several court cases the high court in India has ruled in favor for universal freedom of the press though the constitution does not explicitly discuss it. For example: *Brij Bhushan* v. *State of Delhi*, AIR 1950 SC 129; *Express Newspapers Ltd.* v. *Union of India,* AIR 1958 SC 578; *Sakal Papers Ltd.* v. *Union of India*, AIR 1962 SC 305; *Bennett Coleman Co.* v. *Union of India*, AIR 1973 SC 106

week (via newspaper, radio or television). Second, I take the percentage of household television ownership.

Finally, India's states vary significantly with respect to size and population. To control for these differences, I include the proportion of urban residents in each state along with the population density.

Results

In table 3, I show a multivariate test of the hypotheses, which uses Ordinary Least Squares (OLS) cross sectional analysis for 20 Indian states in 2005. Each model is estimated with robust standard errors. Additionally, standardized beta coefficients are reported to display the relative impact that each explanatory variable has on the dependent variable (see Table 4). The first model serves primarily as a baseline test, though I do include variations in income across states to test for part of H1. As anticipated, wealthier states are on average less corruption and coefficient is significant at the 99% level of confidence. An increase in per capita yearly income by one standard deviation is associated with a lower corruption score by .06, or roughly 5% of one standard deviation of the dependent variable. The standardized coefficient however, shows the impact of the GSP per capita variable to be by far the largest in model 1 (-.89). Regarding the control variables, the more urban a state is, the more corruption on average, yet while the population density increases, the findings show that this is associated with lower corruption.

Table 3 about here

Table 4 about here

Model 2 tests the relationship between literacy rates and corruption, controlling for population demographics across the sample. The relationship is strongly significant and as anticipated, literacy rates have a negative relationship with the dependent variable. In fact, according to the standardized coefficients, the impact of a one unit increase of literacy rates is 70 times larger than the other variables in the model. Between the results of model 1 and 2, hypothesis 1 receives strong empirical support.

Models 3 and 4 test the impact of religious fractionalization and income inequality on corruption respectively. I keep the control variables from models 1 and 2 and include GSP per capita as a control variable as well. The coefficient for religious fractionalization is in fact in the opposite direction as anticipated, yet far from statistically significant. Income inequality in model 4 is in the expected direction in that its sign is negative, yet the coefficient fails to reach the accept level of significance for safe interpretation. However, in these two models, GSP per capita remains a strong predictor of corruption levels even with the inclusion of these two additional variables.

Models 5 through 7 test the effect of decentralization and media exposure on the dependent variable. To avoid problems associated with multicollinearity[10] due to a strong correlation between decentralization and GSP per capita (see appendix for descriptive statistics and correlation tables), I substitute literacy rates as a control in place of GSP per capita. Decentralization shows to be a strongly significant estimator of corruption in India, with more self-reliant states having less corruption on average. Conversely, corruption is higher in regions that are more reliant on federal transfers for their revenues.

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[10] There are of course no issues of bias regarding multicollinearity, only that it inflates the standard errors of the models such that the significance of the coefficients in question may be underestimated.

This demonstrates evidence for the idea that a state government will be more accountable to citizens and will be more apt to provide better services because of the more direct fiscal relationship between the tax-payers and sub-national government. In models 6 and 7, I test whether greater exposure to the media and TV ownership have any significant relationship with levels of corruption. According to the model, there appears to be no relationship between the proportion of TV owners in a state and the dependent variable (model 6) and while the variable capturing the amount of citizen media exposure (model 7) is in the predicted direction, it fails to reach statistical significance.

Of the five hypotheses, H1 and H4 received strong empirical support among the Indian states, meaning that greater affluence, higher literacy rates and greater levels of decentralization are all associated with lower levels of corruption in the sample. Figures 2, 3 and 4 graph each of these two-way relationships with a 95% confidence interval around the predicted line to provide a visual of how well the sample fits the predicted relationship.

Figures 2 – 4 about here

Conclusion

This analysis has explored the relationship between five common explanations of corruption within the literature with corruption levels in Indian states using recently released survey data from 2005. It has been the first study to systematically explore variations in levels of perceived and experienced corruption of everyday citizens in the world largest democracy. Due to an admittedly limited amount of data – especially with respect to the dependent variable – a cross-sectional analysis was employed here with 20

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of the 28 Indian states. Of course it would be imprudent to make hard and fast sweeping generalizations about the problems India faces with respect to corruption based solely on these findings. Thus it would be best to take these results into consideration, yet in a cautious manner.

With this caveat in mind, the econometric results of the study reveal several factors are systematically related with corruption in Indian state. One, as many studies have shown prior to this analysis at both the central and sub-national level, wealthier states are less corrupt on average. The Indian sample is no different in this respect. The result is robust to a number of different model specifications throughout the analysis. Two, states that provide better education (measured with literacy rates in the analysis) are less corrupt on average. A more literate public is better equipped to monitor the behavior of public officials. Together, these two results show strong empirical evidence for H1 in the case of India - that the hypothesis derived from Lipset (1960) and Huntington (1968) speaking to levels of modernization – applies strongly in this context. Three, states that are more decentralized and fiscally independent are less corrupt on average. Regions that are less dependent on the central government for their revenues are shown to provide better services and have more satisfied citizens. State governments receiving less of their revenues directly from the citizens and more from the central level via transfers display more opportunities for rent-seeking in that these regional leaders might feel less of a responsibility to provide quality services to citizens.

From these results, we can derive two policy recommendations. Although it is unrealistic to simply tell a government to 'grow economically', the findings do suggest that more literacy though education and more fiscally independent state governments are

less corruption. Such measures should be taken into consideration in future fights to curb opportunities for rent-seeking in the public sector. In addition, in the future, TI plans to do another round of surveys. With the enactment of the 'Right to Information Act' of 2005, which intends to force public utilities and services to make their transactions with customers transparent to the public, future research will be able to tell if such a law has had any significant impact on citizens perceptions or experiences with corruption.

While India on whole may score lower on income, education levels and corruption relative to other democracies, there is high degrees of variation *within* the country that is clearly overlooked when ignoring differences among the states themselves. This study – as well as others that have looked into variations in government performance and corruption at the sub-national level – highlights the importance of expanding this discussion beyond the scope of national politics.

Sources

Ades, Alberto, and Rafael Di Tella, "Rents, Competition, and Corruption," *American Economic Review,* LXXXIX (1999), 982–993

Ahrend, Rudiger 2002. Press Freedom, Human Capital and Corruption. DELTA Working Paper No. 2002-11

Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. 2003. Fractionalization. *Journal of Economic Growth* 8:155-194.

Anderson, Christopher J. and Yuliya V. Tverdova. 2003. Corruption, Political Allegiances, and Attitudes toward Government in Contemporary Democracies. *American Journal of Political Science*, Vol. 47, No. 1: 91-10

Arikan, G. Gulsun . 2004. Fiscal Decentralization: A Remedy for Corruption? *International Tax and Public Finance*. Volume 11, Number 2 / March: 175-195.

Alt, James and David Lassen, The political economy of institutions and corruption in American States, *Journal of Theoretical Politics* 15 (3) (2003), pp. 341–365

Alt, James and David Lassen. Political and Judicial Checks on Corruption: Evidence from American State Governments. *Economics & Politics*, Vol. 20, Issue 1, pp. 33-61.

Bliss, Christopher, and Rafael Di Tella, "Does Competition Kill Corruption," *Journal of Political Economy,* CV (1997), 1001–1023.

Brunetti, Aymo, and Beatrice Weder. 2003. A free press is bad news for corruption. *Journal of Public Economics* 87:1801-1824

Charron, Nicholas. 2009. Government Quality and Vertical Power Sharing in Fractionalized States. *Publius: The Journal of Federalism,* (forthcoming)

Del Monte, A. Papagni, E., (2007), The determinants of corruption in Italy: Regional panel data analysis. *European Journal of Political Economy* 23(2): 379-396

Ferraz, Claudio and Frederico Finan 2008. Exposing Corrupt Politicians: The Effects of Brazil's Publicly Released Audits on Electoral Outcomes. *The Quarterly Journal of Economics*. Vol. 123, No. 2:703-745

Fisman, R. and R. Gatti. 2002. Decentralization and corruption: evidence across countries. *Journal of Public Economics* 83:325-345..

Francken, N, B Minten, JFM Swinnen, K Mercierlaan. 2005. Listen to the Radio! Media and Corruption: Evidence from Madagascar.

Gerring, J. and Strom C. Thacker. 2004. Political Institutions and Corruption: The Role of Unitarism and Parliamentarism. *British Journal of Political Science* 34:295-330

Glaeser, E. L., and R. Saks, "Corruption in America," *Journal of Public Economics* 90(6) (2006), 1053–1073.

Goel, Rajeev and Michael Nelson. 1998. Corruption and government size: a disaggregated analysis, *Public Choice* 97 (1):107–120

Gurgur, Tugrul, and Shah Anwar, "Localization & Corruption: Panacea or Pandora's Box?" (January 2005). World Bank Policy Research Working Paper No. 3486.

Gupta, Sanjeev, Hamid R. Davoodi, and Rosa Alonso-Terme. 2002. "Does Corruption Affect Income Inequality and Poverty?" *Economics of Governance* 3(1): 23-45

Gyimah-Brempong, Kwabena. 2002. Corruption, economic growth, and income inequality in Africa. *Economics of Governance*. Volume 3, Number 3: 183-209

Huntington, Samuel P. 1968. Political Order in Changing Societies (New Haven, CT: Yale University Press).

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1999. The Quality of Government. *Journal of Law, Economics and Organization* 15 (1):222-279

Lindstedt, Catharina and Daniel Naurin 2005. Transparency and Corruption. The Conditional Significance of a Free Press**.** Working paper: *Quality of Government Institute*, Göteborg Sweden

Lipset, S. M. 1960. Political man: the social bases of politics. (2nd ed. 1981). Baltimore: Johns Hopkins University Press

Mauro, Paulo. 1995. Corruption and growth, *Quarterly Journal of Economics* 110: 681–712

Meltzer, Allan H., and Richard, Scott F. 1981. "A Rational Theory of the Size of Government." *Journal of Political Economy*. 89 (October): 914-27.

Rao, M. Govinda. 2001, "Fiscal Decentralization in Indian Federalism", processed, Institute for Social and Economic Change, Bangalore.

Rose-Ackerman, Susan. 1975. The economics of corruption, *Journal of Public Economics* 4, pp. 187–20

Rothstein, Bo and Dietlind Stolle. 2008. The State and Social Capital: An Institutional Theory of Generalized Trust. *Comparative Politics*. Vol. 40 Issue 4 Page 441-467

Tanzi, V. (2001) 'Pitfalls on the Road to Fiscal Decentralization', Carnegie Endowment for International Peace Working Paper, 19, Washington DC: Carnegie Endowment

Transparency International. 2005. India Corruption Study 2005. Published by Transparency International India Lajpat Bhawan, Lajpat Nagar IV, New Delhi

Treisman, Daniel, "The Causes of Corruption: A Cross-National Study," *Journal of Public Economics,* LXXVI (2000), 399–457.

University of Texas Inequality Project. 2008. http://utip.gov.utexas.edu/about.html

You, Jong-sung and Khagram, Sanjeev. 2004. Inequality and Corruption. Hauser Center for Nonprofit Organizations Working Paper No. 22; KSG Working Paper No. RWP04-001
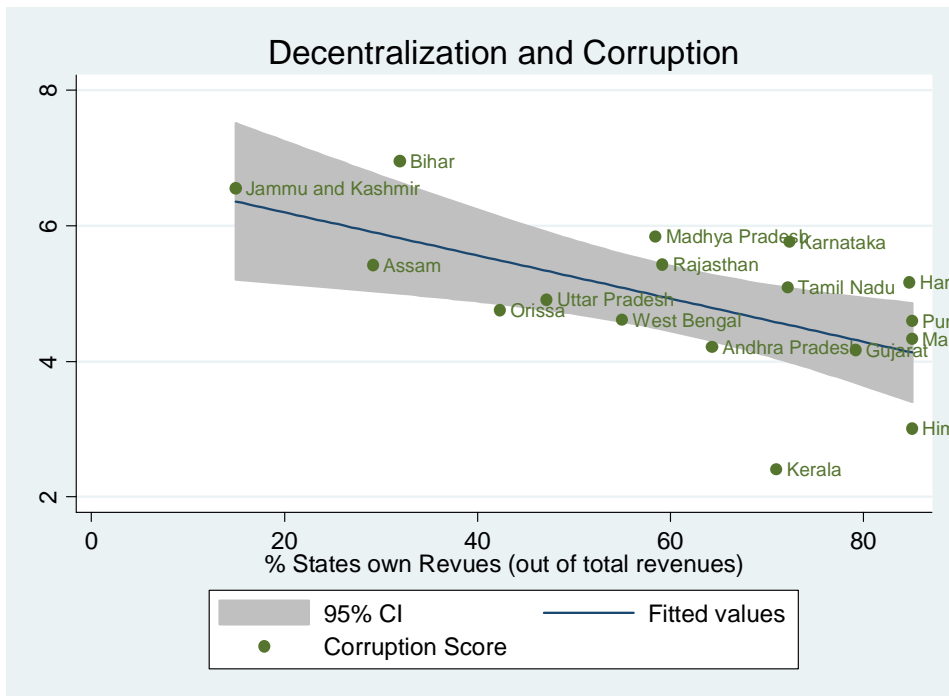
Figure 1

Figure 2

Literacy Rates and Corruption in Indian States

Figure 3

Decentralization and Corruption
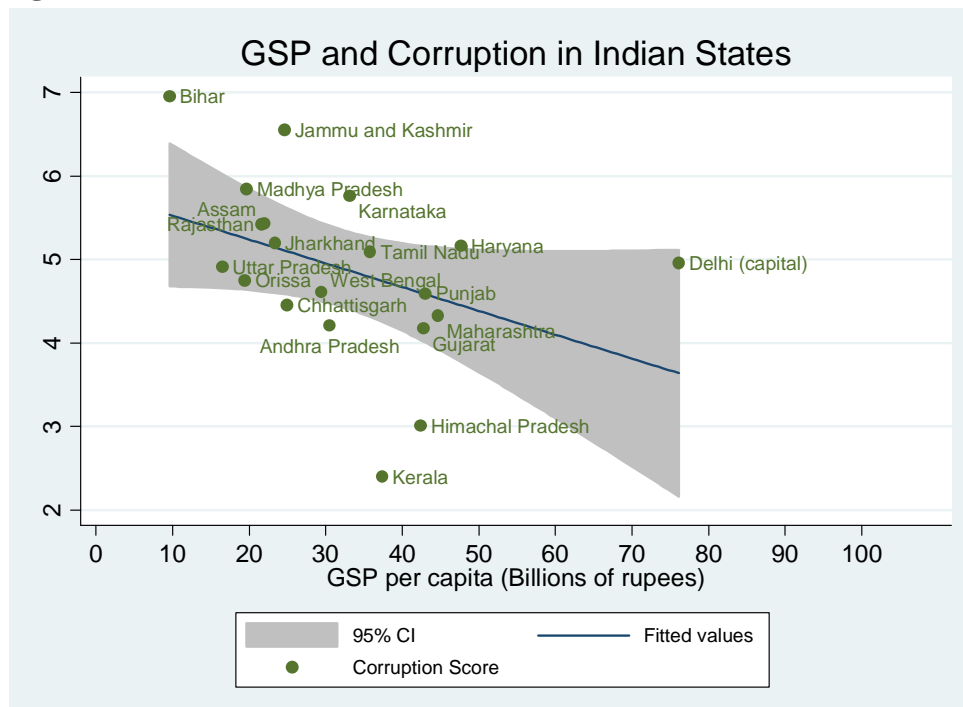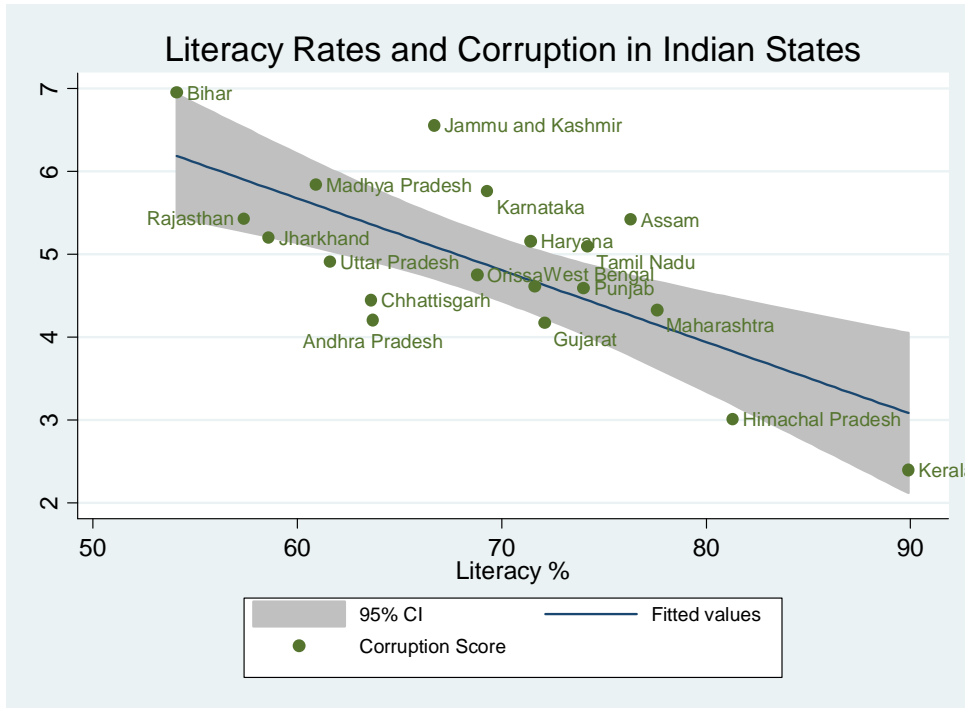
Table 1: 11Services with respective experience and perception scores with corruption

Services	Composite Index	Experience	Perception
Need Based			
RFI	22	19	25
Income Tax	35	20	62
Municipal Services	47	23	75
Judiciary (lower court)	59	47	81
Land Administration	59	48	79
Police (crime/ traffic)	77	80	88
Basic			
Schools (primary/ secondary)	26	18	45
Water supply	29	9	56
PDS (ration cards)	37	16	62
Electricity	39	20	67
Public Hospitals	42	27	67

Note: Figures under 'experience' and 'perception' are in the percentage of respondents that either have actually paid a bribe or perceive the service to be corrupt respectively.

Table 2: Composite Ranking of States and Make-up of Respondents

Rank	State	Composite Corruption Score	Rural	Urban	Total
1	Kerala	2.40	253	455	708
2	Himachal Pradesh	3.01	208	418	626
3	Gujarat	4.17	276	466	742
4	Andhra Pradesh	4.21	226	441	667
5	Maharashtra	4.33	318	565	883
6	Chhattisgarh	4.45	208	331	539
7	Punjab	4.59	276	470	746
8	West Bengal	4.61	301	519	820
9	Orissa	4.75	222	521	743
10	Uttar Pradesh	4.91	339	621	960
11	Delhi	4.96	137	456	593
12	Tamil Nadu	5.09	337	461	798
13	Haryana	5.16	256	497	753
14	Jharkhand	5.20	208	319	527
15	Assam	5.42	242	473	715
16	Rajasthan	5.43	261	481	742
17	Karnataka	5.76	249	540	789
18	Madhya Pradesh	5.84	244	450	694
19	Jammu & Kashmir	6.55		555	555
20	Bihar	6.95	283	512	795

Table 3- OLS Regression Model

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Controls							
Urban-Rural Population		0.0002**	0.00004	0.0003**	0.0003**	0.0003	0.0005	0.0005
		(2.87)	(0.16)	(2.62)	(2.73)	(0.46)	(0.45)	(0.46)
Population Density		-0.154***	-0.043	-0.106	-0.091	-0.068	-0.109	-0.104
		(-3.02)	(-0.68)	(-1.31)	(-0.84)	(-1.15)	(-1.06)	(-1.14)
GSP per capita	H1	-0.062***		-0.063**	-0.071***		-0.068*	-0.061*
		(-3.25)		(-3.17)	(-3.01)		(-1.93)	(-1.91)
Literacy Rate	H1		-0.086***			-0.074***		
			(-4.01)			(-3.01)		
Religious Frac.	H2			-0.104				
				(-0.11)				
Income Inequality	H3				0.046			
					(1.21)			
Decentralization (revenues)	H4					-0.021**		
						(-2.75)		
TV ownership	H5						-0.0006	
							(-0.12)	
Media Exposure	H5							-0.011
								(-0.42)
Obs.		20	19	20	18	17	19	19
R²		0.35	0.51	0.36	0.47	0.47	0.4	0.4
Prob > F						.0004		0.03

Note: OLS regressions run with robust standard errors (t-statistics in parentheses).
p<.10, p**<.05, p***<.01*

Table 4 - Standardized Coefficients

	Urban ratio	Density	GSP p.c.	Literacy	Key IV
Model 1 (GSP per capita)	0.55	-0.23	-0.89***		
Model 2 (Literacy rates)	0.01	-0.009		-0.72***	
Model 3 (Religious Frac.)	0.55	-0.23	-0.89**		-0.019
Model 4 (Inequality)	0.56	-0.2	-0.99***		-0.34
Model 5 (Decentralization)	0.06	-0.14		-0.59***	-0.4**
Model 6 (TV ownership)	0.13	-0.23	-0.7*		0.009
Model 7 (Media Exposure)	0.12	-0.22	-0.62*		-0.11

Variables, Sources and Descriptive Statistics

Variable	Description	Source	Mean (St. dev.)
Corruption	level of experienced and perceived corruption in 20 Indian States (survey data - 2005)	Transparency International	4.88 (1.04)
GSP per cap.	Gross state product per capita (2004 - in Billions of Rupees)	Central Statistic Organization of India	35.91 (22.41)
Inequality	Theil-Index of manufacturing wage inequality within each Indian state (1998)	University of Texas Inequality Project	12.29 (8.51)
Literacy rates	Percentage of population that is literate (2007)	IIPS	71.41 (9.35)
Decentralization	The proportion of self-generated revenues for each state of the total revenues (1998)	Rao (2001)	52.38 (28.59)
Religious Fractionalization	A Herfindel Index for each state based on the distribution of 5 religious groups (2001)	Author - from the Indian 2001 census	.338 (.201)
Television ownership	Proportion of household that own a TV (2007)	IIPS	48.43 (15.59)
Media exposure	Proportion of population who claim to be exposed at least once a week to TV, radio or newspaper media (2007)	IIPS	80.85 (10.19)
Urban/rural pop.	Total urban over the total rural population (2001)	Central Statistic Organization of India	3.27 (2.23)
Pop. Density	Number of people per square kilometer	Central Statistic Organization of India	879.5 (2015.96)
Legislature	Equals '1' if bicameral, '0' if unicameral	Indiastat.com	.21 (.41)