# Bribecaster: Documenting Bribes Through Community Participation

**Manas Mittal**
UC Berkeley Computer Science
387 Soda Hall
Berkeley, CA 94720 USA
mittal@cs.berkeley.edu

**Wei Wu**
UC Berkeley Computer Science
Berkeley, CA 94720
weiwu@berkeley.edu

**Steve Rubin**
UC Berkeley Computer Science
387 Soda Hall
Berkeley, CA 94720 USA
srubin@cs.berkeley.edu

**Sam Madden**
MIT CSAIL
32 Vassar St
Cambridge, MA 02139
madden@csail.mit.edu

**Björn Hartmann**
UC Berkeley Computer Science
533 Soda Hall
Berkeley, CA 94720 USA
bjoern@cs.berkeley.edu

## Abstract

Corruption is endemic in many emerging economies – many transactions of private citizens with government institutions require payment of bribes. While well known as a general phenomenon, specific data about the "bribe economy" are hard to come by. But such data are needed for rational responses to corruption at the societal and individual level — to expose it; to know which offices to avoid; or to know how much to pay if other recourse is not available. In response to a corruption survey of 102 Indian participants we are developing *Bribecaster*, a mobile application that enables citizen collection and curation of corruption data. A key research question is how to create a system that has accurate data while simultaneously protecting users from repercussions of having their identities revealed.

## Keywords
Privacy, Crowdsourcing, Mobile Applications, Corruption

## ACM Classification Keywords
H5.m. Information interfaces and presentation, K.4.1 Public Policy Issues, J.4 Social And Behavioral Sciences

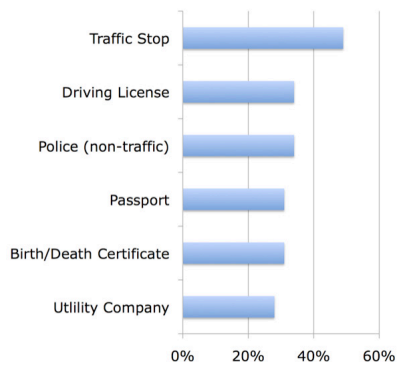## General Terms
Human Factors, Design, Economics

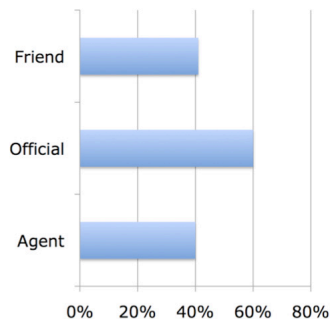**Figure 1**: Common transactions that required payment of bribes.



**Figure 2:** Common sources that provide information about bribe amounts.

## Introduction

A significant percentage of the world's population lives in developing countries and corruption is a major problem in many such countries. For example, India has made fighting corruption a key component of its development strategy [1]. Corruption is a two-sided problem. People in positions of power demand bribes for performing or expediting work. Individuals and corporations pay these bribes; payments are often considered part of normal business practices in the developing world [1,4]. Quotidian corruption frequently involves paying petty bribes to low and mid-level officials, e.g., in law enforcement, government offices, or to tax and license inspectors [1].

Many efforts to stem corruption focus on punitive action against corrupt officials. This top-down approach does not currently work in most developing countries [6]. *Could a bottom-up approach — where citizens exchange corruption information with each other — be more effective?* We conducted a formative corruption survey of 102 Indian participants; results indicate that individuals who have had to pay bribes are open to reporting corruption information. Our research investigates whether bribe market transparency can be achieved by a confidential bribe-reporting application.

We are developing Bribecaster, a mobile application that enables community members to anonymously report their interactions with government functionaries. Reporting has two principal benefits: First, surfacing information about the bribe market can empower individuals to make rational choices (e.g., deciding to seek out a different office, or deciding how much to pay)[7]. Secondly, transparency can draw public attention to egregious violations. Such scrutiny might ultimately lead to a decrease in corruption levels. We are initially targeting India, because of our team's experience; India's significant English speaking population; and its democratic government, which should be receptive to anti-corruption measures [5].

## Formative Survey

We deployed a formative survey to gain insight about the prevalence of corruption in India; the propensity to report and share information about it; and the current technology environment. The survey was deployed on Amazon Mechanical Turk, which has a large Indian workforce. We collected 102 responses over 2 days, paying each participant $0.25. Our results have a potential bias: survey respondents may be more technology savvy than the general population. However, we do not believe that participants will show systematic bias on corruption behavior.

*Results: Most Respondents Pay Bribes*
90% (92/102) of respondents indicated that they had given bribes in the past. Further, over 82% (84/102) identified specific individuals to whom they had paid bribes. Figure 1 shows transactions that often required bribes. These data indicate that corruption is pervasive.

*Respondents Use Outside Information To Price Bribes*
We asked participants about how they determined the right amount of bribe to pay. 60% (56/92) of those who paid a bribe indicated the official provided a number; 41% indicated that their friends told them the amount, and 40% indicated that a middleman (commonly referred to as "Agent") told them the appropriate amount (Figure 2). The 'value' delivered by the agent is in knowing who to bribe, and how much.
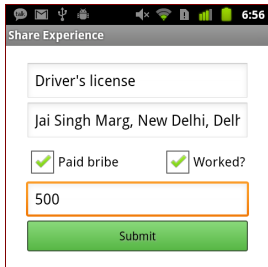
**Figure 3:** The Bribecaster reporting UI solicits structured bribe reports.



**Figure 4:** Icons show corruption sites in the Bribecaster map interface.

Such information could also be obtained through a crowdsourced database of bribe reports.

*Respondents Already Share Their Bribe Experiences*
We next asked about existing forms of information exchange. 52% had told friends or relatives about paying bribes because they felt bad about the transaction; 34% told others to keep them informed. Only 14% did not report paying a bribe because they felt embarrassed. The high level of informal sharing, and the low level of embarrassment about paying bribes suggest that users may be willing to share information electronically.

*Respondents Are Wary of Anonymous Information*
When explicitly asked if subjects would anonymously report bribes through a website or mobile application, 58% responded positively. Would respondents use anonymous bribe information? Of those who had valid answers, 22% indicated yes, while 78% indicated no. More people are willing to report bribes than are willing to use this information. We speculate that this result maybe due to a lack of trust in anonymous reporting. We conclude that the tradeoff between trust and anonymity is a key design consideration.

*Appropriate Communication Technologies*
Over 97% of respondents had a cell phone, although only 35% had Internet access on the phones. 85% of respondents had Internet access at home (a number likely skewed high by our methodology). Amongst those who owned smart phones (51/102), 51% used Nokia; 20% iPhones, 14% Blackberrys and 16% Android devices. We expect Android share to rapidly grow as other manufacturers adopt the OS; large volumes of $80 Android phones have sold in Kenya [8].

**The Bribecaster Prototype**
Bribecaster currently targets the Android platform; we are also developing a web application to provide access to a wider user base. Users can **report** a bribe on a map of nearby offices (Figure 3). Users can **browse** the list of reviews on a map and by office or task (Figures 4-6). Finally, users can **search** the list of reviews. The following scenario demonstrates Bribecaster's functionality:

Hari lives in New Delhi, India, and has to get his new driver's license. His instructor in the driving school tells him that "nobody passes without paying a bribe", and that the instructor can facilitate the bribe of Rs. 1000. While outside the instructor's office, Hari opens the Bribecaster application and searches for "DMV Delhi." He sees that there are 4 offices in Delhi. Hari finds out that most people in the nearby DMV office paid Rs. 600 to Rs. 2,000 for licenses. Several people noted that they had failed multiple times until they paid. But another DMV office (marked with a green color) has a much lower average and people report getting a license without a bribe. Hari heads to that office and passes the test without having to pay. He opens Bribecaster and clicks a thumbs-up button to endorse the reviews of the office as accurate.

**Implementation**
BribeCaster is implemented as an Android client to a server running the web.py framework. The server maintains a list of offices and bribe instances, indexed by locations and offices. MySQL is used as a backend database. The client phone uses HTTP Get/Post requests and receives JSON responses. Existing locations, offices and activities are suggested to the user as they type, making it easy to enter information
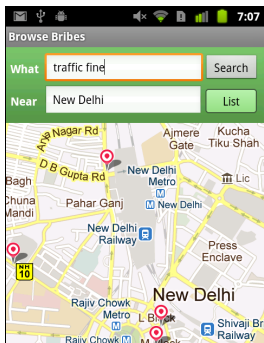
**Figure 5**: The browsing interface, *browsing by office at a location.*



**Figure 6**: The browsing interface, *browsing by list of offices at a location.*

and discouraging duplicate entries. The Google Places API is used to bootstrap the office names database.

The key design tradeoff is between **anonymity** (to avoid retribution for reporting) and **trustworthiness** (to avoid slander or other false information). Bribecaster does not require an explicit user login, but instead uses one-way hashes of the phone's UID (Unique Identifier). This makes it difficult for anyone, including administrators, to identify a phone based on the UID. The approach establishes an implicit login without revealing identity. Each user can write one and only one report per task per office.

## Related work

IPaidABribe.com [7] is a website for collecting bribe-related citizen information, and Bribespot [9] is an iPhone app for similar purpose. Both these applications focus on reporting bribes, but don't provide help when users have to pay a bribe. These applications also do not address the tension between anonymity and trust.

The ICT4D space is rich with examples of using cell phones as computing platforms for social good. Researchers have used phones in the developing world for data collection [2], and for broadcasting information, e.g., for urban sex workers in India [3].

## Conclusions

In this paper, we present Bribecaster, a mobile application to enable users to anonymously share their experiences with quotidian corruption in the developing world. In ongoing work we are developing mechanisms that preserve user privacy while retaining fidelity and trustworthiness of the reviews.

## References

1. Bertrand, M., Djankov, S., Hanna, R., and Mullainathan, S. *Does corruption produce unsafe drivers?* National Bureau of Economic Research Cambridge, Mass., USA, 2006.
2. Parikh, T.S. and Lazowska, E.D. Designing an architecture for delivering mobile information services to the rural developing world. ACM Press (2006), 791.
3. Sambasivan, N., Weber, J., and Cutrell, E. Designing a phone broadcasting system for urban sex workers in India. *Proceedings of the 2011 annual conference on Human factors in computing systems*, (2011), 267–276.
4. Treisman, D. What have we learned about the causes of corruption from ten years of cross-national empirical research? *Annu. Rev. Polit. Sci. 10*, (2007), 211–244.
5. Polling the Nations. Pew Research Survey, October 20th, 2010.
6. Transparency International Annual Report 2010.
7. I Paid a Bribe. www.ipaidabribe.com.
8. $80 Android Phone Sell Like Hotcakes in Kenya, the World Next? http://singularityhub.com/2011/08/16/80-android-phone-sells-like-hotcakes-in-kenya-the-world-next/.
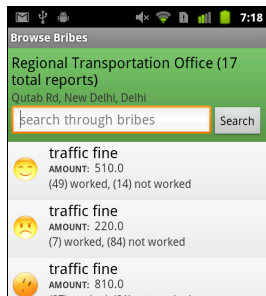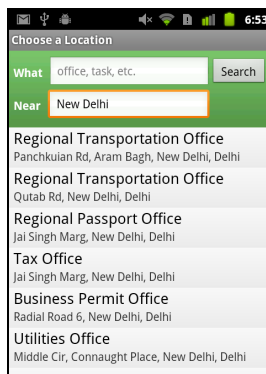9. Bribespot. Bribespot.com.