

DISCUSSION PAPER SERIES

IZA DP No. 14130

**Republic of Beliefs: An Experimental
Investigation**

Utteeyo Dasgupta
Fatos Radoniqi

FEBRUARY 2021

DISCUSSION PAPER SERIES

IZA DP No. 14130

Republic of Beliefs: An Experimental Investigation

Utteeyo Dasgupta

Wagner College, NYC, CIPS, Fordham University and IZA

Fatos Radoniqi

Whittier College

FEBRUARY 2021

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Republic of Beliefs: An Experimental Investigation*

The success of a country's anti-corruption policies can crucially depend on the citizens' beliefs about the existing legal environment. We test this key idea of Basu (2020) using a novel design which systematically manipulates beliefs of participants in an experiment. Our results suggest that Basu's "Republic of Beliefs" idea provides a critical insight in policy formulation; Merely introducing an anti-corruption law is not sufficient in aiding the country towards the desired equilibrium, especially in developing countries, where the existing legal enforcement machinery has severe scopes of leakages.

JEL Classification: C91, K42

Keywords: republic of beliefs, asymmetric punishment, harassment
bribery, experiment

Corresponding author:

Utteeyo Dasgupta

Wagner College

1 Campus Rd

Staten Island, NY 10301

USA

E-mail: utteeyodasgupta@gmail.com

* We are grateful to Whittier College for financial support and University of Pristina for access to student subjects.

1. Introduction

Formal models of law and economics have been a part of the economics discourse for a long time (Coase, 1960; Becker, 1968). Law and economics research has focused on different aspects of corruption and often its implications for economic development (Mauro 1995, Svensson 2003, Tresiman 2007, Shlefer and Vishny 1993, Jong-Sung and Khagram 2005 to name a few).

Curiously, in spite of a rise in anti-corruption policies across the world, the experience of the past half a century suggests that the anti-corruption policies have met with mixed success. While some countries have witnessed a steady decline in corruption, others have seen minimal dents (Polinsky and Shavell 2000, Chalfin and McCrary 2017), and countries like Latin America have actually witnessed a jump in the last decade (World crime trends UNODC). It is important to note here that the defining framework behind a typical anti-corruption policy rests along the Beckerian framework of crime and punishment (Becker 1968). This law-and-economics framework adopted by the legal machineries focus on changing incentives in designing anti-corruption policies and look for ways to increase the costs of breaking the law or lower the benefits of doing so.

Basu (2015, 2020) provides an interesting take on explaining the modest success of the crime-prevention policies. He suggests that a critical element that can contribute to the success of this traditional expected-cost-benefit framework is just assumed to hold true in the models of law-and-economics. In fact, the anti-corruption policies rest on the assumption that once a law is enacted violators will *automatically* be put to justice. If one pauses however, to wonder, who is in charge of enforcing the law – the answer would be that an enforcer waiting in the wings, ready to mete out justice whenever an unlawful activity is detected. Here lies the problem; Basu argues that it is assumed in the classical law and economics framework that the enforcer acts like a mere robot who detects and implements the law without fail

whenever required. This belief actually goes deeper in a chain. In fact, the power of this model of crime and punishment lies in the understanding that everyone needs to believe that the police will act judiciously, failing which the local court will act appropriately, failing which the chief justice can act appropriately, and so on. In this paper, we test this central idea of the importance of beliefs about the legal system and its impact on law and order in a laboratory experiment.

Laboratory experiments testing efficacies of anti-corruption policies is relatively new (see Abbink and Serra, 2012 for a review). It has gained prominence due to the convenience of controlled manipulation of the lab environment to better understand incentives along with the role of culture, institutions, and preferences. For example, results from laboratory experiments have revealed that propensities to punish corrupt behavior and propensities to engage in corrupt behavior are norm dependent and can vary across countries (Alatas et al. 2009, Cameron et al. 2009, Abbink et al. 2018, Banerjee 2016a, Banerjee 2016b). Laboratory experiments also provide a low-cost alternative in evaluating the effectiveness of a policy before indulging in a full-fledged field roll-out (Abbink 2006, Banuri et al. 2008, Banuri and Eckel 2012, Dasgupta & Dimant 2018), and provide potential directions for new policy formulations. For example, Barr and Serra (2009) find that when private citizens are made aware of negative externalities of corruption they are reluctant to offer high bribes. Serra (2012) finds that a combination of bottom-up monitoring along with a top-down auditing can be highly effective in preventing corrupt behavior. Basu's (2011) proposal of an asymmetric punishment regime in mitigating harassment bribery,¹ lead to experiments in evaluating its efficacy and feasibility (Abbink et al. 2014, Engel, Görg, and Yu 2016, Banerjee and Mitra 2016).

¹ Bribes are frequently exchanged for delivering entitled services such as admission to a public hospital or approval of a passport. Basu (2011) characterizes such exchanges as *harassment bribes*. In this case although the officials cannot deny services legally, they can aggravate delivery or threaten to delay the service beyond a point where it becomes useless to the citizen. Developing countries are particularly prone to this type of bribery.

We propose a novel experiment to test whether a republic of beliefs is critical in deciding the success of corruption policies. In particular, we take advantage of existing homegrown beliefs about corruption among our subject population (Cárdenas 2000; Cárdenas & Ostrom, 2004) along with the induced-beliefs-and-payoffs-from-actions framework (Smith 1989) that allow us to test the central idea. Our results suggest that Basu's main insight holds. If one can guarantee that there are no leakages in oversight and everyone plays the role they are expected to play, then anti-corruption policies can have their desired effects. However, as soon as one brings in scopes of leakages in one's duties, for example possibilities of bribes etc. then the disciplinary effects of an enacted law breaks down, and in our experiment subjects fall back upon their existing home-grown beliefs in deciding their optimal choices.

2. Role of the Republic of Beliefs

The Republic of Belief idea proposes that a law has the potential to change behavior and outcomes *provided* it can change beliefs about what other people may or may not do in response to the breach of an enacted law as a best-response based on their beliefs. Basu writes, "The might of the law even though it may be backed up by handcuffs, jails, and guns, is in its elemental form, nothing but a structure of beliefs carried in the heads of all the people in society from the ordinary citizenry to the police, politicians and judges intertwining and reinforcing one another..." And so, the success of an enacted law is dependent on this *Republic of Beliefs*. The underlying logic is reminiscent of Havel's (1978) essay expounding the nature of a communist regime. He takes the example of an emperor being able to strut around wearing nothing while pretending to be wearing new clothes as long as everyone agrees and *acts as if* he indeed is wearing new clothes! However, he points out that this system of coordinated behavior under such false beliefs can easily break down as soon as a single person breaks ranks and shouts to point out the reality about the naked king! A similar

system of beliefs and coordinated actions are crucial to uphold the might of an anti-corruption law, and here lies the potential for a leakage.

Although the law as typically written focuses exclusively on the costs and benefits of breaking the law for the perpetrators, in reality, the game played out involves not just the law-breakers but the law-makers and other players of the judicial system in the chain, a complete “Game of Life” (Basu, 2020). Failing to model all relevant players creates a hiatus between the implicit assumptions in the model and the explicit reality during actual policy roll-out. Even after enacting a law, if all relevant decision-makers behaved the way they did before the law was enacted, then everybody would continue to get their previous payoffs even after the law was put in place. The mere writing down of the law need not change the payoffs and hence behavior (Basu 1993). For example, a speedster can continue to go over a newly enacted speed limit, if he assumes that the policeman will not catch him, and the policeman will look the other way if he assumes that his salary will not be affected as long as the local court looks the other way, and the local court will look the other way as long as the supreme court looks the other way and so on! Those familiar with it will probably recognize that this is a typical experience faced in many developing countries.

2. Experiment

This important theoretical proposition is far too complicated, if not impossible to test using a typical field experiment involving policy roll-outs. It involves changing the beliefs of decision-makers along the chain with experimental control and precision for a subset of the population. A laboratory experiment however has the potential to provide a path forward. There are two critical elements needed to evaluate the central proposition of the Republic of Beliefs in the laboratory.

First, we need to be able to credibly establish beliefs about the celerity and reality of an impending punishment whenever a law is broken. This is straight forward and regularly

done in laboratory experiments while testing efficacies of different anti-corruption policies (Abbink and Serra 2012). Second, we need to manipulate beliefs in such a way that even though there is a law in place, whether all players in the game will abide by it or not is doubtful. We take advantage of existing home-grown beliefs of participating subjects to incorporate this second feature. In particular, we chose to run our experiments in Kosovo, an Eastern European country where levels of corruption and impunity among the presumed upholders of law are very high. Typically, the judicial and public official appointments are long –term which exacerbates the impunity even more. Transparency International Global Corruption Barometer (2013) points out that judiciary is recognized as the most corrupt institution in Kosovo. The Corruption Perceptions Index routinely scores Kosovo in low 20s (where 0 represents the highest level of perceived corruption and 100 the least). Previously commissioned reports from the United Nations Office on Drugs and Crime (2011, 2013) while looking into actual experiences of corruption in Kosovo find in a survey that 37% admitted to paying a bribe and 56% believe that corruption is on the rise sparing no institutions; Further bribes are often explicitly requested by corrupt public officials (50% of cases), and citizens do not report it because they perceive it to be useless as nobody would care (35%), or they stand to receive a benefit from it (18%), or it is a common practice (14%) or simply because they give bribes voluntarily as a sign of gratitude (14%).

In a very perceptible way the legal system is dysfunctional in Kosovo. One important innovation in our experiment is using this particular institutional background and consequent home-grown beliefs of participant subjects about an abusive legal system prone to manipulations by people in public offices. In the Treatments section we describe how we make use of such beliefs in our experiment.

All our experimental sessions were conducted in Pristina, Kosovo, with students at the University of Pristina. Two hundred and eighty-eight subjects participated in the experiment and received an average payment of 14.5 Euros.

2.1 Treatments

We use the Harassment Game (Abbink et al. 2014), a simple sequential-decision two stage game between an Official and a Citizen where the Official is in charge of delivering a legally entitled service to the Citizen (see Figure 1). Although the Official is obliged to grant the service, he has the discretion to deny or delay it and ask for bribes in exchange (and hence the name Harassment Game). The citizen can refuse to pay, but that comes with a very high cost. In stage 1, the official can opt out of bribe taking ($B=0$) and provide the service to the citizen or ask for a bribe $B>0$ from the citizen. In stage 2, if the Official asks for a bribe, then the Citizen has three choices: (1) *refuse* to pay the bribe, (2) *pay quietly*, or (3) *pay and report* the bribe. Paying quietly, or paying and reporting both lead to a probabilistic discovery of bribery and the final payoffs in these two cases depend on whether the act was discovered or not. If the act is discovered the participants are punished by means of a fine. Further, the act of bribery is more likely to be discovered if the citizen has reported the bribe demand. In what follows we use the same parameters and payoffs as in Abbink et al. (2014).

Our three main treatments are as follows: In the baseline *Symmetric* punishment treatment, giving a bribe is punishable if discovered, for the bribe-giving Citizen as well as the bribe-taking Official (See Figure 1). A backward induction analysis of the game suggests that the monetary incentives are such that the Citizen faced with a bribe demand will always pay quietly. The Official anticipates this and chooses his best response - demand the maximum possible bribe (Abbink et al., 2014).

In Treatment 2, the *Asymmetric* punishment, we introduce Basu's (2011) asymmetric leniency approach where the Official is fined if corruption is discovered, but the Citizen has

immunity; in addition, she has a strict monetary incentive to report the bribe since it is returned to her if corruption is discovered (See Figure 2). Incentives change in a way that the Citizen would always like to “pay-and-report”. The backward induction logic predicts that Official’s best response is not asking for a bribe. The important thing to note here is that in both these treatments celerity of punishment is guaranteed and automatic, whenever corruption is discovered, by virtue of the experiment design. Hence the legal consequences of breaking a law are credible outcomes to subjects.

Our primary treatment of interest is the *Disbelief* treatment, which is unique to this paper (See Figure 4). Here we explicitly bring in the possibility of neglect in duty by the upholders of law. To do that we add to the *Asymmetric* treatment a third player, a Judge, who has the final power to influence the outcome of the game. Additionally, the corrupt official has the option to influence the Judge, and the Judge in turn can *Grant Favor* or *Deny a Favor* (See Figure 2). Granting a favor essentially increases the probability that the legal system turns a blind eye towards the corrupt official and consequently the probability of the corruption not being discovered increases to 80%. We assume that there is no monetary cost to the Judge for granting or denying a favor. Neither is there an additional monetary benefit for granting the favor in this one-shot game since the Judge always keeps the bribe (if offered) whether he grants or denies the favor. Using backward induction, we find this game has two equilibria. The judge can always choose to do due diligence and deny favor and uphold the law; In that case we are essentially back in the *Asymmetric* treatment equilibrium where the Citizen would always like to “pay and report,” and the Official believing that should refrain from demanding bribes. In a second equilibrium, the Judge always turns a blind eye and grants favor to the official, leading the official to ask for bribes with impunity, and offering a share to the Judge, while the Citizen “pays and reports” in vain. To put it in the context of Basu’s framework, if all participants believe in a world where all legal rules are

automatically implemented, i.e., law-makers uphold the law like automatons, then the citizen should always expect the judge to deny favor and uphold the law, especially since doing so involves no monetary costs for the Judge, and consequently we should expect reduced corruption typical to an asymmetric punishment environment. The critical difference now from the earlier *Asymmetric* treatment is that whether crime will be punished or not based on the law depends crucially on whether upholders of the law are ready to do their job; celerity of punishment for breaking the law is not guaranteed anymore, and so, home-grown beliefs of our subjects come into play. Basu's discussion of a focal point (2020, pp. 43) assumes particular relevance in this stylized treatment where it is indeed the Republic of Beliefs that can push the outcome of the game to one or the other equilibrium above.²

Our fourth and final treatment, the *No refund* treatment (see Figure 3) removes the strict monetary incentives of Citizens from whistle-blowing. We introduce this to explicitly evaluate a criticism by Dreze (2011) on the impracticality of returning bribes to citizens. It remains open to empirical investigation whether Citizens burnt by the extortion would be willing to blow the whistle even without a monetary incentive. Previous experimental results cannot comment on the issue by design (Abbink et al. 2014). We provide a clear treatment comparison to see whether one can depend purely on moral positions to report the bribe when there are no monetary benefits from reporting. Notice, in many ways this is the minimum requirement to reject Dreze's criticism since Citizens in our game do not have costs of reporting (which in real life citizens might incur). So, if moral indignations would drive reporting behavior in the real world where there might in fact be reporting costs, it certainly should show up in our treatment. On the other hand, if we do not find sufficient evidence of Citizens reporting without strict monetary incentives we must consider supplemental policies that can encourage whistle-blowing (Apesteguia et al., 2006; Jha, 2015).

² One can of course think of the Judge incurring moral costs when turning a blind eye to grant the favor and then the utility from such actions will be strictly dominated for sufficiently high moral costs even though the monetary payoffs are the same.

Based on the analysis above we have two behavioral propositions: 1) The *Asymmetric* punishment treatment, where punishment is automatically meted out, reduces corruption compared to a *Symmetric* punishment treatment, 2) In the *Disbelief* treatment, where Judges can influence final outcomes, corruption worsens in spite of an asymmetric punishment regime since participants with their home-grown beliefs from Kosovo believe that punishment is not automatically implemented anymore, and a law is at best “ink on paper”. Table 1 describes the corresponding testable hypotheses.

2.2 Procedure

We had about 30 students in each of the 8 experiment sessions (see Table 2). Each subject participated in only one treatment and were randomly assigned to one of the roles. Similar to Abbink et al. (2014) we used contextual language. After reading the instructions, subjects participated in a short quiz allowing us to verify their comprehension of the instructions and the experiment. We used a strategy method where subjects were asked to fill in decision-sheets for every situation they could be in during the game. This allowed us to gather choices for all possible decision nodes, including those that are not reached in the path of play. After subjects had made their choices, the experimenter collected the decision-sheets. The subjects were then asked to complete a survey questionnaire while the experimenter matched decision sheets randomly between roles to determine payoffs. Subjects collected their payoffs in a sealed envelope with their ids written on it to minimize any scrutiny effects and this payoff protocol was explained to subjects before they started the experiment.

3. Results

Figure 5 (Panel A) presents the percentage of officials who asked for bribes. We find that bribe demands go down significantly between the *Symmetric* and the *Asymmetric* treatments (p value=0.01), and we reject the null hypothesis $H1_{NULL}$ (See Table 1). However, when the Judge is added to the game in the *Disbelief* treatment making it closer to the “Game of Life,”

bribe demands go up again. We find a significant difference in Official's behavior between the *Asymmetric* and the *Disbelief* treatments (p value = 0.02) but no significant difference between the *Symmetric* and the *Disbelief* treatment (p value = 0.8). Consequently, while H_{3NULL} is rejected, we fail to reject H_{5NULL} . Figure 5 (Panel B) presents the percentage of Citizens "paying and reporting". It suggests that subjects playing in the role of Citizens choose to best respond in anticipation of Officials' behavior; "Paying and reporting" goes up significantly in the *Asymmetric* treatment compared to the *Symmetric* treatment (p value = 0.03). However, it goes down significantly in the *Disbelief* treatment compared to the *Asymmetric* treatment (p value = 0.03). We reject the H_{2NULL} and H_{4NULL} . Results from the mean tests provide support for Basu's main insight on the Republic of Beliefs.

Although we do not explicitly measure first-order and second-order beliefs, subject choices under the different treatments provide us meaningful insights. When we induced and established credible beliefs about the certainty of punishment in the *Asymmetric* treatment, it encouraged whistle blowing behavior among Citizens, and Officials best responded to increased "paying and reporting" by demanding bribes less often. In particular, the second order beliefs of Officials clearly are affected in anticipation of how Citizens will react to their bribe demands. However, as soon as we bring in a third party (the Judge) who can potentially be bribed, even though the Judge has no material incentive to look away from corruption, Citizens behave in anticipation, and so do Officials. Here again of particular interest is Official's behavior and what that suggests about their second order beliefs about the Citizens' choices. Note our experiment design purposely makes use of the home-grown beliefs about a faulty legal machinery where corruption is rampant, upholders of law do not automatically do their jobs, and kick-backs are commonplace. Without the automatic punishment mechanism in place (as in the *Asymmetric* treatment), Citizen-subjects now doubt whether the Judge will do his job credibly in line with their existing beliefs about the system they live in; Officials'

increased bribe demand indicate changes in their higher order beliefs and suggest that they believe they can influence the judges even if Citizens report the act. Interestingly, recent research points out that trust between corrupt actors support socially detrimental cooperation even when a deal is unenforceable (Jiang, Lindemans and Bicchieri 2015, Jiang 2015). This is in fact the case between the Official and the Judge in our game, where the former in no way can enforce a favorable decision from the Judge, and neither does the Judge have any additional monetary benefits from approving or denying the request since he receives the bribe independent of his decisions. Consequently, even though there is an explicit law in place, players in the game do not believe that all relevant decision-makers will do uphold the law credibly, and the enacted anti-corruption policy loses its teeth in pushing the economy and all its players towards the desired equilibrium.

We follow up on our mean difference results using a Probit regression examining the determinants of Official behavior, controlling for demographic characteristics obtained from our post-experiment survey (see Table 3). Results confirm our earlier observation that *Asymmetric* liability decreases the likelihood of bribe demand compared to the baseline situation of *Symmetric* liability. Chi-square tests for mean differences in treatments indicate further that Official's behavior is significantly different between the *Asymmetric* and the *Disbelief* treatments. Consistent with previous literature we find that male subjects ask for more bribes than female subjects (Alatas et al. 2009; Frank, Lambsdorff and Boehm 2011; Lambsdorff and Fink 2006).

To investigate Citizens' behavior in a regression framework, we estimate a Multinomial Logit model where Citizens' choices are a function of the amount of bribe demanded, controlling for their age and sex (See Table 4). We find that irrespective of the treatment, a one-ECU increase in the bribe-demand significantly increases the relative-risk-ratio of being in the "refuse to pay" group compared to being in the base comparison group of

“pay quietly.” For example, in the *Asymmetric* treatment, a one ECU increase in the bribe-ask leads to an increase in the RRR of the subject being in the “refuse to pay” group compared to the “pay quietly” group by a factor of 1.03 (see row 2, column 1 of Table 4). Similarly, except in the *Symmetric* treatment, a one ECU increase in bribe-demand significantly increases the relative-risk-ratio of being in the “pay and report” group compared to being in the base comparison group of “pay quietly” in other treatments. These results suggest that increases in bribe demands invoke two types of reaction from the Citizens; Either they take a moral stand and “refuse to pay,” or they “pay and report” as long as it is an *Asymmetric* punishment institution where justice is automatic. The pairwise tests of treatment differences further confirm that “pay and report” behavior goes up significantly in the *Asymmetric* treatment in response to bribe demands in contrast to the *Symmetric* treatment. Further, while there is no difference in average Citizen’s “refuse to pay” behavior between the *Symmetric* and *Disbelief* treatments, the “pay and report” behavior suffers a significant decline in the latter.

Finally, a comparison of behavior in our *Symmetric*, *Asymmetric* and *No refund* treatments extends and clarifies a critical point on the harassment bribery literature (Abbink et al., 2014).³ To evaluate the role of a monetary incentive for encouraging “paying and reporting” behavior among Citizens, the authors compared an asymmetric punishment treatment with strict monetary incentives for whistle-blowing with an asymmetric punishment treatment where there was no strict monetary incentive for whistle-blowing, and in addition, the corrupt Officials could retaliate to harm the whistle blowing citizens. Abbink et al. (2014) suggested that this contrast provides the strongest test in evaluating the effects of removing the strict monetary incentives for reporting and whether that weakens the disciplining effects of the asymmetric punishment. While they conclude weakened

³ Drèze (2011) had pointed out that from a practical perspective, refunding bribes can be complicated and difficult. Without the enticement of a monetary incentive, weak prosecution rates coupled with its slow delivery especially in developing countries such as India are significant barriers against whistle blowing.

disciplining effects of removing the strict monetary incentives, their treatment comparison cannot explain whether the effects they found were due to the removal of strict monetary incentives, or due to the provision for official's retaliations since both change together in their design. In contrast, our *No refund* treatment does not return bribes to the Citizen even though it is an asymmetric punishment environment and that is the only thing that changes from the *Asymmetric* treatment. Our results indicate that there are no differences in the Official's behavior between the *Asymmetric* and the *No refund* treatments (See Table 3, Chi-square tests). Further, the logit estimates of Citizen behavior also confirm that there are no difference in subject's "pay and report" behavior with and without the strict monetary incentive (Chi square tests for *Asymmetric* vs. *No refund*, Table 4). We take this as evidence that even when there are no strict monetary incentives, and it is impractical for a government to refund the bribes, a sense of revenge or moral indignation can foster higher levels of whistle-blowing from the Citizens as long as they have immunity (asymmetric punishment) and they believe that reporting is credible in punishing the errant official.

An interesting point to note here is the choice of "refuse to pay." Even though refusing to pay is very costly to the Citizen, about 20% of them choose that option. Recent experimental work on norms suggest that there are often underlying inhibitions and an intrinsic desire to uphold certain moral codes of conduct (Abbink et al. 2018, Banerjee 2016a, 2016b). The UNODC 2010 report on Corruption in Kosovo in fact reveals that there is some resistance to bribery and about 12% of the residents indicated that they refuse such demands. We followed up with a social norm elicitation survey about corruptions in Kosovo on a group of participants different from those who participated in the experiment. We implemented the Krupka & Weber incentivized procedure (2013) where each participant was asked questions on how subjects participating in the experiment would view choices in the game and rate each alternative available as either "very socially inappropriate", "somewhat socially

inappropriate”, “somewhat socially appropriate”, or “very socially appropriate.” These were transformed into scores of -1, -1/3, 1/3, and 1 respectively. Figures 6 presents average Social Appropriateness Rankings. We find that there is a stronger support towards refusing to bribe compared to paying and reporting, and judges influencing decisions seem strongly unacceptable. This is consistent with subject behavior in the experiment where there is a consistent proportion of subjects who deny a bribe demand across all our treatments.

We end our results section with a few of interesting parallels between our results and Abbink et al. (2014) which are worth noting, especially since our experiment was run in a country with a very different institutional and cultural history compared to India (where Abbink et al. ran their experiment). First, we find that in the *No refund* treatment, in spite of imminent payoff losses, there seems to be a strong sense of revolt towards corruption, especially in response to increases in bribe demands, as subjects often switch from “pay quietly” to “refuse to pay” similar to their findings. Second, while the SPNE of the Harassment game (Abbink et al. 2014) predicts that Officials should ask the maximum amount whenever they choose to ask for bribes, Abbink et al. (2014) found an interesting behavioral quid-pro-quo between the Officials and the Citizens and the average amount asked by the Officials were always lower than the maximum possible amounts which in fact were not optimal given actual reporting behavior of the citizens. In contrast, we find that conditional on demanding a bribe the Officials asked for the maximum amount or close to the maximum amounts to compensate for the higher propensities of Citizens’ “pay and report” behavior especially in the *Asymmetric* treatment. This is in line with the theoretical predictions of Basu, Basu and Cordella (2016) which looks at a generalized structure of asymmetric punishment mechanisms.

4. Conclusion

We designed a novel experiment to test the key proposition of the Republic of Belief idea proposed by Basu (2015, 2020) in explaining the modest success of anti-corruption policies. Our treatments, first establishes the efficacy of asymmetric punishment mechanism in curbing harassment bribery; it contrasts that result with a treatment where in spite of having the same law in place, the law loses its effectiveness due to the scope of participants not believing in the legal system. Our results provide clear support to the “ink on paper” problem originally described in Basu (1993) and demonstrates that passing a law on its own is not sufficient to change behavior unless it has the potential to change decision-makers’ beliefs along with it. To move a society towards a better equilibrium after a law is enacted, members of the society must believe that any breaking of the law will be punished, and all upholders of the law will perform their jobs of upholding the law without fail. If this belief is not sustainable, as in our Disbelief treatment, then in spite of an existing or newly implemented law, decision-makers might ignore its directives and go about doing their businesses as if the law never existed. Our experiment also adds to the growing literature on the issue of replicability and robustness of conclusions from laboratory experiments (Clemens 2015, Camerer et al. 2018) by following up on the Abbink et al. (2014) design among a group of subjects with very different institutional history and establishing that in spite of cultural differences Basu’s (2011) main insight of using asymmetric punishment has powerful disciplinary implications for harassment bribery.

References

- Abbink, K. (2006). Laboratory experiments on corruption, in *The Handbook of Corruption*, edited by Susan Rose-Ackerman, Edward Elgar Publishers, Cheltenham, UK and Northampton, USA.
- Abbink, K., Dasgupta, U., Gangadharan, L. and Jain, T. (2014). Letting the Briber Go Free: An Experiment on Mitigating Harassment Bribes. *Journal of Public Economics*, 111, 17-28.
- Abbink, K., Freidin, E., Gangadharan, L. & Moro, R. (2018). The effect of social norms on bribe offers. *Journal of Law, Economics, and Organization*. 34, 3, pp 457-474.
- Abbink, K. and Serra, D. (2012), "Chapter 4 Anticorruption Policies: Lessons from the Lab", Serra, D. and Wantchekon, L. (Ed.) *New Advances in Experimental Research on Corruption (Research in Experimental Economics, Vol. 15)*, Emerald Group Publishing Limited, Bingley, pp. 77-115. [https://doi.org/10.1108/S0193-2306\(2012\)0000015006](https://doi.org/10.1108/S0193-2306(2012)0000015006).
- Alatas, V., Cameron, L., Chaudhuri, A., Erkal, N., and Gangadharan, L. (2009). Gender, culture, and corruption: Insights from an experimental analysis. *Southern Economic Journal*, 75(3), 663-680.
- Apestequia, J., Dufwenberg, M., & Selten, R. (2006). Blowing the Whistle. *Economic Theory*, 31(1), 143–166.
- Banerjee, R. (2016a). Corruption, Norm Violation and the Decay in Social Capital. *Journal of Public Economics*, 137, pp 14-27.
- Banerjee, R. (2016b). On the interpretation of bribery in laboratory corruption games: moral frames and social norms. *Experimental Economics*, vol. 19(1), pages 240-267.
- Banuri, Sheheryar and Croson, Rachel T. A. and Kline, Reuben and Eckel, Catherine C. Towards an Improved Methodology in Analyzing Corruption: Insights from Citizen Responses to Corrupt Practices Across Countries (September 1, 2008). Available at SSRN: <https://ssrn.com/abstract=1883754>.
- Banuri, S. and Eckel, C. (2012), "Chapter 3 Experiments in Culture and Corruption: A Review", Serra, D. and Wantchekon, L. (Ed.) *New Advances in Experimental Research on Corruption (Research in Experimental Economics, Vol. 15)*, Emerald Group Publishing Limited, Bingley, pp. 51-76. [https://doi.org/10.1108/S0193-2306\(2012\)0000015005](https://doi.org/10.1108/S0193-2306(2012)0000015005).
- Barr, A., and Serra, D. (2009). The effects of externalities and framing on bribery in petty corruption. *Experimental Economics*, 12(4), 488-503.
- Basu, K. (1993). *Lectures in Industrial Organization Theory*, Oxford: Blackwell.
- Basu, K. (2011). Why, for a class of bribes, the act of giving a bribe should be treated as legal. *Ministry of Finance Working Paper*.
- Basu, K. (2015). The Republic of Beliefs: A New Approach to 'Law and Economics'. Policy Research Working Paper; No. 7259. World Bank, Washington, DC.

Basu, K. (2020). *Republic of Beliefs: A new approach to law and economics*. S.I.: Princeton University Press.

Basu, K., Basu, K., and Cordella, T. (2016). Asymmetric Punishment as an Instrument of Corruption Control. *Journal of Public Economic Theory*, 18(6): 831-856.

Becker, G. S. (1968). Crime and Punishment: An Economic Approach. *Journal of Political Economy* (Vol. 76).

Camerer, C. F., Dreber, A., Holzmeister, F., Ho, T.-H., Huber, J., Johannesson, M., Kirchler, M., Nave, G., Nosek, B. A., Pfeiffer, T., Altmejd, A., Buttrick, N., Chan, T., Chen, Y., Forsell, E., Gampa, A., Heikensten, E., Hummer, L., Imai, T., ... Wu, H. (2018). Evaluating the replicability of social science experiments in Nature and Science between 2010 and 2015. *Nature Human Behaviour*, 2(9), 637–644. <https://doi.org/10.1038/s41562-018-0399-z>.

Cameron, L., Chaudhuri, A., Erkal, N. and Gangadharan, L. (2009). Propensities to engage in and punish corrupt behaviour: Experimental evidence from Australia, India, Indonesia and Singapore. *Journal of Public Economics*, 93(7-8), 843-851.

Cárdenas, J.-C., & Ostrom, E. (2004). What do people bring into the game? Experiments in the field about cooperation in the commons. *Agricultural Systems*, 82(3), 307–326.

Cárdenas, J.-C. (2000). Rural institutions, poverty and cooperation: learning from experiments and conjoint analysis in the field. Ph.D. Dissertation, Department of Resource Economics, University of Massachusetts, Amherst

Chalfin, A. and McCrary, J. (2017). Criminal Deterrence: A Review of the Literature. *Journal of Economic Literature*, 55(1), 548.

Clemens, M. A. (2015). The Meaning of Failed Replications: A Review and Proposal. *Journal of Economic Surveys*, 31(1), 326–342.

Dasgupta, U., & Dimant, E. (2018). Harassing the Corrupt Bureaucrat: Does Severity Work Better than Certainty. *SSRN Working Paper Series 2018*.

Drèze, J. (2011). The bribing game. *Indian Express*, April 23, 2011.

Dufwenberg, M. and Spagnolo, G. (2011). Legalizing bribes. *Economic Inquiry*, 53(2), 836-853.

Engel, C., Görg, S., and Yu, G. (2016). Symmetric vs. asymmetric punishment regimes for collusive bribery. *American Law and Economic Review*, 18(2), 235-27.

Frank, B., Lambsdorff, J., and Boehm, F. (2011). Gender and corruption: Lessons from laboratory corruption experiments. *The European Journal of Development Research*, 23(1), 59-71.

Havel, V. *The Power of the Powerless in Open Letters: Selected Writings: 1965—1990* Edited and Translated by Paul Wilson. pp. 192–195.

- Jha, Chandan Kumar, "Essays on Corruption" (2015). LSU Doctoral Dissertations. 2669. https://digitalcommons.lsu.edu/gradschool_dissertations/2669.
- Jiang, T. (2015). Social preferences and the success of bribery deals. SSRN working paper.
- Jiang, T., Lindemans, J. W., and Biccheri C. (2015). Can Trust Facilitate Bribery? Experimental Evidence from China, Italy, Japan and Netherlands. *Social Cognition*, 33(5).
- Krupka, E.L. and Weber, R. A. (2013). "Identifying Social Norms Using Coordination Games: Why Does Dictator Game Sharing Vary?", *Journal of the European Economic Association*, 11(3), pp.495–524.
- Lambsdorff, J., and Fink, H. (2006). Combating corruption in Colombia: Perceptions and achievements. Passauer Diskussionspapiere No. V-44-06.
- Polinsky, A. M. and Shavell, S. (2000). The Economic Theory of Public Enforcement of Law. *Journal of Economic Literature*, 38(1), 4576.
- Serra, D. (2012). Combining top-down and bottom-up accountability: Evidence from a bribery experiment. *Journal of Law, Economics and Organization*, 28(3), 569-587.
- Smith, V. L. (1989). Theory, Experiment and Economics. *Journal of Economic Perspectives*, vol. 3, no. 1, pp. 151–169.

Figures:

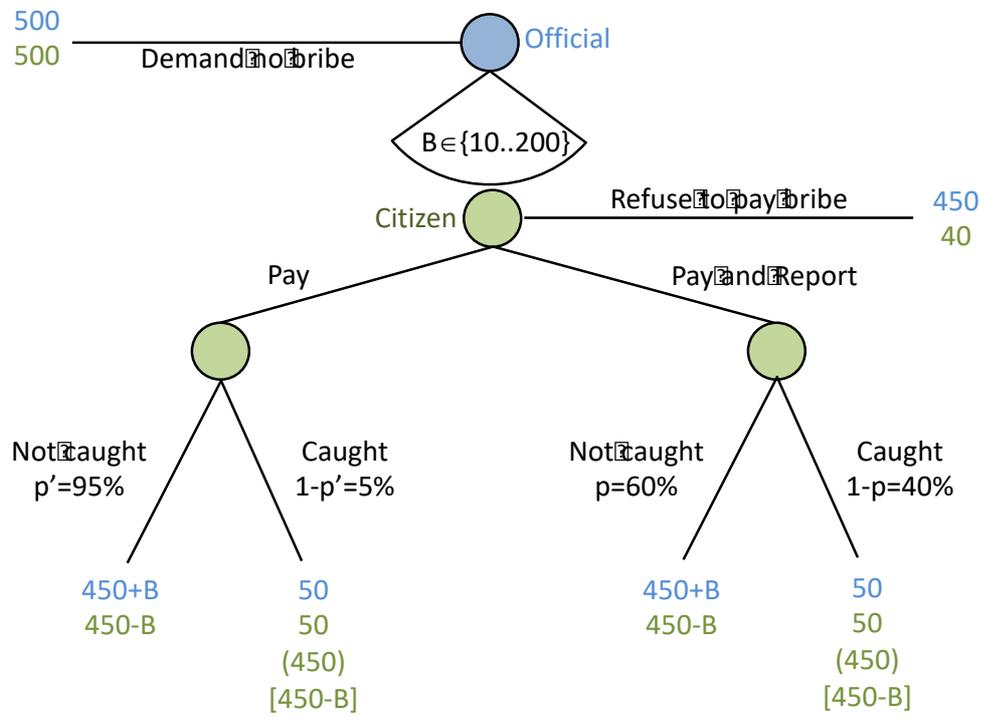


Figure 1: Symmetric Punishment Treatment

Notes: The extensive form of the Harassment Game is described above. Figure 1 provides the payoffs in the *Symmetric* treatment.

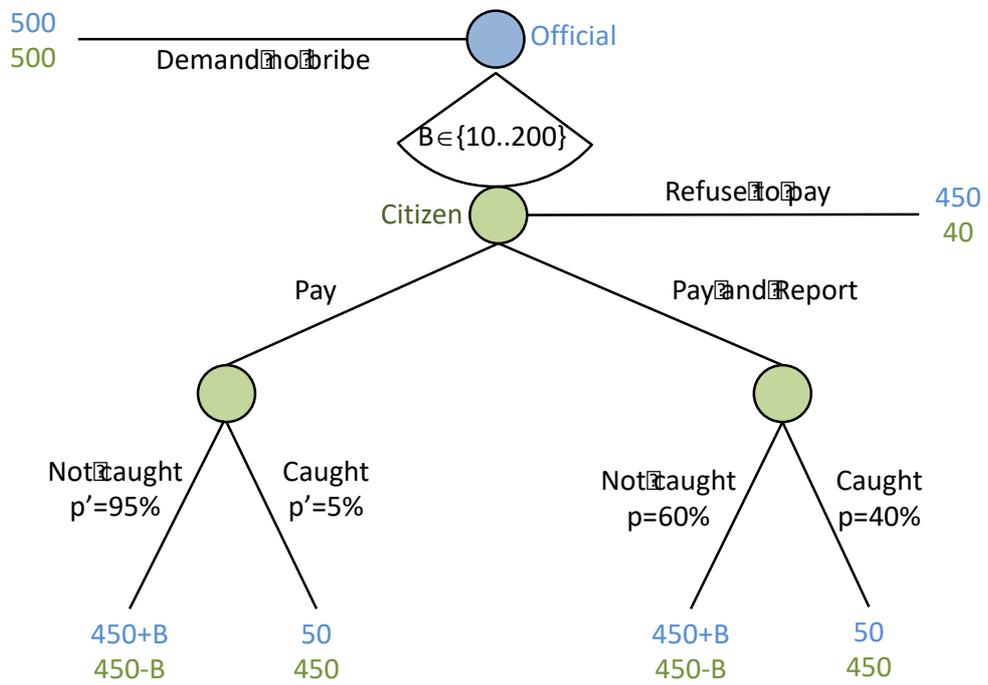


Figure 2: Asymmetric Punishment Treatment

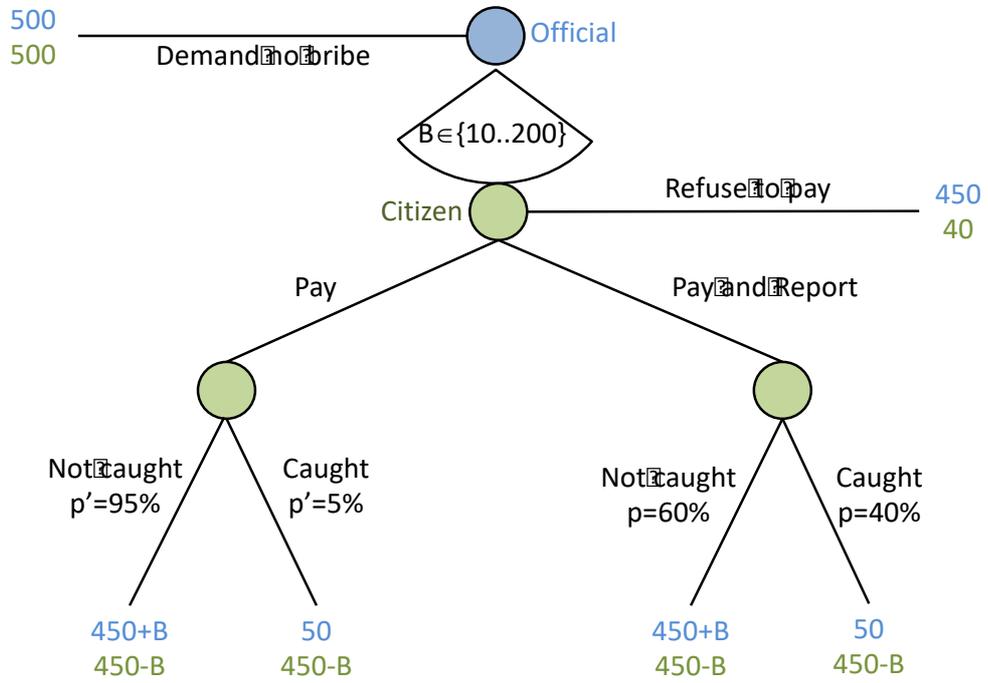


Figure 3: No Refund Treatment

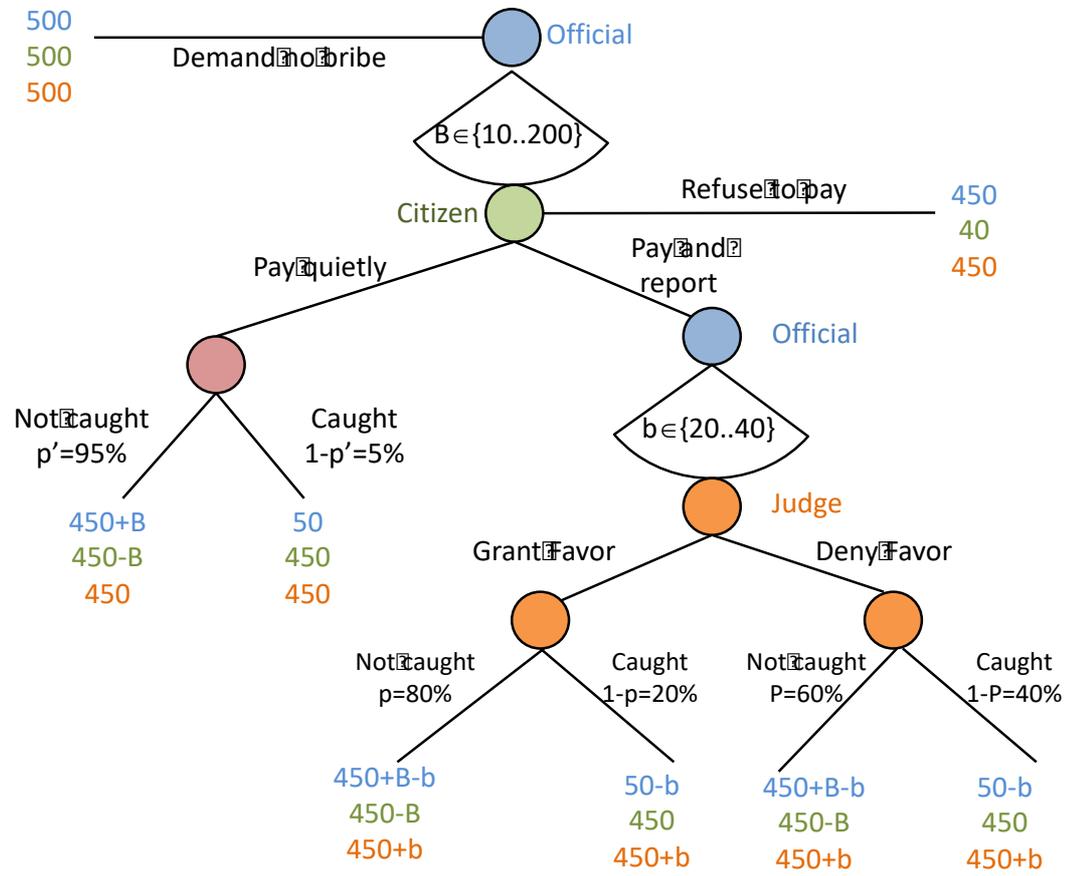


Figure 4: Disbelief Treatment

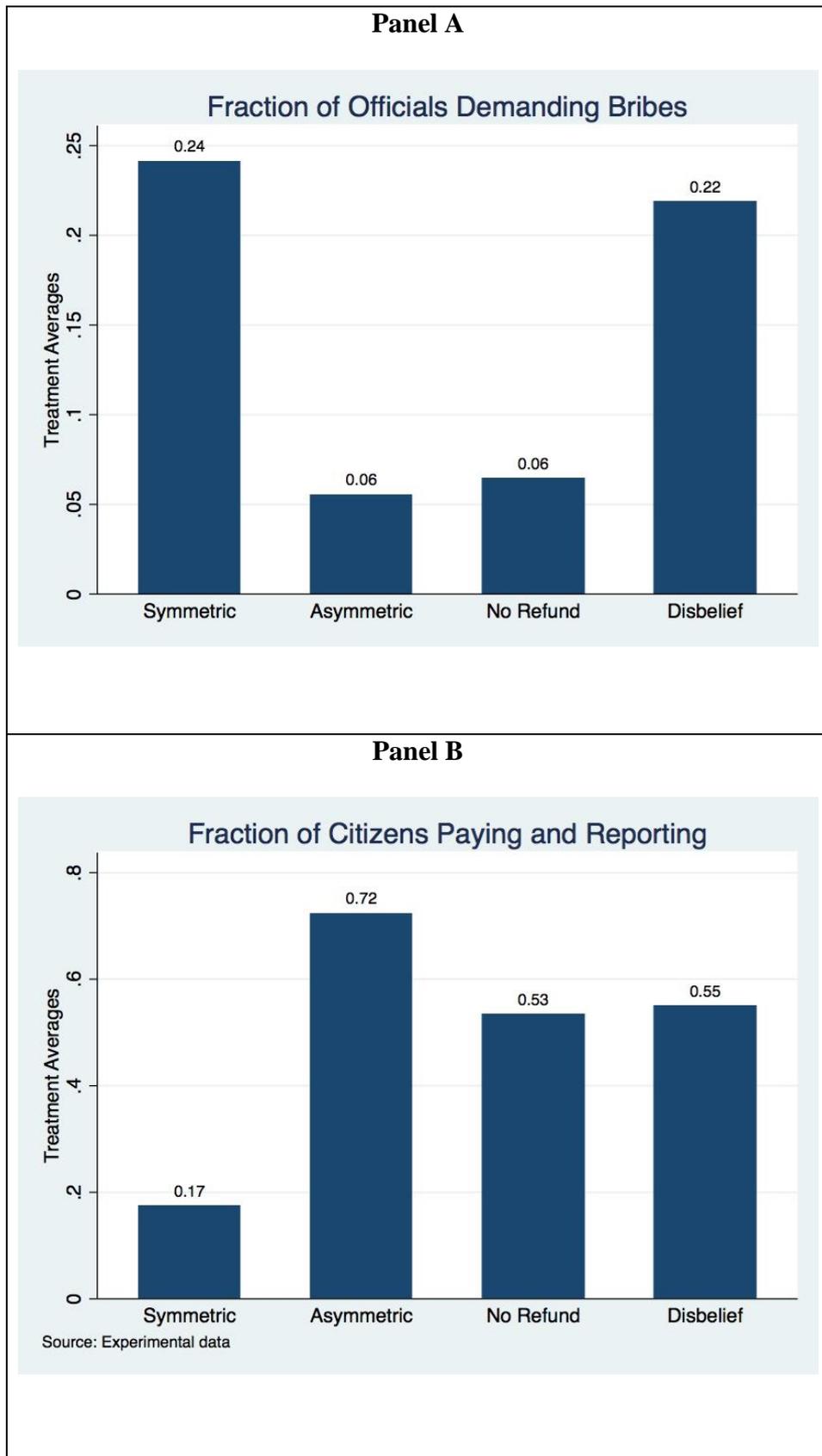


Figure 5: Subject Behavior in Treatments

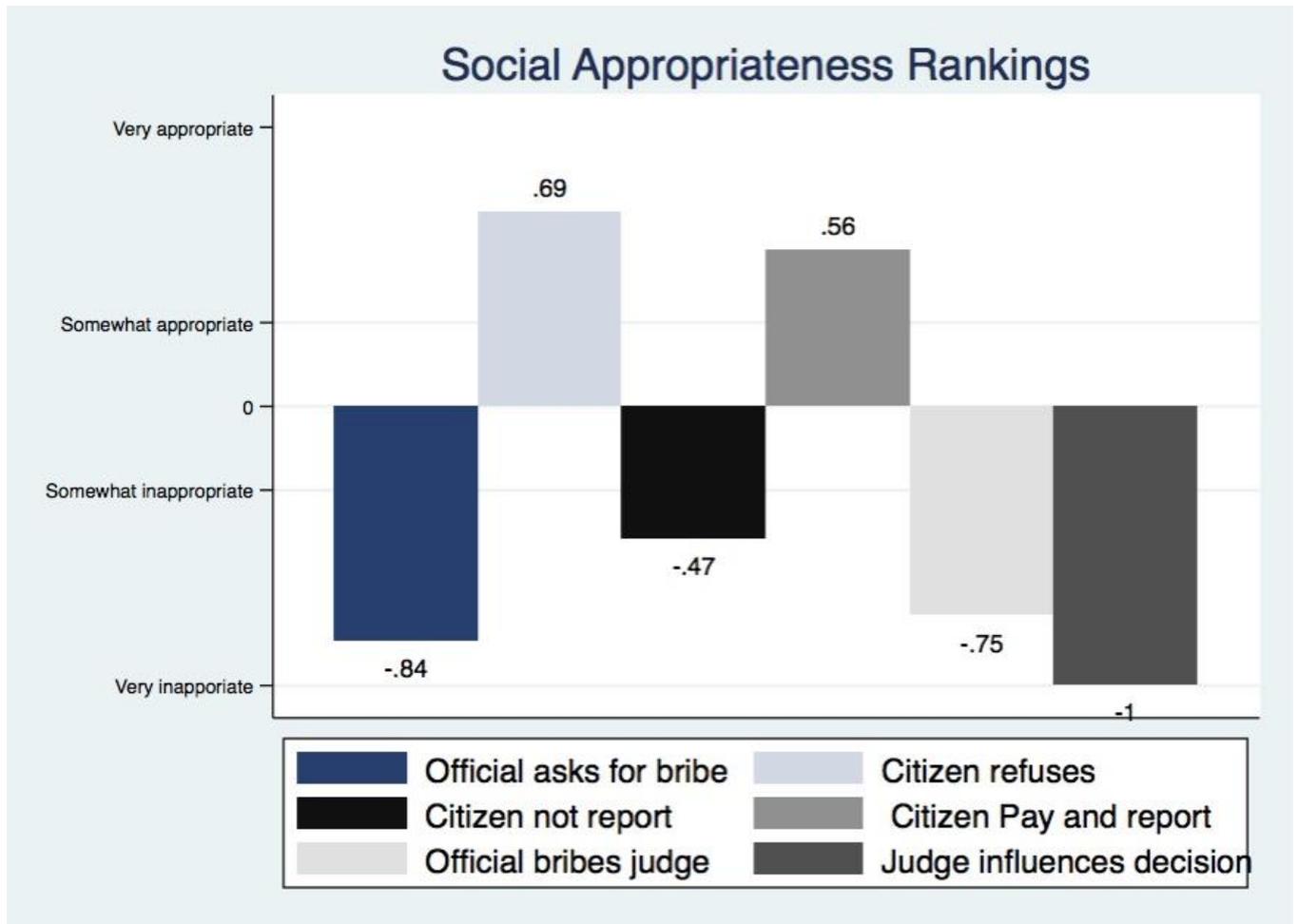


Figure 6: Results from Norm Elicitation Survey

Tables:

Table 1: Hypotheses and Results

Hypotheses	Decision*	Implication of Rejecting the Null
H1 _{NULL} : Bribe demands in Symmetric = Bribe demands in Asymmetric	Reject Null (p value = 0.01)	Asymmetric punishment decreases corruption by reducing bribe demands.
H1 _{ALT} : Bribe demands in Symmetric > Bribe demands in Asymmetric		
H2 _{NULL} : Paying and reporting in Symmetric = Paying and reporting in Asymmetric	Reject Null (p value = 0.03)	Asymmetric punishment decreases corruption by encouraging Citizens to report corruption more.
H2 _{ALT} : Paying and reporting in Symmetric < Paying and reporting in Asymmetric		
H3 _{NULL} : Bribe demands in Asymmetric = Bribe demands in Disbelief	Reject Null (p value = 0.02)	Disbelief encourages corruption and Officials believe they can influence the final outcome or Citizens might be less vigilant in reporting.
H3 _{ALT} : Bribe demands in Asymmetric > Bribe demands in Disbelief		
H4 _{NULL} : Paying and reporting in Asymmetric = Paying and reporting in Disbelief	Reject Null (p value = 0.03)	Disbelief encourages corruption and Citizens are discouraged to report as they realize the Judge might intervene in favor of the corrupt Official.
H4 _{ALT} : Paying and reporting in Asymmetric > Paying and reporting in Disbelief		
H5 _{NULL} : Bribe demands in Symmetric = Bribe demands in Disbelief	Fail to reject Null (p value = 0.8)	When a judge is introduced, Officials continue to believe that everyone will uphold the law and punish the law-breaker.
H5 _{ALT} : Bribe demands in Symmetric > Bribe demands in Disbelief		
H6 _{NULL} : Paying and reporting in Symmetric = Paying and reporting in Disbelief	Fail to reject Null (p value = 0.37)	When a judge is introduced, Citizens believe that Judges will not do their jobs.
H6 _{ALT} : Paying and reporting in Symmetric < Paying and reporting in Disbelief		

*Notes: All p-values are reported from t-tests

Table 2: Treatment summary

Treatments	# of sessions	# of Subjects
Symmetric	2	58
Asymmetric	2	72
No refund	2	62
Disbelief	2	96

Table 3: Probit estimates of Official behavior

	<u>Bribe demand</u>
	Coefficient
	(std. error)
Asymmetric treatment	-0.9*** (0.16)
No refund treatment	-0.93** (0.46)
Disbelief treatment	-0.05 (0.18)
Male	0.59** (0.26)
Age	-0.03 (0.03)
Chi-square test for mean treatment differences	
Asymmetric = No refund	p-value = 0.95
Asymmetric = Disbelief	p-value = 0.00
No refund = Disbelief	p-value = 0.05
Pseudo R square	0.12
Number of observations	108

Notes: “Symmetric” treatment, “Female” are the omitted categories from the independent variables. Cluster adjusted standard errors at the session level are reported in parentheses. **p<0.05 and ***p<0.01.

Table 4: Multinomial logit estimates of Citizen decisions

	<u>Refuse to pay</u>	<u>Pay and report</u>
	RRR	RRR
	(std. error)	(std. error)
Bribe amount in Symmetric treatment	1.00** (0.002)	0.99** (0.03)
Bribe amount in Asymmetric treatment	1.03*** (0.010)	1.02*** (0.009)
Bribe amount in No refund treatment	1.03*** (0.005)	1.01*** (0.004)
Bribe amount in Disbelief treatment	1.01*** (0.004)	1.009*** (0.003)
Age	1.17*** (0.05)	1.03 (0.04)
Male	0.60 (0.31)	0.86 (0.69)
Chi-square test for mean treatment differences when choice = Refuse to pay		
(Bribe amount in) Symmetric treatment = Asymmetric treatment		p-value = 0.02
(Bribe amount in) Asymmetric treatment = No refund		p-value = 0.93
(Bribe amount in) Asymmetric = Disbelief		p-value = 0.12
Chi-square test for mean treatment differences when choice = Pay and report		
(Bribe amount in) Symmetric treatment = Asymmetric treatment		p-value = 0.00
(Bribe amount in) Asymmetric treatment = No refund		p-value = 0.25
(Bribe amount in) Asymmetric = Disbelief		p-value = 0.03
Pseudo R square		0.19
Number of observations		2540

Notes: RRR is Relative risk ratio. “Pay quietly” is the base outcome from the dependent variables. “Female” are the omitted categories from the independent variables. Robust standard errors clustered at the individual level in parentheses. **p<0.05 and p<0.01***.