Social norms and honest behavior across countries

International collaboration

Pre-Analysis Plan

Abstract

Honesty is fundamental for societal functionality, as laws alone cannot ensure coexistence without individuals' intrinsic honesty. While social norms are known to influence prosocial behavior, their impact on intrinsic honesty remains under-explored. In this study, we will investigate the cultural and institutional drivers of honest behavior and examine the potential intermediary role of social norms. We will conduct four variations of a dice experiment in several countries. In the baseline version, participants privately roll a die and report the number, determining their payoff. Although individual honesty is not verifiable, aggregate results indicate general dishonesty levels. The baseline has no externalities, while the other three treatments introduce externalities by allocating unclaimed money to the Ministry of Finance, to a pro-social NGO or to another participant. These treatments aim to assess the influence of governmental institutions and cultural attitudes towards societal benefits on honesty. We will also measure injunctive and descriptive social norms to investigate their role in mediating the effects of institutions and culture on honest behavior.

1. Overview

Gächter and Schulz (2016) has highlighted a significant link between the prevalence of rule violations (PRV) in institutional contexts (like political fraud and corruption) and societal aspects (such as tax evasion) with intrinsic honesty. They suggest that perceived social norms, shaped by quality of governance and individualism levels, influence prevalence of rule violations (PRV) in a society. This, in turn, affects individual perceptions of rule-breaking acceptability and their likelihood of dishonest behavior, indicating how institutions and culture jointly influence behavior via social norms (Figure 1). However, this conclusion faces two challenges: (1) The role of perceived social norms as a mediator is inferred, not directly proven, since they aren't directly measured. A subsequent study by Aycinena et al. (2022) found that stricter norms against minor cheating actually led to more cheating, complicating the original study's narrative. (2) The links of culture and institutions with honesty are of correlation nature obscuring causal inferences. In this study we will try to address both of these challenges.

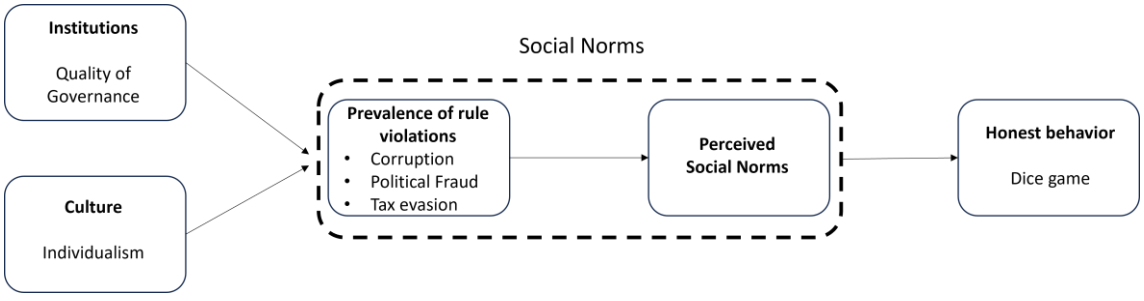

Figure 1. *Suggested causal path in Gächter and Schulz (2016)*

We will do so by (a) running three additional treatments in various countries priming either the role of institutions or that of societal benefits and (b) by eliciting social norms in an incentive compatible way.

Treatments. In the additional treatments, we will introduce externalities, specifically monetary donations directed towards different recipients – i) the government, ii) a pro-social NGO, or iii) another participant. These treatments aim to assess how such externalities impact honest behavior and the perception of social norms.

Treatment 1: Government (GOV). For the government treatment, we create an externality by directing donations to the Ministry of Finance. This treatment is designed to examine changes in honesty levels compared to a baseline scenario, with the expectation that a positive effect on honesty would correlate with higher quality of governance (QoG)

Treatment 2: Pro-social NGO (NGO). This treatment directs the externalities to the Doctors Without Borders organization (or a similar organization in countries where Doctors Without Borders do not have strong presence). Compared to the GOV treatment, the efficiency of the donated money is similar, but what changes are the sentiments towards the recipients (GOV vs NGO).

Treatment 3: Another participant (SOCIAL). In this treatment the externality benefits another, randomly chosen individual in the room. This treatment explores the impact of cultural aspects, specifically prosocial on honesty. This treatment is expected to yield stronger effects due to the more direct impact on the additional party, compared to the NGO and GOV treatments. We aim to see how cultural factors that may be related with prosociality, distinct from quality of governance, influence honesty in this setting.

Regarding the culture factor, we will focus on individualism, which is suggested to promote pro-social behavior towards non-relatives in individualistic societies. The rationale is that an individualistic culture makes people treat knows and unknowns the same, therefore the existing prosocial stock of a society (also known as social capital) benefits everyone (Tabellini, 2008). To assess individualism's impact, we measure it through (a) questionnaire items from a well-known index, (b) responses to an adapted version of the trolley dilemma, and (c) measuring the concept of universalism, as defined by Enke et al (2022), which aligns closely with our interest in egalitarian treatment of all individuals. Finally, we measure the concept of the zero-sum thinking (ZST), which measures how much people think of life as a zero-sum game.

Social norms. The other part of the study concerns the potential causal effect via social norms. The original study uses a country index of the prevalence of rule violations and suggests that this might (among others) affect the personal injunctive norms of people: that cheating might be acceptable. In this study, we will measure the social norms at the group level employing the inceptive compatible Krupka Weber method (Krupka and Weber, 2013) where people guess (correct guesses are paid) what most people think is appropriate and therefore the group's injunctive social norm. Then we want to see the extent to which (a) social norms predict behavior (honesty) and (b) whether social norms are predicted by the institutional or cultural characteristics that we hypothesize affect honesty.

To measure social norms' impact, treatment effects are crucial. In previous study (Exadaktylos et al., 2023), we explored how governance quality influences social norms regarding tax payments. We discovered that changes in social norms between baseline and tax treatments, rather than their absolute levels, accurately reflected their relationship with governance quality (Figure 2).

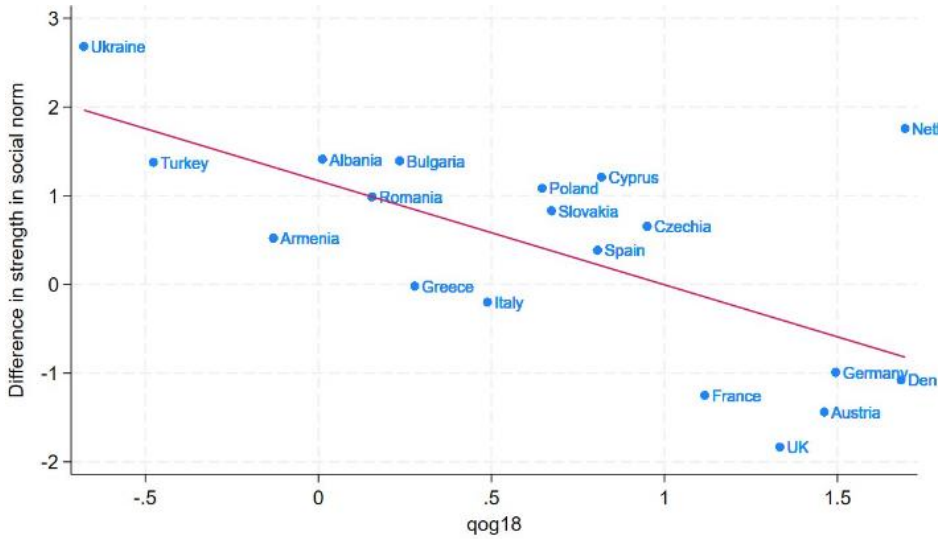

Figure 2. *The drop in the strength of injunctive social norms between baseline and tax-framed public good game treatments are correlated with the Quality of Governance (Hereafter, QoG). Source: Exadaktylos et al. (2023).*

Therefore, to assess governance's impact on social norms, we look at treatment effects. However, our past studies showed that injunctive norms did not directly influence behavior, possibly due to a weak connection between what people feel they should do and their actions. We anticipate a positive correlation between governance quality and treatment effects in the baseline and governance treatments, but not in the baseline and NGO treatments. Similarly, individualism or zero-sum thinking should predict social norms in the social-baseline treatment. The relationship between norms and behavior likely hinges on the treatment effect on norms in the government (but not NGO) and baseline treatments.

We also examine the influence of descriptive social norms on behavior, expecting absolute levels to predict corresponding behaviors. These analyses are primarily at the country level due to the limitations of individual-level dishonesty measurement; a large sample size would be necessary for individual-level evidence to be conclusive. Thus, we'll conduct regressions predicting dishonesty using country-level variables like governance quality, individualism, zero-sum thinking, and group-level social norms.

Additionally, we will analyze individual perceptions of social norms, exploring if a strong perceived norm against cheating correlates with governance quality, individualism, or zero-sum thinking at the country level. The strength of social norms will be regressed against these variables to assess their relationships.

Individual level determinants of social norms. Finally, trying to shed light on the black box of perceptions of social norms at the individual level, we will also test the prediction that people higher in empathy as measured by the eyes test: a shortened, not validated, and international version of the eyes test where each subject has to predict the emotion depicted in 12 pairs of eyes (two of white, two of black and two of Asian eyes, gender-balanced in all cases) have more accurate social norms predictions. We will contrast this by the potential correlation of CRT ability with the accuracy and also math ability on the social norm's perception accuracy. We expect that empathy is more predictive than CRT test and math does not play any role, as correctly perceiving social norms is a more of an emotional than a rational attribute.

2. **Design**

The game. The baseline experimental game is the same as that of Gächter, & Schulz (2016). Participants are instructed to privately roll a 6-sided die twice and then report the first number they roll. Their payoff depends on the reported number, regardless of the actual outcome of the die roll. Reporting a 1 earns the participant 1 monetary unit (MU), reporting a 2 earns 2 MUs, and so on. Reporting 6 results in the participant receiving no monetary reward. Importantly, the reported numbers, and thus individual honesty or dishonesty, are not verifiable due to the private nature of the rolls. Experimenters (or anybody else) will never know whether an individual has cheated or not and by how much. However, the collective outcomes provide insights into the overall level of dishonest behavior within the group: Every number is equally likely to appear, with a probability of one-sixth, and the mean claim is 2.5 monetary units (MU). A large-enough subject pool allows calculation of the degree of cheating in each country.

Treatments. As noted, our experiment included four variations of the dice game. The baseline version followed established protocols, while the other three introduced externalities associated with dishonest behavior. In these, the money not claimed by the participant (for example, 3 MUs if a 2 is reported) was allocated to different recipients depending on the treatment: (i) the national Ministry of Finance ('government' treatment), (ii) the non-profit organization Doctors Without Borders ('NGO' treatment) or (iii) another participant in the same session ('social' treatment). Participants will be assigned to only one treatment and were not informed about the other versions.

Number of participants. In each treatment, we a total of 80 participant, summing up a total of 320 participants per country.

Experiment in the classroom. We opt to run the experiment in the classroom (not necessary during the class) for convenience and for comparability issues. Since we will try to obtain data from countries with no established laboratory (e.g. Madagascar), experiments in the classroom will be opted for all countries. Running the experiment not in the lab but rather in the class using smartphones is possible given that the experiment in run by Qualtrics and local network is not necessary. Interactions takes place only at the end of the experiment and in the Qualtrics platform. A cup and a die will be distributed to every participant.

Implementation. The experimenter projects or writes in the blackboard the following link: https://sites.google.com/view/themultilab. Subjects either click in the click button or use their smartphone camera to scan the QR code. All the instructions are online. The local experimenter will only answer basic questions regarding the procedures.

Participant selection and recruitment. We will recruit from the convenient sample of university students via open calls or during a university class.

Countries selection. Telling apart the relative importance of institutions and individualism is difficult since they are highly correlated (Figure 3). Individualistic countries with generalized morality tend to have strong institutions. In addition, recent research reveals that the effect of monetary incentives, as the ones used in our design, is stronger among W.E.I.R.D countries (Medvedev et al., 2024). To address the two issues, we sample both W.E.I.R.D countries and less W.E.I.R.D) and countries that have similar Individualism but different QOG and the other way around. Our planned sample is the yellow-highlighted countries in Figure 3.

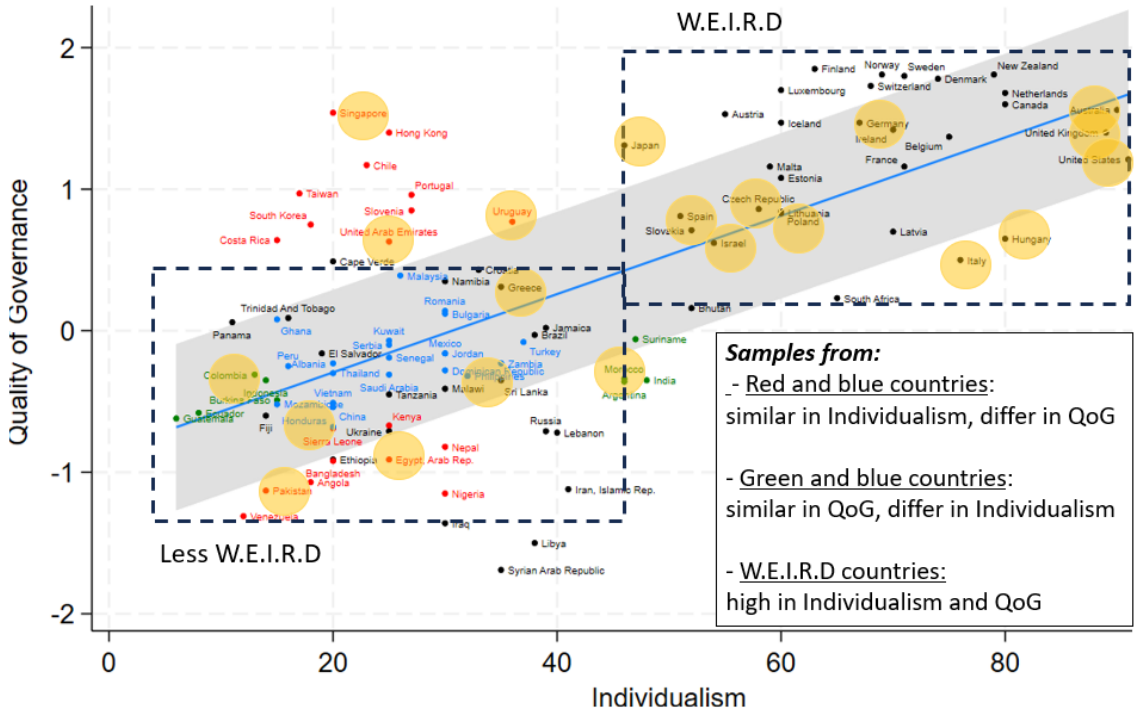

Figure 3. *Quality of Governance and Individualism are highly correlated among countries. Yellow-highlighted countries is the planned sample, which will allow disentangle the role of individualism from that of Quality of Governance.*

We have already collected data from Spain, Greece, Honduras and Philippines. To address the above concerns, we will further collect data from Uruguay, Italy, Poland, Madagascar, Ivory Coast, Germany, UK, USA, Singapore, Pakistan, Japan, United Arab Emirates, Israel, Italy and Hungary and Egypt.

Exclusion criteria. For measuring honesty (see variables section), all data for which the participant completed the survey will be used. For measuring injunctive social norms, exclusion criteria as proposed by the original Krupka and Weber (2013) will be applied.

Procedures. To ensure as identical procedures as possible in conducting the experiment in each country, the experiment is designed with minimal experimenter's interference. In addition, a detailed document is distributed to all local experimenters.

3. Variables

(Dis)honesty.

To assess dishonesty, we adopt the methodology used by Gächter and Schulz (2016), involving six potential claims ranging from zero to five. In a fully honest scenario, each number would appear with equal probability (one-sixth), averaging to 2.5 claims of MU. This represents the 'full honesty' benchmark. Conversely, the 'full dishonesty' benchmark assumes subjects claim the maximum of five units, driven solely by material incentives.

However, dishonesty can also manifest as only slightly 'bending the rules', like reporting the higher of two dice rolls instead of the required first roll. This leads to the 'justified dishonesty' benchmark, with expected claim frequencies for each number based on dice roll probabilities.

We use the four measures of dishonesty employed by Gächter and Schulz (2016):

1. *Mean claim*: Deviation from the fully honest average of 2.5 indicates dishonesty.
2. *Percentage of high claims* (3, 4, 5): Deviations from the 50% honest expectation towards the 75% 'justified dishonesty' benchmark.
3. *Percentage of maximizers*: Participants claiming 5, beyond the expected 16.7% roll rate.
4. *Percentage of fully honest participants:* Identified by zero claims, expected at a 16.7% rate, with negative deviations indicating dishonesty.

Social norms

To measure social norms, we utilized the method by Aycinena et al. (2022), designed to elicit norms in an incentive-compatible way. After rolling and reporting their die number, subjects estimate the average reported behavior of others in their group, thus providing an insight into descriptive norms. For injunctive norms, we employed the Krupka-Weber method, where participants predict the average moral assessment of different degrees of cheating, with accurate predictions being monetarily rewarded.

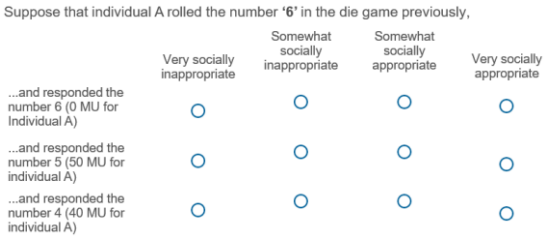

Figure 4. *Krupka-Weber method for eliciting injunctive social norms as applied by Aycinena et al. (2022)*

We created 20 distinct scenarios to assess the acceptability of diverging from complete honesty. Fifteen scenarios probed attitudes towards different extents of dishonesty, while five evaluated the justifiability of reporting one's actual die number. To quantify the norm against cheating, we used two metrics: (a) the average rating across all respondents for each scenario, ranging from 0 (all participants in the subject pool rate cheating as 'very socially appropriate' to 3 (they all rate cheating as 'very social inappropriate'), and (b) the proportion of participants deeming a behavior as either 'very socially appropriate' or 'somewhat socially inappropriate', taking values from 0 to 1, respectively. This resulted in 20 unique social norms, each reflecting a specific form of dishonest behavior.

Constructing a general index of the norm strength against cheating is challenging due to the absence of a clear theoretical framework linking various cheating sensitivities to a broader anti-cheating norm. Nevertheless, our data enable us to categorize cheating based on severity (minor vs. significant increase in claims) and initial circumstances (cheating under unlucky vs. lucky dice rolls). We therefore, developed five indices:

1. Average strength of social norms across all 15 dishonest scenarios.
2. Average strength of norms for minor cheating (increasing claims by one or two MUs).
3. Average strength of norms for significant cheating (increasing claims by three or more MUs).
4. Comparative strength of norms against minor vs. significant cheating.
5. Comparative strength of norms against cheating under initially unfavorable vs. favorable dice rolls.

We will run separate regressions for each of the variables.

Individualism

After social norms, we elicit individualism/collectivism using the same subject pool. We decided to elicit individualism and not be based solely on international databases, because of concerns of non-representativeness of our subject pool in comparison with the country that we sampled from, since our sample were mainly university students. The concerns are bigger in low-income countries where we expect university students to consistently belong to different (higher) sociodemographic profile in comparison to that of the country.

We first employed the short version of the extensively used test of Triandis and Gelfand, 1998, where subjects have to rate their degree each of the following statements describe them (From 1 -Definitely no, to 9- Definitely yes), yielding four constructs: horizontal individualism (HI), vertical individualism (VI), horizontal collectivism (HC), and vertical collectivism (VC). The effects of vertical and horizontal individualism (mean scores in each across subject pools) will be tested both separately and combining them in one Individualism-Collectivism scale.

Horizontal Individualism

1. I'd rather depend on myself than others
2. I rely on myself most of the time, I rarely rely on others
3. I often do my own thing
4. My personal identity, independent of others, is very important to me

Vertical Individualism

1. It is important for me to do my job better than the others
2. Winning is everything
3. Competition is the law of nature
4. When another person does better than I do, I get tense and aroused

Horizontal Collectivism

1. If a co-worker gets a prize, I will feel proud
2. The well-being of my coworkers is important to me
3. To me, pleasure is spending time with others
4. I feel good when I cooperate with others

Vertical Collectivism

1. Parents and children must stay together as much as possible
2. it is my duty to take care of my family, even when I have to sacrifice what I want
3. Family members should stick together, no matter what sacrifices are required
4. It is important to me that I respect the decision made by my groups

These indexes will be included in the regressions as independent variables. In the case of "overall individualism", for example, the variable would take the mean value of agreeableness across the 16 items.

The second measure of individualism includes a variation of the trolley problem, where subjects are instructed *"A trolley is running out of control down a track. In its path are 5 people who have been tied to the track. Fortunately, you can flip a switch that will lead the trolley down a different track and save their lives. Unfortunately, there is a single person tied to that track who will die if you flip the switch. Would you flip the switch?"*

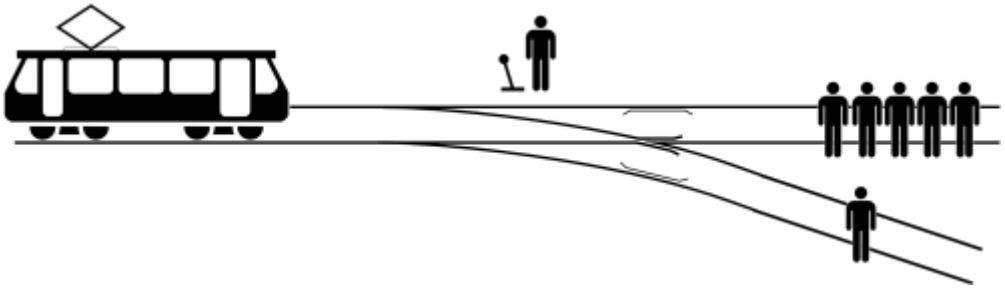

Figure 5. *Visual aid as presented to the subjects for the trolley dilemma.*

In this variation, subjects that decide to flip the switch, effectively killing one life to save five, are subsequently asked *"what if that person was your cousin? Would you flip the switch then?"*. The percentage of subjects who are willing to flip the switch when the sacrificed life is that of the cousin's among the subjects who are willing to kill an unknown life constitutes the second measure of individualism. Individualist countries will not differentiate between an unknown and their cousin.

To test the degree that social norms are being followed, half of the participants were presented with a version where instead of asking what they would do, they are asked to judge the socially acceptability of such actions. Counties where injunctive social norms affect behavior will be more strongly correlated with the actions.

The third way that we judged individualism was employing the Universalism scale introduced by Enke et al. (2022). Subjects were asked how they would divide 1000 MU among a random unknown person of their country and somebody they know:

- A friend of a family member (e.g. your brother's closest friend)
- A current or former colleague from work or university
- Someone who shares your religious beliefs
- A member of your extended family (e.g. your cousin)
- Someone who shares your political beliefs

The average number of MU allocated to the unknown participant across categories constitutes the measure of universalism which is closely related to individualism.

Empathy

We also measured empathy at the individual level, employing a multicultural variation of the Eyes tests where subjects select among four potential options the emotion of a person by observing only his/her eyes:

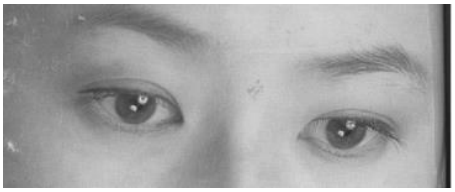

Figure 6. *Example image of the empathy test*

Social preferences, math abilities and cognitive reflection

Finally, we will also measure social preferences employing a mini dictator game involving six binary decisions which will be monetary incentivized, mathematical abilities by asking subjects to make summations of numbers and cognitive reflection test by employing a variation of the standard CRT test (Frederick, 2005):

1. A pen and a rubber cost 1.10 euros. If the pen costs 1 euro more than the rubber, how many cents does the rubber cost?
2. If 5 bakers make 5 loaves of bread in 5 minutes, how many minutes will it take 100 bakers to make 100 loaves of bread? It will take _____ minutes.
3. In an aquarium there is a colony of algae. Every day the colony doubles in size. If in 48 days the aquarium is completely filled with algae, how many days will it take for the algae to cover half the aquarium? It will take _____ days.

CRT will be inserted in the analysis as a continuous variable and alternatively as a binary variable indicating whether the subject was above or below the average score within her country.

Other variables: gender, age, studies, trust in others, in institutions, and number of experiments previously participated.

4. Analysis

Regression analyses will be conducted that will control for individual attitudes to honesty, social preferences, individual-level individualism, CRT, empathy, as well as for sociodemographic including gender, and income. Stronger individual norms of honesty significantly reduce mean claim, high claim and highest claim. Beliefs in the fairness of others only significantly reduce highest claim. Will test significance for four p levels, $p<0.001$ $p<0.01$, $p<0.05$ and $p<0.1$. Regressions will use robust standard errors clusters at the country, sessions, and treatment levels.

Hypotheses

Our basic hypotheses refer to how intrinsic honesty is affected by governmental institutions and individualism on the on hand and how this effect is mediated by perceived social norms. We hypothesize that country indexes are more predictive of social norms about honest behavior than honest behavior itself.

Hypothesis 1: Quality of Governance

1a. QoG is positively and statistically significantly correlated with honesty in baseline (r1).

1b. QoG is positively and statistically significantly correlated with honesty in the QoG treatment (r2).

1c. QoG is positively and statistically significantly correlated with honesty in NGO treatment (r3).

1d. QoG is positively and statistically significantly correlated with honesty in social treatment (r4).

1e. r1>r2>r3, r4

Hypothesis 2: Individualism

2a. Individualism is positively and statistically significant correlated with honesty in baseline (r5).

2b. Individualism is positively and statistically significant correlated with honesty in the social treatment (r6).

2c. r6>r5

Hypothesis 3: Honesty vs Individualism

3a. QoG is a stronger predictor of honesty than Individualism in the baseline treatment (r1>r5)

3b. QoG is a stronger predictor of honesty in the QoG treatment (r1>r6) than Individualism is in the social treatment (r2>r6)

Hypothesis 4: Treatment effect differences

4a. The treatment effect between baseline and QoG treatments is statistically significant correlated with QoG.

4b. The treatment effect between baseline and social is not statistically significant correlated with Individualism.

Hypothesis 5: Social Norms

5a. Descriptive norms are positive and statistically correlated in all treatments.

5b. Injunctive norms are not statistically correlated in any of the treatments.

5c. The percentage change of injunctive social norms from baseline to QoG treatment is significantly correlated with QoG of the country.

Hypothesis 6: Individual determinants of social norms

6a. Individuals scoring higher in the empathy test have better accuracy in both descriptive and injunctive social norms.

6b. Individuals scoring higher in the cognitive reflection test do not have better accuracy in both descriptive and injunctive social norms.

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