# Supplementary Material

## Die rolling paradigm.

At the end of the study, participants determined their final pay in a die-on-the-screen task that allowed misreporting. The participants’ self-reported die roll determined whether their final earnings were rounded upwards or downwards. Identical to original method introduced by Kocher and colleagues (2018), a pre-recorded sequence randomly displayed one of six possible a die roll outcomes. After viewing this short video sequence, participants indicated whether the outcome was 1, 2, 3 (= payoffs rounded downwards) or 4,5,6 (= payoffs rounded upwards). The choice of this cheating task was due to a practical restriction of the payment method which only allowed to pay participants in increments of R10,-.

Results die roll.

As outlined in the pre-registration, we conducted exploratory analysis to test whether the die rolls differ across the treatments. Instead of a Fisher’s exact test, we report the χ²-test, which provides equivalent results. Although the rate of dishonesty is slightly higher in the Baseline treatment, the effect is not significant (see Table S1). In general, we observe very low cheating rates compared to other studies using die-rolling tasks (see for meta-analyses, Abeler, Raymond, Nosenzo, & Raymond, 2019; Köbis, Verschuere, Bereby-Meyer, Rand & Shalvi, 2019). Given that some participants lied to their own cost, we also conducted an additional analysis only coding lies to the participants’ advantage as cheating (see upward lying only in Table S1) which equally does not reveal significant results.

**Table S1.** Comparison of honest die roll reporting by treatment. Data is presented N(%).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Treatment** | |  |  |
|  | **Baseline** | **Poster** | **Test statistic** | ***p-*value** |
| **Die roll report** |  |  | 2(1) = 1.336 | .248 |
| Honest | 167(92%) | 118 (95%) |  |  |
| Dishonest | 15 (8%) | 6 (5%) |  |  |
| **Upward lying only1** |  |  | 2(1) = 0.869 | .351 |
| Honest | 172 (95%) | 120(97%) |  |  |
| Dishonest | 10 (5%) | 4 (3%) |  |  |
| **N(Observations)** | 182 | 124 |  |  |

**Note.** 1 Some participants misreported to their own disadvantage, while they rolled a 4, 5 or a 6, they reported having rolled a 1, 2 or a 3 possibly diminishing their pay offs. ‘Upward lying only’ reports dishonest reporting only when doing so is to the participants advantage. Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

## Randomization

As illustrated in Table S2, the main demographic variables do not differ between Baseline and Poster treatment, the only indication for some difference stemming from the date of the monthly wage pay.

**Table S2**. Comparison of basic socio-demographic indicators by treatment. Data is presented as mean (SD) for the numerical values and N(%) for the categorical variables.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Treatment** | |  |  |
|  | **Baseline** | **Poster** | **Test statistic** | ***p*-value** |
| **Age (in years)** | 30.33 (8.03) | 29.10 (8.28) | *t*(257) = 1.297 | .196 |
| **Gender** |  |  | χ2(1) = 0.628 | .428 |
| Female | 114 (61%) | 70 (56%) |  |  |
| Male | 73 (39%) | 54 (44%) |  |  |
| **Education** |  |  | χ2(2) = 1.529 | .466 |
| No high school | 29 (15%) | 26 (21%) |  |  |
| High School (Matric) | 127 (68%) | 79 (64%) |  |  |
| Higher education | 31 (17%) | 19 (15%) |  |  |
| **Monthly wage pay day** |  |  | χ2(3) = 6.792 | .079\* |
| 1st | 28 (15%) | 12 (10%) |  |  |
| 15th | 18 (10%) | 7 (6%) |  |  |
| 25th | 73 (39%) | 43 (34%) |  |  |
| None | 68 (36%) | 62 (50%) |  |  |
| **Language** |  |  | χ2(1) = 0.482 | .488 |
| English | 107 (57%) | 66 (53%) |  |  |
| isiZulu | 80 (43%) | 58 (47%) |  |  |
| N (Observations) | 187 | 124 |  |  |

**Note.** Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

As a second step, we checked whether the main demographic variables, the norm variables, and the behavior in the bribery game differ for the two waves of the Baseline treatment (pre and post poster). For the demographic variables, we observe some heterogeneity between the two Baseline waves, with participants in the second wave being slightly younger and having obtained higher levels of education. Also, some evidence exist for more polarized views about the social injunctive norm about bribery (see full overview in Table S3).

**Table S3**. Comparison of basic socio-demographic indicators, Norms variable, and choices in the Bribery Game for the two waves of the baseline treatment. Data is presented as means (SD) for the numerical values and N(%) for the categorical variables.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **First**  **wave**  (Week 1) | **Second**  **wave**  (Week7) | **Test statistic** | ***p*-value** |
| **Age (in years)** | 31.12 (8.37) | 28.16 (6.62) | *t*(109) = 2.510 | .014\*\* |
| **Gender** |  |  | χ2(1) = 0.728 | .394 |
| Female | 81 (59%) | 33 (66%) |  |  |
| Male | 56 (41%) | 17 (34%) |  |  |
| **Education** |  |  | χ2(2) = 6.459 | .040\*\* |
| No high school | 22 (16%) | 7 (14%) |  |  |
| High School (Matric) | 98 (72%) | 29 (58%) |  |  |
| Higher education | 17 (12%) | 14 (28%) |  |  |
| **Month wage pay day** |  |  | χ2(3) = 5.828 | .120 |
| 1st | 17 (12%) | 11 (22%) |  |  |
| 15th | 13 (9%) | 5 (10%) |  |  |
| 25th | 60 (44%) | 13 (26%) |  |  |
| None | 47 (34%) | 21 (42%) |  |  |
| **Language** |  |  | χ2(1) = 1.282 | .258 |
| English | 75 (55%) | 32 (64%) |  |  |
| isiZulu | 62 (45%) | 18 (36%) |  |  |
|  |  |  |  |  |
| **Descriptive Norm** |  |  | χ2(4) = 4.595 | .331 |
| 0-2 out of 10 | 19 (14%) | 5 (10%) |  |  |
| 3-4 out of 10 | 15 (11%) | 6 (12%) |  |  |
| 5-6 out of 10 | 14 (10%) | 9 (18%) |  |  |
| 7-8 out of 10 | 61 (45%) | 16 (32%) |  |  |
| 9-10 out of 10 | 28 (20%) | 14 (28%) |  |  |
| **Social Injunctive norm** |  |  | χ2(3) = 8.800 | .032\*\* |
| Very inappropriate | 57 (42%) | 27 (54%) |  |  |
| Somewhat inappropriate | 43 (31%) | 9 (18%) |  |  |
| Somewhat appropriate | 26 (19%) | 5 (10%) |  |  |
| Very appropriate | 11 (8%) | 9 (18%) |  |  |
| **Personal injunctive norm** |  |  | χ2(3) = 0.574 | .902 |
| Very inappropriate | 60 (44%) | 25 (50%) |  |  |
| Somewhat inappropriate | 34 (25%) | 11 (22%) |  |  |
| Somewhat appropriate | 21 (15%) | 7 (14%) |  |  |
| Very appropriate | 22 (16%) | 7 (14%) |  |  |
| **Citizen offer** |  |  | χ2(1) = 1.846 | .174 |
| Yes | 38 (28%) | 9 (18%) |  |  |
| No | 99 (72%) | 41 (82%) |  |  |
| **Public official acceptance** |  |  | χ2(1) = 0.225 | .636 |
| Yes | 55 (40%) | 22 (44%) |  |  |
| No | 82 (60%) | 28 (56%) |  |  |
| **N (Observations)** | 137 | 50 |  |  |

**Note.** Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

## Data Inclusion and Exclusion

In the pre-registration, we specified several exclusion criteria. First, we planned to exclude participants based on their understanding of the key measures. Second, we specified that we would conduct a separate analysis by excluding participants that did not recall seeing a poster related to the study and would compare this to the results of an analysis not applying this restriction. Third, we specified that we would exclude participants from the analysis who did not pass the attention check. We address each of these criteria below. After that we present the analysis on the unexpected control for the collusion scheme that took place (see more details in the main manuscript).

Understanding of the measures

As outlined in the pre-registration, we aimed to exclude participants who seem to not understand the logic of the incentivized norms assessment as well as the bribery game, which we assess through five test questions. Below we report the results when excluding participants with incorrect answers to the test questions, even after receiving additional clarification (see Table S4 and Table S5). As can be seen, the descriptive norms effect remains directionally the same (*p* < .1; Models 1 & 2, Table S4). For the effect of the posters on the propensity to accept bribes in the role of a public official, the effect remains statistically significant (*p* < .05 see Models 3 & 4, Table S5). In line with the criteria outlined in the pre-registration, we argue that excluding participants based on their understanding reveals the most reliable results and hence report these results in the main text.

**Table S4**. Regressions for the Descriptive and Injunctive norms excluding participants with incorrect answers to test questions in part 1. Data is presented as coefficients of the ordered probit model with robust standard errors in brackets.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | | | **Model 3** | | **Model 4** | | **Model 5** | | **Model 6** |
| DV Ordinal answer to: | Descriptive norm | Descriptive norm | | | Injunctive social norm | | Injunctive social norm | | Injunctive personal norm | | Injunctive personal norm |
| **Poster treatment** | -0.253\*  (0.151) | | -0.304\*  (0.158) | -0.007  (0.154) | | -0.010  (0.165) | | -0.148  (0.154) | | -0.132  (0.166) | |
|  |  | |  |  | |  | |  | |  | |
| **Demographics** |  | |  |  | |  | |  | |  | |
| Gender (male)d |  | | -0.031  (0.139) |  | | 0.006  (0.146) | |  | | -0.202  (0.149) | |
| Age (in years) |  | | 0.000  (0.009) |  | | -0.009  (0.011) | |  | | -0.009  (0.010) | |
| Language (isiZulu)d |  | | 0.280\*  (0.145) |  | | -0.367\*\*  (0.160) | |  | | -0.102  (0.157) | |
|  |  | |  |  | |  | |  | |  | |
| **Education** |  | |  |  | |  | |  | |  | |
| No High schoold1 |  | | -0.136  (0.200) |  | | -0.060  (0.184) | |  | | 0.048  (0.198) | |
| Higher educationd2 |  | | -0.014  (0.180) |  | | 0.116  (0.196) | |  | | -0.120  (0.183) | |
|  |  | |  |  | |  | |  | |  | |
| **Income cycle** |  | |  |  | |  | |  | |  | |
| 3 weeks before pay dayd3 |  | | -0.280  (0.194) |  | | -0.203  (0.239) | |  | | -0.375  (0.239) | |
| 2 weeks before pay dayd4 |  | | 0.085  (0.248) |  | | -0.359  (0.301) | |  | | -0.472  (0.272) | |
| 1 week before pay dayd5 |  | | -0.439\*  (0.229) |  | | -0.262  (0.226) | |  | | -0.181  (0.245) | |
| No pay dayd6 |  | | 0.058  (0.184) |  | | -0.318  (0.220) | |  | | -0.220  (0.212) | |
|  |  | |  |  | |  | |  | |  | |
| **Collusion** |  | |  |  | |  | |  | |  | |
| Collusiond7 | 0.594\*\*\*  (0.154) | | 0.497\*\*\*  (0.187) | 0.213  (0.286) | | 0.324  (0.312) | | 0.621\*\*  (0.293) | | 0.607\*  (0.316) | |
|  |  | |  |  | |  | |  | |  | |
| **Cut points** |  | |  |  | |  | |  | |  | |
| C1 | -1.181  (0.114) | | -1.234  (0.365) | -0.076  (0.091) | | -0.703  (0.422) | | -0.064  (0.093) | | -0.674  (0.401) | |
| C2 | -0.751  (0.103) | | -0.799  (0.364) | 0.456  (0.092) | | -0.156  (0.418) | | 0.423  (0.094) | | -0.180  (0.400) | |
| C3 | -0.376  (0.097) | | -0.410  (0.361) | 1.138  (0.114) | | 0.539  (0.411) | | 0.961  (0.107) | | 0.362  (0.394) | |
| C4 | 0.806  (0.105) | | 0.815  (0.362) |  | |  | |  | |  | |
| **N (Observations)** | 267 | | 267 | 267 | | 267 | | 267 | | 267 | |

**Notes.** “Poster” is the treatment dummy variable; “Gender (male)” is a dummy variable with value 1 for male participants; “Age” is the age of the responder in years; “Language (isiZulu)” is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. “No degree” is a dummy variable with value 1 for those participants that did not completed High school; 2. “Higher education” is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3. “3 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the third week from the date of participation; 4. “2 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the second week from the date of participation; 5. “1 week before pay day” is a dummy variable with value 1 if the participants wage is paid in the week of the date of participation; 6. “No pay day” is a dummy variable for unemployed participants. 7. “Collusion” is a dummy variable with a value of 1 for all participants that participated in experiment on the 30th of July (=known incidence of collusion). Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

**Table S5.** Regressions of the decisions in the bribery game excluding participants with incorrect answers to test questions in part 2. Data is presented as coefficients of the probit model with robust standard errors in brackets: Model1 and 2 for the citizens’ decision; Model 3 and 4 for the public officials’ decisions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| DV binary choice: | Offer side paymentd | Offer side paymentd | Accept side paymentd | Accept side paymentd |
| **Poster treatment** | -0.237  (0.183) | -0.366\*  (0.190) | -0.357\*\*  (0.169) | -0.472\*\*\*  (0.176) |
|  |  |  |  |  |
| **Demographics** |  |  |  |  |
| Gender (male)d |  | -0.097  (0.178) |  | -0.123  (0.164) |
| Age (in years) |  | 0.020\*  (0.011) |  | -0.014  (0.011) |
| Language (isiZulu)d |  | 0.100  (0.190) |  | -0.179  (0.177) |
|  |  |  |  |  |
| **Education** |  |  |  |  |
| No high schoold1 |  | 0.037  (0.229) |  | 0.177  (0.215) |
| Higher educationd2 |  | 0.098  (0.231) |  | -0.174  (0.221) |
|  |  |  |  |  |
| **Income cycle** |  |  |  |  |
| 3 weeks before pay dayd3 |  | 0.052  (0.290) |  | -0.348  (0.278) |
| 2 weeks before pay dayd4 |  | -0.160  (0.334) |  | -0.224  (0.339) |
| 1 week before pay dayd5 |  | -1.082\*\*\*  (0.391) |  | -0.694\*\*  (0.296) |
| No pay dayd6 |  | 0.152  (0.251) |  | -0.029  (0.239) |
|  |  |  |  |  |
| **Collusion** |  |  |  |  |
| Collusiond7 | 0.643\*\*  (0.309) | 0.715\*\*  (0.325) | 0.182  (0.306) | 0.293  (0.322) |
|  |  |  |  |  |
| **Constant** | -0.636\*\*\*  (0.107) | -1.178\*\*\*  (0.425) | -0.173\*\*  (0.100) | 0.571  (0.421) |
| **N (Observations)** | 276 | 276 | 276 | 276 |

Notes: “Poster” is the treatment dummy variable; “Gender (male)” is a dummy variable with value 1 for male participants; “Age” is the age of the responder in years; “Language (isiZulu)” is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. “No degree” is a dummy variable with value 1 for those participants that did not completed High school; 2. “Higher education” is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3. “3 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the third week from the date of participation; 4. “2 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the second week from the date of participation; 5. “1 week before pay day” is a dummy variable with value 1 if the participants wage is paid in the week of the date of participation; 6. “No pay day” is a dummy variable for unemployed participants. 7. “Collusion” is a dummy variable with a value of 1 for all participants that participated in experiment on the 30th of July (=known incidence of collusion). Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

Poster Recognition

The analysis excluding participants who did not see the poster during treatment reveals a significant poster treatment effect for the descriptive norms item, when not controlling for demographic information (Model 1, Table S6). The effect for the model controlling for demographic information reveals no significant effect (Model 2, Table S6). No significant differences occur for any of the injunctive norms items (Models 3-6, Table S6). Hence, restricting the analysis to those who consciously recognized the poster and remembered it, reveals some evidence for a descriptive norms shift, while again indicating that the poster treatment left the perception of injunctive norms untouched.

**Table S6.** Regressions for the Descriptive and Injunctive norms excluding participants that reported they had not seen a poster during the Poster treatment. Data is presented as coefficients of the ordered probit model with robust standard errors in brackets

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| DV: Ordinal answer to: | Descriptive norm | Descriptive norm | Injunctive social  norm | Injunctive social norm | Injunctive personal norm | Injunctive personal norm |
| **Poster treatment** | -0.277\*  (0.164) | -0.277  (0.172) | 0.124  (0.169) | 0.141  (0.177) | -0.107  (0.167) | -0.085  (0.175) |
|  |  |  |  |  |  |  |
| **Demographics** |  |  |  |  |  |  |
| Gender (male)d |  | -0.057  (0.134) |  | 0.037  (0.144) |  | -0.088  (0.146) |
| Age (in years) |  | -0.002  (0.008) |  | -0.003  (0.009) |  | -0.010  (0.009) |
| Language (isiZulu)d |  | 0.299\*\*  (0.145) |  | -0.433\*\*\*  (0.155) |  | -0.116  (0.148) |
|  |  |  |  |  |  |  |
| **Education** |  |  |  |  |  |  |
| No high schoold1 |  | -0.207  (0.191) |  | 0.021  (0.185) |  | 0.026  (0.188) |
| Higher educationd2 |  | 0.037  (0.186) |  | 0.185  (0.209) |  | -0.113  (0.193) |
|  |  |  |  |  |  |  |
| **Income cycle** |  |  |  |  |  |  |
| 3 weeks before pay dayd3 |  | -0.406\*\*  (0.198) |  | -0.260  (0.241) |  | -0.398\*  (0.240) |
| 2 weeks before pay dayd4 |  | -0.050  (0.269) |  | -0.418  (0.312) |  | -0.382  (0.276) |
| 1 week before pay dayd5 |  | -0.403\*  (0.211) |  | -0.227  (0.217) |  | -0.210  (0.224) |
| No pay dayd6 |  | -0.074  (0.173) |  | -0.315  (0.218) |  | -0.272  (0.202) |
|  |  |  |  |  |  |  |
| **Collusion** |  |  |  |  |  |  |
| Collusiond7 | 0.627\*\*\*  (0.179) | 0.447\*\*  (0.206) | 0.097  (0.341) | 0.163  (0.366) | 0.552  (0.338) | 0.471  (0.358) |
|  |  |  |  |  |  |  |
| **Cut points** |  |  |  |  |  |  |
| C1 | -1.123  (0.105) | -1.305  (0.339) | -0.044  (0.084) | -0.503  (0.388) | -0.059  (0.086) | -0.691  (0.365) |
| C2 | -0.706  (0.095) | -0.883  (0.337) | 0.512  (0.085) | 0.070  (0.384) | 0.460  (0.087) | -0.164  (0.362) |
| C3 | -0.338  (0.089) | -0.501  (0.334) | 1.139  (0.103) | 0.711  (0.380) | 0.944  (0.097) | 0.319  (0.360) |
| C4 | 0.744  (0.095) | 0.620  (0.333) |  |  |  |  |
| **N (Observations)** | 275 | 275 | 275 | 275 | 275 | 275 |

**Notes:** “Poster” is the treatment dummy variable; “Gender (male)” is a dummy variable with value 1 for male participants; “Age” is the age of the responder in years; “Language (isiZulu)” is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. “No degree” is a dummy variable with value 1 for those participants that did not completed High school; 2.“Higher education” is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3.“3 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the third week from the date of participation; 4.“2 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the second week from the date of participation; 5. “1 week before pay day” is a dummy variable with value 1 if the participants wage is paid in the week of the date of participation; 6.“No pay day” is a dummy variable for unemployed participants. 7. “Collusion” is a dummy variable with a value of 1 for all participants that participated in experiment on the 30th of July (=known incidence of collusion). Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

Akin to an overall replication of the main poster treatment effect on descriptive norms, we also find a similar pattern for the bribery decisions when excluding those that did not consciously recall having seen the poster (see Table S7). Most importantly, the likelihood of accepting bribes as a public official decreased significantly in the period of the poster (see Model 4). Taken together, we find some evidence that the poster had an effect on collective perceptions about the frequency of bribery (descriptive social norms) as well as on the propensity to engage in bribery. As outlined in the discussion, testing more direct media (e.g. TV or Radio) to transmit the norms message could help to ensure that participants are actually exposed to the norms message.

**Table S7**. Regressions of the decisions in the bribery game excluding participants that reported they had not seen a poster during the “Poster treatment”. Data is presented as coefficients of the probit model with robust standard errors in brackets: Model1 and 2 for the citizens’ decision; Model 3 and 4 for the public officials’ decisions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| DV binary choice: | Offer side paymentd | Offer side paymentd | Accept side paymentd | Accept side paymentd |
| **Poster treatment** | -0.171  (0.198) | -0.270  (0.215) | -0.261  (0.181) | -0.432\*\*  (0.190) |
|  |  |  |  |  |
| **Demographics** |  |  |  |  |
| Gender (male)d |  | 0.021  (0.176) |  | -0.081  (0.166) |
| Age(in years) |  | 0.027\*\*  (0.011) |  | -0.006  (0.01) |
| Language (isiZulu)d |  | 0.033  (0.188) |  | -0.227  (0.177) |
|  |  |  |  |  |
| **Education** |  |  |  |  |
| No high schoold1 |  | 0.111  (0.228) |  | 0.163  (0.219) |
| Higher educationd2 |  | 0.098  (0.232) |  | -0.252  (0.234) |
|  |  |  |  |  |
| **Income cycle** |  |  |  |  |
| 3 weeks before pay dayd3 |  | -0.047  (0.307) |  | -0.313  (0.287) |
| 2 weeks before pay dayd4 |  | -0.171  (0.352) |  | -0.310  (0.346) |
| 1 week before pay dayd5 |  | -0.572\*  (0.320) |  | -0.641\*\*  (0.287) |
| No pay dayd6 |  | 0.309  (0.256) |  | 0.118  (0.242) |
|  |  |  |  |  |
| **Collusion** |  |  |  |  |
| Collusiond7 | 0.841\*\*  (0.342) | 0.850\*\*  (0.363) | 0.484  (0.334) | 0.536  (0.355) |
|  |  |  |  |  |
| **Constant** | -0.670\*\*\*  (0.100) | -1.543\*\*\*  (0.432) | -0.223\*\*  (0.093) | 0.226  (0.420) |
| **N (Observations)** | 275 | 275 | 275 | 275 |

**Notes:** “Poster” is the treatment dummy variable; “Gender (male)” is a dummy variable with value 1 for male participants; “Age” is the age of the responder in years; “Language (isiZulu)” is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. “No degree” is a dummy variable with value 1 for those participants that did not completed High school; 2. “Higher education” is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3. “3 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the third week from the date of participation; 4.“2 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the second week from the date of participation; 5. “1 week before pay day” is a dummy variable with value 1 if the participants wage is paid in the week of the date of participation; 6. “No pay day” is a dummy variable for unemployed participants. 7. “Collusion” is a dummy variable with a value of 1 for all participants that participated in experiment on the 30th of July (=known incidence of collusion). Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

Attention check

Due to internal miscommunication among the team of researchers, the final study did not include an attention check. The exclusion based on this criteria is thus not possible. The test questions however enabled us to exclude participants based on their misunderstanding of the game (see results reported below).

Collusion scheme

Here, we report the analysis of data set stemming from the day when participants coordinated their answers to obtain highest payoffs (30th of July). Figure S1 displays the answers to the incentivized social norms items. Visual inspection of Figure S1 suggests that for the descriptive norm items, participants converged on one particular answer, i.e. “7-8 out of 10 people” because this was the most frequent, hence most lucrative, answer in the previous week (Baseline treatment). Table S8 reports the results for the full sample. We note that the poster treatment effect on the perceived descriptive norms without controls does not reach statistical significance (Model 1, Table S8), while the effect is almost significant in the more comprehensive model controlling for demographic information (*p* < .1; see Model 2, Table S8). The most plausible explanation for the lack of significant differences lies in the outlined arranged coordination of answers by participants. For the injunctive norms items, we find no differences across treatments, akin to the results of the analyses reported in the main manuscript (see Models 3-6; Table S6).

**C:\Users\nkobis1\Dropbox\Work\Post-Doc\Projects\Ongoing Projects\Project - Social norms of corruption in the field\Data and Analysis\R\Norms_distribution_30.tiffFigure S1.** Distribution of social norms items for data stemming from the day for which participants reported coordinating their responses.

**Table S8**. Regressions for the Descriptive and Injunctive norms using all data. Data is presented as coefficients of the ordered probit model with robust standard errors in brackets.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| DV Ordinal answer to: | Descriptive  social  norm | Descriptive  social  norm | Injunctive social norm | Injunctive social norm | Injunctive personal norm | Injunctive personal norm |
| **Poster treatment** | -0.202  (0.124) | -0.229\*  (0.127) | 0.096  (0.134) | 0.142  (0.142) | 0.033  (0.133) | 0.054  (0.141) |
|  |  |  |  |  |  |  |
| **Demographics** |  |  |  |  |  |  |
| Gender (male)d |  | -0.054  (0.125) |  | 0.076  (0.134) |  | -0.059  (0.136) |
| Age |  | 0.001  (0.008) |  | -0.003  (0.009) |  | -0.010  (0.009) |
| Language (isiZulu)d |  | 0.339\*\*\*  (0.130) |  | -0.453\*\*\*  (0.142) |  | -0.130  (0.139) |
|  |  |  |  |  |  |  |
| **Education** |  |  |  |  |  |  |
| No high schoold1 |  | -0.282  (0.179) |  | -0.041  (0.175) |  | 0.060  (0.183) |
| Higher educationd2 |  | 0.016  (0.170) |  | 0.095  (0.188) |  | -0.142  (0.176) |
|  |  |  |  |  |  |  |
| **Income** |  |  |  |  |  |  |
| 3 weeks before pay dayd3 |  | -0.441\*\*  (0.183) |  | -0.316  (0.219) |  | -0.375\*  (0.211) |
| 2 weeks before pay dayd4 |  | -0.029  (0.240) |  | -0.318  (0.291) |  | -0.318  (0.254) |
| 1 week before pay dayd5 |  | -0.385\*  (0.200) |  | -0.207  (0.204) |  | -0.177  (0.215) |
| No pay dayd6 |  | -0.032  (0.172) |  | -0.325  (0.205) |  | -0.270  (0.188) |
|  |  |  |  |  |  |  |
| **Cut points** |  |  |  |  |  |  |
| C1 | -1.103  (0.100) | -0.894  (0.102) | -0.040  (0.083) | -0.890  (0.421) | -0.056  (0.085) | -0.868  (0.413) |
| C2 | -0.695  (0.091) | -0.478  (0.093) | 0.492  (0.084) | -0.340  (0.415) | 0.432  (0.086) | -0.375  (0.409) |
| C3 | -0.355  (0.087) | -0.121  (0.417) | 1.158  (0.102) | 0.342  (0.411) | 0.966  (0.098) | 0.161  (0.409) |
| C4 | 0.744  (0.093) | 1.029  (0.418) |  |  |  |  |
| **N (Observations)** | 311 | 311 | 311 | 311 | 311 | 311 |

**Notes:** “Poster” is the treatment dummy variable; “Gender (male)” is a dummy variable with value 1 for male participants; “Age” is the age of the responder in years; “Language (isiZulu)” is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. “No degree” is a dummy variable with value 1 for those participants that did not completed High school; 2. “Higher education” is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3. “3 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the third week from the date of participation; 4. “2 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the second week from the date of participation; 5. “1 week before pay day” is a dummy variable with value 1 if the participants wage is paid in the week of the date of participation; 6. “No pay day” is a dummy variable for unemployed participants. Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

For the decision to engage in bribery, we find a similar pattern of results to those reported in the main manuscript (see Table S9). Hence, we find no significant differences for the decision to offer a bribe as a citizen (Model 1 & Model 2). Yet, we find significant differences for the decision to accept bribes as a public official, when using the most robust test controlling for demographic information (see Model 4).

**Table S9**. Regressions of the decisions in the bribery game using all data. Data is presented as coefficients of the probit model with robust standard errors in brackets: Model1 and Model 2 for the citizens’ decision; Model 3 and Model 4 for the public officials’ decisions..

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| DV binary choice: | Offer side paymentd | Offer side paymentd | Accept side paymentd | Accept side paymentd |
| **Poster treatment** | -0.004  (0.334) | -0.085  (0.165) | -0.260\*  (0.150) | -0.393\*\*\*  (0.156) |
|  |  |  |  |  |
| **Demographics** |  |  |  |  |
| Gender (male)d |  | 0.011  (0.162) |  | -0.087  (0.153) |
| Age |  | 0.023\*\*  (0.010) |  | -0.008  (0.010) |
| Language (isiZulu)d |  | 0.088  (0.168) |  | -0.216  (0.162) |
|  |  |  |  |  |
| **Education** |  |  |  |  |
| No high schoold1 |  | -0.003  (0.218) |  | 0.188  (0.206) |
| Higher educationd2 |  | 0.084  (0.216) |  | -0.143  (0.214) |
|  |  |  |  |  |
| **Income cycle** |  |  |  |  |
| 3 weeks before pay dayd3 |  | -0.114  (0.272) |  | -0.340  (0.264) |
| 2 weeks before pay dayd4 |  | -0.163  (0.331) |  | -0.270  (0.327) |
| 1 week before pay dayd5 |  | -0.701\*\*  (0.309) |  | -0.695\*\*  (0.273) |
| No pay dayd6 |  | 0.165  (0.236) |  | 0.052  (0.229) |
|  |  |  |  |  |
| **Constant** | -0.670\*\*\*  (0.100) | -1.336\*\*\*  (0.403) | -0.223\*\*  (0.093) | 0.326  (0.409) |
| **N (Observations)** | 311 | 311 | 311 | 311 |

**Notes:** “Poster” is the treatment dummy variable; “Gender (male)” is a dummy variable with value 1 for male participants; “Age” is the age of the responder in years; “Language (isiZulu)” is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. “No degree” is a dummy variable with value 1 for those participants that did not completed High school; 2. “Higher education” is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3. “3 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the third week from the date of participation; 4. “2 weeks before pay day” is a dummy variable with value 1 if the participants wage is paid in the second week from the date of participation; 5. “1 week before pay day” is a dummy variable with value 1 if the participants wage is paid in the week of the date of participation; 6. “No pay day” is a dummy variable for unemployed participants Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

## Mediation Analysis

As outlined in the pre-registration, we conducted exploratory mediation analysis. In it, we examined whether perceived descriptive norms mediate the effect of the poster treatment on the decision to engage in bribery in the bribery game. To do so, we conducted separate mediation analyses on the binary bribery decisions as citizens and as public officials. To estimate the confidence interval we used 1000 simulations with the quasi-Bayesian Monte Carlo method based on normal approximation (Imai et al. 2010) and White’s heteroskedasticity-consistent estimator for the covariance matrix. The analyses reveal no significant mediation effects (see Table S10). Possible reasons for the lack of this significant mediation could lie in the fact that the perceived descriptive norms item does not directly refer to the specific bribery scenario in the bribery game or other possible reasons are low statistical power.

**Table S10**. Binary mediation analyses using a probit regression from Poster treatment to Descriptive Norms to ‘offer a bribe’ in case of the Citizen (left column) and to ‘accept a bribe’ for the Public Official (right column).

|  |  |  |
| --- | --- | --- |
|  | **Model 1** | **Model 2** |
| DV Binary choice: | Offer side paymentd | Accept side paymentd |
| **Average Causal Mediation Effect (ACME)** | -0.008 [-0.03; 0.01] | -0.004 [-0.028; 0.02] |
| **Average Direct Effect (ADE)** | -0.031 [-0.13;0.07] | -0.10\* [-0.21; 0.01] |
| **N(Observations)** | 287 | 287 |
| **% of effect mediated** | 8.96% | 3.2% |

**Note.** Square brackets indicate 95%-Confidence Intervals.

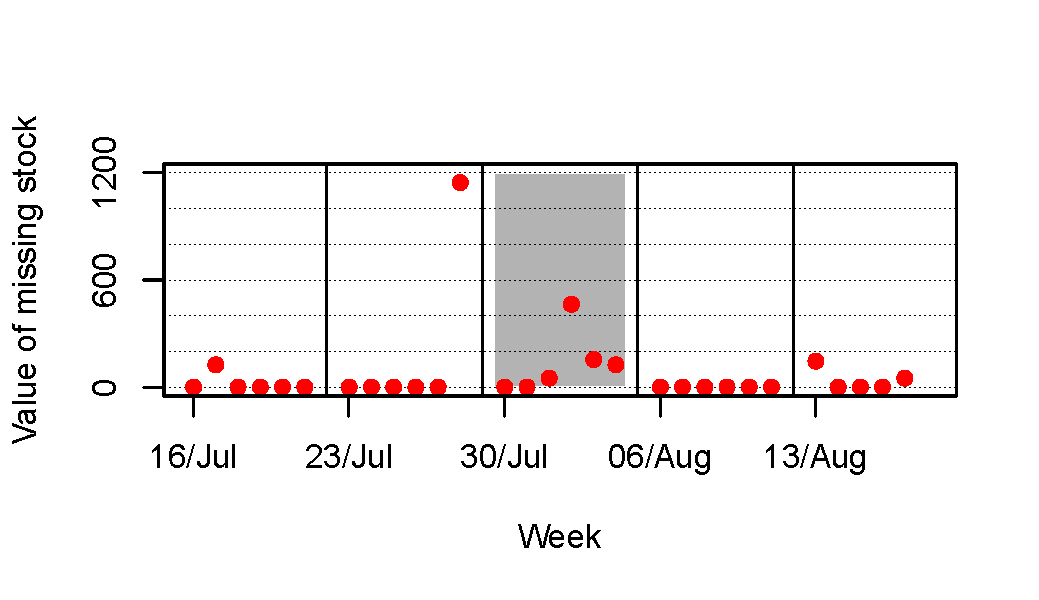
## Missing Stock data

Interviews with stakeholders revealed that the local pharmacy has been dealing with an imbalance between sold stock captured in the till system and actual stock sold. Customers who do not require a receipt upon purchase allow employees to not capture the sale of the product in the system which in turn enables them to sell it “under the counter” to a private profit. Although recent measures have successfully reduced the imbalance, it did not cease to exist. During the course of the experiment the pharmacy manager (blind to the purpose of the study) recorded the daily sales and actual stock levels of 6 products that most frequently went missing. These items were: the morning after pill, gout mix, pregnancy test, Ektoban, Flumix and Rash cream. Focussing on these few items known to ‘disappear’ allowed us to collect the data without any other pharmacy staff knowing about the assessment. This stock loss can stem from embezzlement (i.e. employees pocketing the goods) or bribery (i.e. employees selling the goods under-priced to customers).

Results Missing stock

We tested whether the Poster treatment even reduced missing stock in the local pharmacy (H4). Comparing the value of the stocks that went missing, reveals no Poster treatment effect. That is, the average financial value of the missing stock on days during which no poster was placed (*M* = 67.83, *SD* = 43.67) compared to the value during Poster days (*M* = 131.83, *SD* = 70.95) does not statistically differ (*t*(31) = -0.647, *p* = .52). The results rather point towards more valuable losses of stock during the week of the Poster treatment (see Figure S2). As we only collected seven observations during the Poster treatment, and given the generally low occurrence of missing stock the statistical power of these results is very low – and should thus be interpreted with extreme caution.

**Figure S2.** Red dots indicate the financial value of the of the missing stock for each day across all examined weeks. The white area reflects all observations coming from days during which no poster was put up – including the two weeks of the Baseline treatment. The grey shaded area indicates the seven observations stemming from the Poster treatment week.



## Corruptness rating

Given that we opted to use a lightly framed version of the bribery game, labelling the bribe as a “side payment”, we assessed whether participants perceived this transaction as corrupt, with one item (“How corrupt do you think the side payment transaction is?”). Answers were given on a seven-point Likert scale, ranging from 1 (=”not corrupt at all”) to 7 (=”very corrupt”). Below, we report the descriptive results for this perceived corruptness item. Due to a recording mistake we could only obtain the ratings for a limited sample *N* = 209. Across all treatments the vast majority of participants perceived the transaction to be “very corrupt” (65.5%). The overall average of the corruptness rating equally reveals that people considered the transaction as corrupt (*M* = 5.02, *SD* = 2.78). Comparing the means and standard deviations across treatments reveals that during the poster treatment participants perceived the transaction as less corrupt (*t*(202) = 2.06, *p* = .041). Comparing the corruptness rating across decisions in the bribery game reveals no significant differences, neither for bribery decisions as a citizen, nor as a public official (*ps* >.14, see Table S11).

One speculative post-hoc explanation for these effects is that participants who in fact believed that bribery has reduced then perceive corrupt transactions as less problematic due to its relatively less severe impact. That is, a reduction of corruption on the societal level makes one single act of bribery relatively less problematic. The lack of difference for the bribery choice is in line with the coordination account of corruption, confirming the notion that the moral evaluation of the corrupt practice (i.e. bribery) does not predict whether people pay bribes – instead the social environment leads people to engage in it.

**Table S11.** Comparison of perceived corruptness by bribe decision. Data is presented as Means with (SD).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Mean Perceived Corruptness Rating (SD)** | |  |  |
|  | **No Side Payment** | **Side Payment** | **Test statistic** | ***p*-value** |
| **Citizen** | 4.93(2.82) | 5.51(2.60) | *t*(76) = -1.311 | .194 |
| **N (Observations)** | 164 | 45 |  |  |
| **Public official** | 4.84(2.85) | 5.421(2.63) | *t*(169) = -1.483 | .140 |
| **N (Observations)** | 133 | 76 |  |  |

**Note.** Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

## Deviations from Pre-Registration

To ensure transparency, we list all deviations from the pre-registration and the amendment to the pre-registration that we uploaded on OSF below:

1. Although not previously specified, we excluded data from the 30th of July participants because one participant reported that colleagues from a nearby office coordinated their responses, which was confirmed when inspecting the data (see more details in main text). We report the results for the full data set above which are qualitatively the same.

2. Instead of collecting Poster treatment data during week 2 and week 3, we only collected Poster treatment data for week 2. This deviation is due to the fact that the data collection in week 2 went faster than expected and we reached the pre-specified goal of 100 observations within that one week.

3. We pre-registered that we would collect 100 participants for Baseline treatment and 100 participants for the Poster treatment starting the 19th of July but ended up collecting more observations and starting already the 16th of July. Due to a lack of communication between RA1 and the team of researchers, RA1 collected more data and started earlier than previously specified. We argue, that there are three main reasons to draw on the total sample of 287 observations. First, we did not change the main study design but merely uploaded the pre-registration to a later point than was initially communicated. Hence, all observations are of equal quality as no changes were made. Second, we did not look at the data nor analyse it in any way before the official period for data collection had begun. Third, the data collected prior to the date on which the pre-registration was uploaded belongs to the Baseline treatment, during which no Poster manipulation had occurred. Hence, in order to obtain highest statistical power we draw on the full data set.

4. We specified that we would collect data in week 4, in the end however had to shift data collection to week 7. This shift of data collection for the Baseline measure after the posters had been taken down was due to a misunderstanding among the team of researchers. The team of researchers did not clearly instruct RA1 to continue running at the fourth week. After realizing this mistake, the team of researchers opted for the next equivalent date (same week in the month) and pre-registered an Amendment to the original pre-registration (see <https://osf.io/8q3m9/>).

5. The pre-registration stated that we would include an attention check but the final study did not include it. The reason for this lack of an attention check lies in miscommunication among the team of researchers. Our test question assessing the understanding of the incentivized norms assessment and the bribery game however enabled us to ensure that participants carefully read the instructions to these two main measures.

6. The pre-registered prediction does not clearly reflect the actual analysis of bribing behaviour. Pre-registered prediction c) reads “Bribery game: With regards to actual behaviour in the simple bribery game we expect that in the role of citizens, participants offer less bribes”. This prediction could be interpreted that we **only** expect and test the effect for choices of citizen. However, we planned and in fact conducted analyses for both bribery choices (from citizens and public officials). The design and assessment method employed further underlines this assertion as we in fact measured both decisions with incentives. As we outline in the main text, we did in fact expect the result to be stronger for the citizens. Looking back, we should have stated in the pre-registered prediction more clearly that we plan to analyse and test the effect for both bribery choices, but expected a stronger effect for the citizen compared to the public official.

7. We slightly deviate from the data analysis strategy specified for the social norms items. That is, we ended up using ordered probit models instead of Welch t-test because probit models are a more robust to test for deviations of *distributions*. We realized after the pre-registration had been uploaded that a test comparing the shift of distributions presents a more valid test than merely analysing the means and standard deviations. The analysis using a Welch *t*-test, excluding participants based on collusion, reproduces the results reported in the manuscript (see Table S12). That is, we find a significant reduction of perceived descriptive norms during the poster treatment (*t*(184) = 2.693, *p* = .008), while no change for the social and personal injunctive norms (all *ps* > .48).

**Table S12.** Welch *t*-tests for Descriptive and Injunctive norms. Data presented in Means (SD).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Treatment** | |  |  |
|  | **Baseline** | **Poster** | **Test statistic** | ***p*-value** |
| **Descriptive Social Norm** | 3.49(1.31) | 3.02(1.47) | *t*(184) = 2.693\*\*\* | .008 |
|  |  |  |  |  |
| **Injunctive Social Norm** | 1.93(1.02) | 2.03(1.18) | *t*(181) = -0.714 | .476 |
|  |  |  |  |  |
| **Injunctive Personal Norm** | 2.01(1.11) | 1.98(1.17) | *t*(195) = 0.178 | .859 |
| **N (Observations)** | 187 | 100 |  |  |

Note. Significance coding: \**p* < .10; \*\**p* < .05; \*\*\**p* < .01.

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