UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

WORKING PAPERS SES

Combining Experimental Evidence with Machine Learning to Assess Anti-Corruption Educational Campaigns among Russian University Students

Elena Denisova-Schmidt,
Martin Huber,
Elvira Leontyeva,
and
Anna Solovyeva

N. 487
VIII.2017

Faculté des sciences économiques et sociales
Wirtschafts- und sozialwissenschaftliche Fakultät

Combining Experimental Evidence with Machine Learning to Assess Anti-Corruption Educational Campaigns among Russian University Students

Elena Denisova-Schmidt[a,*], Martin Huber[b], Elvira Leontyeva[c], and Anna Solovyeva[b]

[a] School of Humanities and Social Sciences, University of St. Gallen, Switzerland

[b] Department of Economics, University of Fribourg, Switzerland

[c] School of Social Studies and Humanities, Pacific National University, Russia

Abstract

This paper examines how anti-corruption educational campaigns affect the attitudes of Russian university students towards corruption and academic integrity. About 2,000 survey participants were randomly assigned to one of four different information materials (brochures or videos) about the negative consequences of corruption or to a control group. Using machine learning to detect effect heterogeneity, we find that various groups of students react to the same information differently. Those who commonly plagiarize, who receive excellent grades, and whose fathers are highly educated develop stronger negative attitudes towards corruption in the aftermath of our intervention. However, some information materials lead to more tolerant views on corruption among those who rarely plagiarize, who receive average or above average grades, and whose fathers are less educated. Therefore, policy makers aiming to implement anti-corruption education at a larger scale should scrutinize the possibility of (undesired) heterogeneous effects across student groups.

Keywords: Anti-Corruption Campaigns, Experiments, Corruption, Academic Integrity, University, Students, Russia.

JEL classification: D73, I23, C93.

Addresses for correspondence: Elena Denisova-Schmidt, University of St. Gallen (HSG), Gatterstr. 3, 9010 St. Gallen, Switzerland, elena.denisova-schmidt@unisg.ch; Martin Huber, University of Fribourg, Bd. de Pérolles 90, 1700 Fribourg, Switzerland, martin.huber@unifr.ch; Elvira Leontyeva, Pacific National University, ul. Tikhookeanskaya, 136, 680035 Khabarovsk, Russia, elvira.leontyeva@gmail.com; Anna Solovyeva, University of Fribourg, Bd. de Pérolles 90, 1700 Fribourg, Switzerland, anna.solovyeva@unifr.ch. *: E. Denisova-Schmidt is also affiliated with the Center for International Higher Education, Boston College, United States.

1 Introduction

Young people - and particularly students - are frequently observed to be the driving forces pushing for reforms that promote justice and fight corruption. The Rose Revolution in Georgia (2003), the Tulip Revolution in Kyrgyzstan (2005), the Arab Spring in Egypt (2011) and the student movements in Taiwan (2014), as well as the protests against corruption in Bulgaria (2013), Ukraine (2014), and Romania (2017), are just a few recent examples of student activism that resulted in social change (Altbach, 2016; Denisova-Schmidt et al., 2015; Klemenčič, 2014). In Russia, where the Putin generation is often viewed as infantile and apolitical (Kasamara and Sorokina, 2017; Volkov, 2017), the recently increased participation of youth in anti-corruption rallies is particularly interesting and controversial.

Corruption[1] has received substantial attention in Russia over the last decade, not only because of its detrimental effects on the national economy and society in general, but also because it became increasingly politicized. The Russian opposition movement has built an agenda around it, attracting a growing number of supporters, among them many high school and university students. Public anti-corruption rallies in March 2017 were even described as "angry pupils walks" in the media (Korostelev et al., 2017). On the other hand, opinion polls suggest that active participants in anti-corruption rallies are not representative of Russian youth. Less than 8% of people ages 18 – 24 have an interest in political issues and discuss them with friends or relatives, while only about 10% are ready to protest (Volkov, 2017). Overall, the stance of the Russian youth towards corruption issues is not clear, as no comprehensive study has yet scrutinized this problem on a grand scale.

This paper (a.) investigates the views of public university students in the Russian region of Khabarovsk on corruption and academic dishonesty during their studies and (b.) examines the effects of an educational campaign exposing students to various informational materials about corruption and its negative consequences. To this end, we surveyed a large sample of about 2,000 students and examined four different anti-corruption materials, namely, two videos produced by Transparency International Russia about the negative consequences of bribery and *reiderstvo* (a hostile corporate takeover) and two brochures, one a general anti-corruption brochure developed by the local authorities and the other a brochure addressing local corruption cases developed for students by the authors.

[1]Corruption can be defined as both "the abuse of entrusted power for private gain" (Transparency International) and "the lack of academic integrity"; see recent discussions with examples in Denisova-Schmidt, 2017a, 2017b; Denisova-Schmidt and de Wit, 2017.

The results of our study suggest that, while various forms of dishonesty are prevalent among the surveyed students, corruption itself is predominantly viewed as something bad – "crime" and "evil" are the strongest associations expressed in the survey. The perception of corruption at the national level is more negative than at the individual level, which points to the possibility that some respondents have adapted to the situation and might use it for their own benefit. Interest in a roundtable discussion about corruption – a proxy for inclination towards anti-corruption activities – is strikingly low: only 5% of students agreed to join this event. This is suggestive for young participants in anti-corruption rallies not being representative for the majority of Russian students, which would also be in line with national statistics (Volkov, 2017) showing low political activism among the youth.

Concerning the effectiveness of the interventions, we find that although the effects of information exposure are not very pronounced in the total sample, there exist systematic patterns across subsamples defined by certain student characteristics. One interesting result is that, while our intervention promotes awareness of the negative consequences of corruption among students who plagiarize, it leads to more tolerance of academic dishonesty and more pragmatic attitudes towards corruption among "non-plagiarists". When the total sample is split based on students' academic performance, we find that excellent academic performers are overall more responsive to the interventions, fostering negative perceptions of corruption in this subgroup. Unexpectedly, among students with lower academic performance, the video treatment about a hostile corporate raid led to more positive opinions on how corruption impacts the Russian economy, education system, and police, perhaps due to a misinterpretation of the message of the video. Furthermore, only students whose fathers are highly educated appear to respond to the interventions in the desired way: the intervention generated negative views of the consequences of corruption. On the contrary, students with less educated fathers assessed the consequences of corruption more positively after being exposed to the interventions. Finally, looking at gender differences, we find female students to have stronger negative views on corruption,[2] but to be generally less responsive to interventions and more reluctant to participate in anti-corruption activities than males.

The fact that the interventions affect various participant groups differently has policy implications, as the same information might promote desired attitudes and behaviour among some individuals while yielding unwanted results among others. Therefore, policy makers aiming to conduct large-scale anti-corruption campaigns should scrutinize the possibility of effect heterogeneity and target subgroups accordingly. In particular, our

[2]A large body of empirical literature suggests that women tend to be less corrupt; see Dimant and Tosato, 2017; Dollar et al., 2001; Frank et al., 2011; Rivas, 2013; Swamy et al., 2001.

study suggests that anti-corruption information campaigns should be focused primarily on individuals who are more likely to be involved in wrongdoing, but not those who are distant from corrupt activities.

Our paper is related to a growing number of corruption studies using lab or field experiments for causal inference (see, for example, discussions in Armantier and Boly, 2011, 2013; Barr and Serra, 2010; Findley et al., 2014; Holmes, 2015; Serra and Wantchekon, 2012). One study that is particularly interesting in our context is that of John et al. (2014), whose findings in an experiment involving US students suggest that awareness about widespread dishonesty increases personal cheating activities while monetary incentives are rather unimportant. Also, Corbacho et al. (2016) find for an information experiment in Costa Rica that individuals who believe that everyone around them is corrupt and/or who have personal experience with corruption are more prone to corruption. Finally, our paper is related to Denisova-Schmidt et al. (2015) and Denisova-Schmidt et al. (2016), which investigate the effectiveness of an anti-corruption folder developed by Transparency International among students in Lviv, Ukraine and Khabarovsk, Russia, respectively. We improve upon these previous studies by considering more and different interventions (both brochures and videos), using a larger sample, and more thoroughly investigating effect heterogeneity. For instance, the previous studies did not present differences in the effects across levels of parental education. However, similar to our comparison of "plagiarist" and "non-plagiarists", Denisova-Schmidt et al. (2015) separately consider students with and without experience in corrupt activities and also find that the intervention might increase tolerance for corrupt behaviour. As a methodological advancement compared to other empirical studies in the field, we use machine learning approaches by Belloni et al. (2014) and Athey and Imbens (2016) for conducting robustness checks and finding interesting effect heterogeneities, respectively.

The remainder of the paper is organized as follows: Section 2 explains the research design and presents the data along with descriptive statistics. Section 3 discusses the estimation methods applied in the study. The results are reported in Section 4. Section 5 concludes.

2 Research design and data

Our study is based on a large-scale randomized information campaign conducted among university students in the two cities of the Khabarovsk region – Khabarovsk and Komsomolsk-on-Amur. With populations of about 611,000 and 251,000 people (as of January 1, 2016; Federal State Statistics Service, 2016), respectively, both cities are among the largest urban centres in the Russian Far East. There are twelve universities

in Khabarovsk and two in Komsomolsk-on-Amur, with a total of around 68,700 students in the Khabarovsk region in 2015 (Obrazovanie v Rossiiskoi Federatsii, 2014).

The sample of students was drawn from four large public universities in Khabarovsk and two in Komsomolsk-on-Amur, whose total student population accounted for over 70% of all students in the region in 2016 (according to our own calculations based on the online enrolment data from the participating universities). The survey was conducted in November and early December 2016 by a group of students previously instructed by our research team. The following research design was utilized: the interviewers approached students on campuses asking questions about their major, year and education scheme (full- or part-time, on-site or distance education). Only full-time, on-site students with majors in social, technical, and natural sciences or humanities were selected for the study. First-semester bachelor and diploma students were excluded, as they could lack sufficient experience and knowledge about university life. Students in other disciplines, e.g. medicine or theology, were not selected because of their small program sizes. Eligible individuals were asked to take part in a survey about attitudes towards corruption. The questionnaire included a range of questions about the students' motivation to join the university, their academic performance, previous experiences with informal practices[3], family background, and several demographic and socioeconomic characteristics. All the interviews were conducted face-to-face and the interviewers filled out the questionnaire forms in Russian, the native language of all the persons involved.[4]

At one point during the interview, before being asked about their attitudes towards corruption and informal practices, every participant was randomized into one of the four interventions, henceforth also referred to as treatments, or a control group. Each treatment included exposure to one type of information materials about corruption and its negative consequences. The interviewer asked students to play a little game, with the subsequent question depending on the outcome of rolling a fair six-sided (cubical) die. The following assignment rule was applied: if 1 was rolled, the student received an official corruption-awareness brochure (henceforth called the "official brochure"). Rolling a 2 entailed a brochure prepared by our research team on the basis of the materials by Transparency International, a global anti-corruption NGO, and tailored to the student audience (henceforth called the "tailored brochure"). For a 3 or 4, a short video by Transparency International Russia about the negative consequences of bribery or about hostile corporate takeovers ("reiderstvo"), respectively, was shown. 5 and 6 entailed

[3]Here, "informal practices" refers to the practical norms that people often use in order to get things done.

[4]Two sensitive questions about the informal practices exercised by the students in their studies and whether they had encountered bribery at the university were asked on a separate card and filled out by the interviewees themselves.

assignment to the control (or non-treated) group. The brochures were professionally printed and the video materials were shown on tablets brought along by the interviewers.

The official brochure was, in our opinion, overwhelming for readers, as it contained too much detailed information, as well as long, redundant definitions, and it was pedantically written and typed in a very small font. It included a portrait of the Russian president Vladimir Putin and his quotation about the fight against corruption, long definitions of corruption and anti-corruption activities, a list of laws and directives against corruption, some corruption-related statistics, examples of anti-corruption measures in the Khabarovsk region, an enumeration of punishments for corruption-related crimes, and a long list of contact information for various responsible authorities (see Appendix B for the brochure translations).

The tailored brochure was created by our research team with students in mind. We provided succinct and practical information, knowing the experiment participants would not have enough time to absorb less important details. Simple, everyday language was preferred over complex official formulations. The tailored brochure contained a short definition of corruption, a graph describing different types of corruption, some statistics, the negative consequences of bribery (a common corruption type), examples of recent corruption crimes in the Khabarovsk region, and a call for action.

The videos about the negative consequences of bribery and hostile corporate raiding were part of the "Ten Faces of Corruption" cartoon series developed by Transparency International Russia within the educational project "The Alphabet of a Corruption Fighter". The project targeted high-school and university students and attempted to clarify basic corruption-related concepts. The cartoons only offered video content without audio commentary. The characters were rats depicting the essence of various corrupt behaviours. The video about bribery (Transparency International Russia, 2015a) featured a suicide bomber rat giving a bribe to a security officer when boarding an airplane. The bomb then exploded in the air destroying the plane. The video about *reiderstvo* (Transparency International Russia, 2015b) showed rat police kicking out and arresting the director of a well-functioning cheese factory and overtaking his position.[5]

After the individuals assigned to the treatment groups had familiarized themselves with the respective information materials, the interviewers continued with questions about the informal practices used by students, their moral assessment of corruption, and whether corruption could be eradicated in Russia. At the end of the interview, students were invited to participate in a roundtable discussion taking place on International

[5] *Reiderstvo*, or asset-grabbing, is the illicit acquisition of a business or part of a business in Russia; for more, see, for example, Louise Shelley and Judy Deane, `http://reiderstvo.org/`.

Anti-Corruption Day[6] (December 9, 2016) at the Pacific National University in Khabarovsk. Finally, respondents were asked whether they would take part in a similar survey next year. Interested students could leave their contact information. All of the post-intervention questions described above were used to construct outcome variables.

Despite the aim to randomize treatment assignment by rolling a die, the distribution of numbers 1 to 6 in the total sample is not perfectly uniform (as would be expected in case of proper randomization), as illustrated in Figure 1. In fact, Pearson's chi-squared test clearly rejects the uniform distribution at the 5% level of statistical significance.[7] The probabilities of the brochure treatments (treatments 1 and 2 in Figure 1) were higher compared to the video treatments (3 and 4) and the control group (5 and 6).

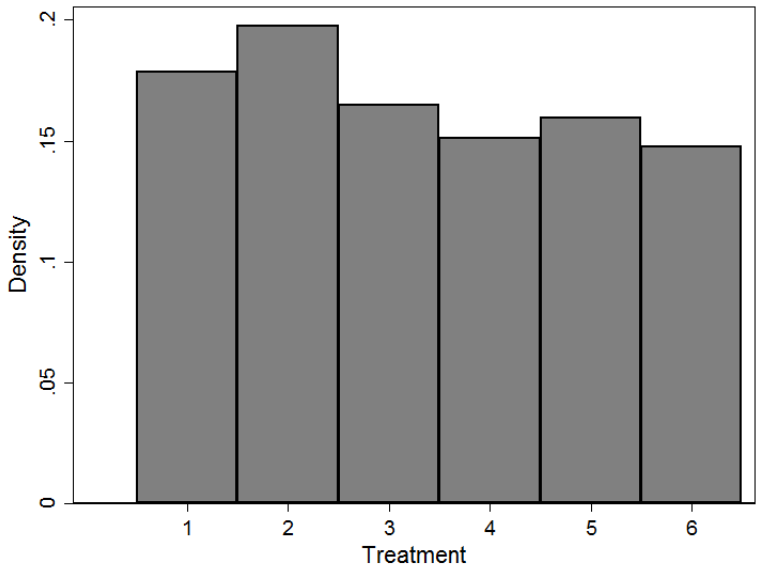


Figure 1: Treatment distribution in the total sample

Despite such imbalances in treatment assignment, the average values of the covariates measured in the survey prior to treatment are balanced across the treatment states similarly to a successfully randomized experiment. F-tests conducted for each of the 87 observed covariates revealed hardly any statistically significant (at the 5% level) differences across treatment groups; see Table A1 in Appendix A. One exception was the indicator for having a family with both parents with a p-value of 0.04. For four further covariates – namely, the indicators for a family with no parents, father's occupation: househusband or a retiree, having a Unified State Exam (USE) score of more than 250

[6]The General Assembly of the United Nations introduced Anti-Corruption Day in 2005 in order "to raise awareness of corruption and of the role of the Convention [against Corruption, resolution 58/4] in combating and preventing it" `http://www.un.org/en/events/anticorruptionday/background.shtml`.

[7]The test statistic and the critical value are equal to 21.08 and 9.24, respectively.

(highest quantile), and having a job related to students' education – differences were statistically significant at the 10% level. Given the large number of covariates tested, we are not concerned by these few rejections. Nevertheless, as a robustness check, we ran the main estimations presented in Section 4 on the subsample of students surveyed by the interviewers for whom proper treatment randomization (i.e. uniformly distributed numbers 1 to 6) could not be rejected at the 10% level when conducting F-tests separately for each interviewer. Neither covariate balance nor treatment effect estimates in this subsample differed to an important extent from our main results based on the full sample.

Our final sample is comprised of 2,003 individuals, 75% (1,501) of whom study in Khabarovsk and 25% (502) in Komsomolsk-on-Amur. Table 1 shows the means and the standard deviations for selected covariates[8] for the 1,741 respondents without any missing values in these variables. The typical respondent is about 20 years old and just over half of the sample (54%) is female. About one third of the individuals reported to spend on average less than 10,000 rubles ($155)[9] a month, while 55% of the respondents have average monthly expenditures between 10,000 and 20,000 rubles ($155-310), and 12% spend more than 20,000 rubles. The university education of slightly more than half of the students is state-financed. About 37% of the survey participants study humanities, 31% major in social sciences, 25% are in technical sciences, and 8% specialize in natural sciences.

Concerning previous experiences with wrongdoing and corruption, the self-assessed use of connections is more common than bribery for solving problems. Yet the incidence of additional payments in school prior to tertiary education (e.g. fees for construction, maintenance and school repairs, guarding, etc.) is non-negligible and higher than gift-giving to teachers.[10] Strikingly, about 34% of the participants claimed to have encountered forms of wrongdoing (e.g. bribes, gifts, and help from on-site proctors) during the USE, while 21% encountered some wrongdoing in the university admission process (e.g. cases of admission commissions, instances of preferential admissions). Reportedly, the incidence of bribery at universities after admission appears to be less of an issue. Concerning the use of informal practices by respondents while studying, by far the most

[8]The full list of covariates can be found in Table A1 in Appendix A.

[9]Based on the average of daily exchange rates from the Russian Central Bank in the period January 1 to November 1, 2016.

[10]Primary and secondary education is predominantly public and tuition-free in Russia. However, informal payments at schools are widespread and range from covering basic maintenance of a school building and the provision of school guarding to some excessive school needs. While voluntary additional school payments have been ruled legal, the fees are often coercive in reality. Also, gift-giving to teachers can be voluntary or forced by parental committees or even the teachers themselves. Our data do not allow the distinguishing between the two types in both the cases of additional school fees and gift-giving to teachers.

popular practice is partial plagiarism when writing papers, followed by crib sheets and copying from others at exams. The least common form of academic dishonesty is asking professors for preferential treatment (e.g. easing requirements, exemption from exams, etc.).

Table 1: Summary statistics for selected covariates

Variables	Mean	SD
Age	19.99	1.23
Gender: female (binary)	0.54	0.50
Monthly spending: <10k rub (binary)	0.33	0.47
Monthly spending: 10–20k rub (binary)	0.55	0.50
Monthly spending: >20k rub (binary)	0.12	0.33
Education is state financed (binary)	0.53	0.50
Major: humanities (binary)	0.37	0.48
Major: social sciences (binary)	0.31	0.46
Major: technical sciences (binary)	0.25	0.43
Major: natural sciences (binary)	0.08	0.27
Average grade (1=satisfactory...5=excellent)	3.26	1.12
Family or friends solved problems using connections (1=never...5=system.)	2.34	1.04
Family or friends solved problems using bribes (1=never...5=system.)	1.92	0.98
Frequency of giving gifts to teachers at school (1=never...5=system.)	2.80	1.08
Frequency of paying additional fees at school (1=never...5=system.)	3.22	1.20
Encountered (personally/friends/relatives) wrongdoing at USE (binary)	0.34	0.47
Encountered (personally/friends/relatives) wrongdoing at univ.admission (binary)	0.21	0.41
Encountered bribery at university (1=never...5=system.)	1.55	0.86
How often do you use the following practices? (1=never...5=system.)		
Use crib sheets at exams	2.90	1.17
Submit papers downloaded from the internet	2.25	1.26
Buy papers from friends or specialized firms	1.85	1.15
Write papers plagiarizing some chapters from the internet	3.27	1.20
Copy from other students during exams or tests	2.85	1.17
Deceive professors about study problems	1.95	1.09
Ask professors for preferential treatment	1.63	0.95

Item non-response is low in our data. In about 4% of the observations, the students' year of birth is missing. Non-response in other demographic, socioeconomic, or individual characteristics is even rarer. About 3% of the students were reluctant to reveal their own informal practices (concerning the question "How often do you use the following

practices. . . ?") and whether they encountered bribery at the university. In the estimation part of our analysis, observations with missing values in the covariates are kept in the data. Missing values in covariates are replaced with zeros while dummy variables indicating missing observations are generated.

3 Methods

Two econometric methods are employed to evaluate the effects of the anti-corruption information materials on the outcomes of interest. Our first strategy is to take differences in mean outcome values between each of the treatment groups and the control group. This yields unbiased estimates of the causal treatment effects if randomization was successful, meaning that any observed and unobserved pre-treatment characteristics are comparable across the treatment groups.

Although the observed pre-treatment characteristics are well balanced in the sample, a few minor differences are still present. As a robustness check (the results of which are presented in Appendix A), our second strategy aims at controlling for such differences. Specifically, our goal is to control for the confounders of both treatment assignment and outcome of interest in a flexible functional way, potentially allowing interactions as well as higher order terms of confounders to enter both the treatment and outcome equations. To this end, we apply the method of Belloni et al. (2014) to select confounders as well as non-linear functions thereof based on LASSO regression, a machine learning approach permitting variable selection in high dimensional data. More concisely, this so-called post-double-selection method relies on a two-step, LASSO-based variable selection of control variables that are either predictive for the treatment or the outcome (or both). Thereafter, the treatment effects of interest are estimated by an OLS regression of the outcome on the treatment indicators and the selected controls. In our study, we generated higher order terms up to the third order and interaction terms up to the second order for all covariates using the "Generate.Powers" command in the "LARF" package by An and Wan (2016) for the statistical software "R". We added these terms to the list of potential controls for the two-step LASSO procedure and estimated the treatment effects using the "rlassoEffects" command with its default options in the R package "hdm" by Spindler et al. (2016).

Our investigation goes beyond the analysis of treatment effects in the total population and explores the effect heterogeneity of the intervention across various subgroups. As for control variable selection, we opted for a data-driven rather than ad-hoc approach for finding the most substantial effect heterogeneities in an "honest" way, preventing inferential multiple testing issues related to "snooping" for subgroups with significant

effects. To this end, we employ the causal tree approach by Athey and Imbens (2016) to partition data recursively into subpopulations that react differently to the treatment. This technique builds on regression trees, yet another machine learning approach, but with some modifications to allow for causal inference on treatment effects and finding the largest effect heterogeneities across subgroups, rather than mere outcome prediction. Specifically, the method "honestly" uses only part of the sample for subgroup definition (or partitioning) and the other part of the sample to estimate treatment effects within the defined subgroups, which prevents the aforementioned inference problems. We use the "causalTree" package by Athey et al. (2016) to apply causal tree estimation with cross-validation[11] in order to detect those important effect heterogeneities that occur across a range of different outcomes. We note that, as the method only allows for single rather than multiple treatments, we define a binary treatment indicator that is one in case of one of the four interventions (die numbers 1 to 4) and zero otherwise (numbers 5 and 6) when searching for effect heterogeneities.

4 Results

4.1 Effect estimates in the total sample

Table 2 reports the estimation results based on the mean differences in the total sample. Column 2 presents the mean outcomes in the control group. The third column contains the estimated treatment effects of the official corruption-awareness brochure. Columns 4 and 5 give the heteroscedasticity robust standard errors and the p-values, respectively. The estimates for the brochure developed by our team and the videos about the negative consequences of bribery and a hostile corporate raid, i.e. *reiderstvo*, are presented in columns 6 – 8, 9 – 11, and 12 – 14, respectively.

Looking at the control means, we find that informal practices are judged to be quite prevalent among the surveyed students. The use of crib sheets during exams, partial plagiarism from the internet, and copying from other students during exams is thought to occur rather often, as their control means are close to 4 on a scale from 1 (never) to 5 (systematically). Also, submitting papers downloaded from the internet, buying papers, deceiving professors, and asking for preferential treatment are considered common practices with control means around 3. Three treatments – the two brochures and the

[11] We set the minimum subgroup size to 200 observations (with a minimum of 100 treated and 100 non-treated), which is in our case sufficiently small to filter out the most important effect heterogeneities, while all other parameters of the procedure are set to their default values.

Table 2: Effects in the total sample

Outcome	Control	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
	mean	Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.93	-0.02	0.06	0.77	-0.02	0.06	0.70	0.01	0.06	0.87	-0.02	0.07	0.75
Submit papers downloaded from the internet	3.49	0.02	0.07	0.81	-0.01	0.07	0.93	0.13	0.07	0.08	0.00	0.08	0.96
Buy papers	3.21	0.11	0.07	0.13	0.07	0.07	0.36	0.08	0.08	0.28	0.08	0.08	0.33
Write papers plagiarizing some chapters from the internet	3.75	0.09	0.07	0.17	0.18	0.06	0.00	0.09	0.07	0.20	0.08	0.07	0.23
Copy from other students during exams or tests	3.74	0.12	0.07	0.07	0.09	0.06	0.16	0.11	0.07	0.11	0.06	0.07	0.42
Deceive professors about study problems	3.10	-0.04	0.08	0.62	0.06	0.08	0.47	-0.01	0.08	0.92	0.06	0.08	0.45
Ask professors preferential treatment	2.47	-0.04	0.08	0.57	0.12	0.08	0.13	0.07	0.08	0.39	0.04	0.08	0.61
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)													
When a course is useless	2.63	0.27	0.09	0.00	0.03	0.08	0.72	-0.01	0.09	0.89	0.03	0.09	0.75
When students work	2.98	0.16	0.08	0.06	0.01	0.08	0.90	0.03	0.09	0.76	-0.08	0.09	0.37
If it is hard to learn material	2.71	0.17	0.08	0.04	-0.01	0.08	0.88	0.04	0.08	0.61	-0.09	0.09	0.31
Always acceptable	2.11	0.09	0.07	0.24	-0.02	0.07	0.80	0.09	0.08	0.23	0.00	0.08	0.99
Never acceptable	3.00	-0.13	0.09	0.16	-0.16	0.09	0.07	-0.09	0.09	0.33	-0.01	0.10	0.92
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	1.92	0.10	0.07	0.19	0.03	0.07	0.69	0.04	0.08	0.59	0.03	0.08	0.72
Means of income	2.85	0.19	0.09	0.03	0.05	0.09	0.61	0.13	0.09	0.15	-0.06	0.10	0.50
Crime	4.08	-0.02	0.08	0.84	-0.06	0.07	0.38	0.06	0.08	0.45	-0.01	0.08	0.90
Means to solve problems	3.07	0.08	0.08	0.32	0.05	0.08	0.53	-0.02	0.09	0.82	-0.09	0.09	0.31
Compensation for low salaries	2.59	0.13	0.09	0.14	0.09	0.09	0.28	-0.01	0.09	0.90	-0.03	0.09	0.77
Evil	3.83	0.00	0.08	0.99	0.01	0.08	0.93	-0.01	0.09	0.91	-0.11	0.10	0.25
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.34	0.03	0.07	0.68	-0.05	0.07	0.47	-0.06	0.08	0.44	0.01	0.08	0.92
Your quality of life	2.39	0.03	0.07	0.68	-0.07	0.07	0.29	-0.04	0.07	0.56	-0.01	0.08	0.90
Your education	2.22	-0.01	0.07	0.94	-0.02	0.07	0.78	-0.09	0.07	0.20	-0.03	0.08	0.68
Your health	2.28	0.02	0.07	0.78	-0.05	0.07	0.46	-0.02	0.07	0.83	-0.10	0.07	0.19
Your safety	2.09	-0.04	0.07	0.53	-0.03	0.07	0.63	-0.09	0.07	0.18	-0.09	0.07	0.20
Russian economy	1.52	0.06	0.05	0.30	-0.01	0.05	0.86	0.01	0.05	0.84	0.07	0.06	0.27
Russian politics	1.58	0.03	0.06	0.56	-0.01	0.05	0.82	-0.01	0.05	0.80	0.03	0.06	0.65
Russian education	1.55	0.08	0.05	0.14	0.02	0.05	0.74	-0.01	0.05	0.82	0.04	0.06	0.50
Russian health system	1.54	0.13	0.06	0.03	0.01	0.05	0.84	0.03	0.06	0.61	0.05	0.06	0.42
Russian police	1.44	0.10	0.06	0.08	-0.01	0.05	0.82	0.01	0.06	0.83	0.06	0.06	0.28
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.52	-0.06	0.07	0.38	-0.10	0.07	0.13	-0.12	0.07	0.10	0.00	0.08	1.00
Take part in roundtable? (0=no, 1=yes)	0.05	-0.02	0.01	0.15	-0.02	0.01	0.21	-0.02	0.01	0.04	0.00	0.01	0.86
Take part in survey next year? (0=no, 1=yes)	0.12	-0.04	0.02	0.08	-0.03	0.02	0.12	-0.04	0.02	0.07	-0.02	0.02	0.29

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and 'p-v.' stands for p-value.

anti-bribery video – have statistically significantly (up to the 10% level) influenced some of these perceptions and other outcomes.

The perceived frequencies of submitting papers downloaded from the internet, partial plagiarism, and copying from others during exams are increased, respectively, by the anti-bribery video (significant at the 10% level), the tailored brochure (significant at the 1% level), and the official brochure (significant at the 10% level). Furthermore, the official brochure augments the acceptance of informal practices in situations when a course is seen as useless (significant at the 1% level), when students work outside of the university (significant at the 10% level), and when the course material is difficult to learn (significant at the 5% level). The tailored brochure significantly (at the 10% level) reduces disapproval of informal practices.

What stands out when inspecting the moral assessment of corruption is that "crime" and "evil" are the strongest associations with corruption, whereas defining corruption as a necessity is the least popular option. The only treatment to statistically significantly (at the 5% level) affect these outcomes is the official brochure, which increases the tendency to link corruption to a means of income. Interestingly, students perceive corruption's impact on an aggregate level (i.e. its effects on the Russian economy, politics, education and health systems, and police) more negatively, on average, than on a personal level (i.e. on "your" career opportunities, quality of life, education, health, and safety). The official brochure leads to a more positive perception of corruption effects on the Russian health system and police (significant at the 5% and 10% levels, respectively), but no other statically significant treatment effects are found for this group of the outcomes. The students' opinion on whether corruption can be eradicated in Russia lies somewhat more on the negative side and is not significantly affected by our intervention.

As far as participation in future corruption-awareness activities is concerned, the students expressed very little interest: only 5% agreed to join a roundtable discussion about corruption, and 12% were willing to take part in a next-year survey about corruption. The intervention seems to lower these figures even further, although few effects are statistically significant. The intention to participate in a subsequent survey declines by 4 percentage points under the official brochure and the anti-bribery video (both significant at the 10% level), while the latter video also slightly lowers interest in the roundtable (significant at the 5% level).

As a robustness check, we apply the post-double-selection method by Belloni et al. (2014) to control for the covariates and their transformations when estimating treatment effects. The results are presented in Table A2 in Appendix A. The effects are very similar in terms of size and significance to the mean difference estimates presented here. Minor differences are that the impacts of the official brochure on the perceived frequency of

copying from other students during exams and on the implications of corruption for the Russian health system are not statistically significant at conventional levels.

4.2 Heterogeneity of effects

Applying the recursive partitioning algorithm of Athey and Imbens (2016) to our data indicates that the treatment effects for several outcomes differed across the following subgroups: students who often or systematically write papers plagiarizing some chapters from the internet versus those who do it never, seldom, or sometimes; participants with excellent grades versus those who get satisfactory to good grades; individuals whose fathers obtained higher education or an academic degree versus those whose fathers obtained only secondary education.

Comparing the 912 students who often or systematically write papers partially plagiarized from the internet (Table 3) to the 1,034 students who plagiarize never, seldom, or sometimes (Table 4), it is striking how the former report a higher frequency of informal practices among students, demonstrate more acceptance of dishonesty, have a more positive view of the impact of corruption on society and their own lives, and are more reluctant to participate in future corruption-awareness activities.[12] Focusing on statistically significant treatment effects, we find them to be mostly negative for regular "plagiarists" and positive for those who use this practice less frequently. In the aftermath of our intervention, attitudes towards informal practices and corruption converge between the two subgroups. Another interesting observation is that the video about a hostile corporate raid left "non-plagiarists" unaffected.[13]

Concerning the reported occurrence of corrupt academic behaviour, the official brochure lowers the frequency of deceiving professors (significant at the 5% level) and asking them for preferential treatment (significant at the 10% level), as reported by regular "plagiarists". In contrast, the reported frequency of informal practices increases significantly (at the 1-10% levels) among the treated "non-plagiarists", especially those who read the tailored brochure. The acceptance of informal practices tends to decline among treated "plagiarists", whereas it rises among treated "non-plagiarists". In particular, the official brochure increases (significant at the 5% level) the acceptance of academic dishonesty in various situations among students who rarely copy from the internet.

[12]Most of the differences in control means between the two subgroups are statically significant at the 5% or 10% levels.

[13]Except for the intention to participate in the next year's survey.

Table 3: Effects among students who often/systematically write papers plagiarizing some chapters from the internet

Outcome	Control mean	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
		Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	4.15	-0.08	0.08	0.32	-0.08	0.08	0.31	-0.09	0.09	0.28	0.00	0.08	0.99
Submit papers downloaded from the internet	3.68	-0.04	0.10	0.69	-0.08	0.10	0.44	0.04	0.11	0.69	0.11	0.10	0.28
Buy papers	3.32	0.04	0.11	0.70	-0.06	0.11	0.57	0.01	0.12	0.91	0.08	0.12	0.53
Write papers plagiarizing some chapters from the internet	4.12	0.06	0.08	0.48	0.06	0.08	0.45	-0.03	0.09	0.77	0.08	0.09	0.36
Copy from other students during exams or tests	3.92	0.04	0.10	0.68	0.05	0.09	0.61	0.04	0.10	0.67	0.12	0.10	0.22
Deceive professors about study problems	3.33	-0.31	0.11	0.01	-0.18	0.11	0.10	-0.16	0.12	0.16	-0.06	0.12	0.62
Ask professors preferential treatment	2.58	-0.19	0.11	0.08	-0.11	0.11	0.33	0.02	0.12	0.85	-0.06	0.12	0.64
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)													
When useless course	2.88	-0.01	0.13	0.94	-0.07	0.12	0.59	-0.07	0.13	0.59	-0.09	0.13	0.47
When students work	3.14	0.12	0.12	0.30	-0.03	0.12	0.80	0.04	0.13	0.75	-0.13	0.13	0.33
If hard to learn material	2.94	-0.03	0.12	0.79	-0.22	0.12	0.07	-0.11	0.13	0.37	-0.27	0.13	0.03
Always acceptable	2.32	-0.23	0.11	0.04	-0.32	0.11	0.00	-0.06	0.12	0.60	-0.20	0.12	0.08
Never acceptable	2.88	0.03	0.13	0.85	-0.05	0.13	0.67	0.05	0.13	0.72	-0.01	0.14	0.96
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	2.03	0.06	0.12	0.62	-0.19	0.10	0.07	-0.08	0.12	0.49	-0.08	0.11	0.46
Means of income	3.03	0.11	0.14	0.42	-0.05	0.14	0.70	0.02	0.14	0.91	-0.10	0.14	0.47
Crime	4.11	0.01	0.11	0.93	-0.06	0.10	0.55	0.05	0.12	0.66	-0.03	0.11	0.80
Means to solve problems	3.32	-0.04	0.12	0.73	-0.14	0.12	0.25	-0.22	0.14	0.11	-0.17	0.14	0.20
Compensation for low salaries	2.85	0.08	0.14	0.55	-0.14	0.14	0.30	-0.20	0.14	0.15	-0.26	0.14	0.07
Evil	3.80	0.05	0.13	0.71	0.05	0.12	0.71	0.06	0.13	0.66	-0.21	0.15	0.16
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.56	-0.07	0.11	0.53	-0.30	0.11	0.01	-0.25	0.12	0.04	-0.09	0.12	0.47
Your quality of life	2.53	-0.03	0.11	0.80	-0.23	0.10	0.03	-0.19	0.12	0.10	-0.03	0.12	0.83
Your education	2.37	-0.15	0.11	0.17	-0.20	0.10	0.05	-0.22	0.11	0.04	-0.09	0.12	0.44
Your health	2.36	0.03	0.11	0.77	-0.16	0.11	0.14	-0.08	0.11	0.51	-0.10	0.11	0.35
Your safety	2.13	-0.01	0.11	0.92	-0.11	0.10	0.29	-0.13	0.11	0.23	-0.04	0.11	0.69
Russian economy	1.56	0.06	0.09	0.47	-0.08	0.07	0.31	-0.13	0.08	0.11	0.06	0.09	0.56
Russian politics	1.60	0.02	0.09	0.81	-0.05	0.08	0.54	-0.14	0.08	0.09	0.05	0.09	0.61
Russian education	1.59	0.00	0.08	0.98	-0.07	0.08	0.34	-0.09	0.08	0.24	0.00	0.09	0.96
Russian health system	1.51	0.09	0.08	0.29	-0.01	0.08	0.86	-0.04	0.08	0.57	0.08	0.09	0.37
Russian police	1.35	0.10	0.08	0.19	0.05	0.08	0.48	0.03	0.08	0.71	0.11	0.08	0.17
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.38	0.04	0.10	0.69	-0.10	0.10	0.31	-0.05	0.11	0.63	0.04	0.11	0.75
Take part in roundtable? (0=no, 1=yes)	0.04	0.00	0.02	0.90	-0.01	0.02	0.77	-0.02	0.02	0.18	0.00	0.02	0.89
Take part in survey next year? (0=no, 1=yes)	0.09	-0.01	0.03	0.69	-0.01	0.03	0.79	-0.01	0.03	0.80	0.00	0.03	1.00

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and '*p*-v.' stands for *p*-value.

Table 4: Effects among students who never/seldom/sometimes write papers plagiarizing some chapters from the internet

Outcome	Control mean	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
		Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.77	-0.02	0.09	0.86	0.02	0.08	0.83	0.07	0.09	0.44	-0.05	0.10	0.58
Submit papers downloaded from the internet	3.33	0.02	0.11	0.83	0.06	0.10	0.56	0.20	0.10	0.05	-0.05	0.11	0.65
Buy papers	3.11	0.17	0.10	0.11	0.19	0.10	0.06	0.16	0.11	0.14	0.09	0.11	0.43
Write papers plagiarizing some chapters from the internet	3.45	0.08	0.10	0.41	0.24	0.09	0.01	0.18	0.09	0.06	0.02	0.10	0.84
Copy from other students during exams or tests	3.59	0.16	0.09	0.09	0.12	0.09	0.17	0.16	0.10	0.10	-0.01	0.11	0.94
Deceive professors about study problems	2.91	0.19	0.12	0.11	0.26	0.11	0.02	0.12	0.12	0.31	0.18	0.12	0.11
Ask professors preferential treatment	2.40	0.05	0.11	0.64	0.32	0.11	0.00	0.08	0.11	0.46	0.15	0.11	0.17
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)													
When useless course	2.43	0.49	0.12	0.00	0.09	0.11	0.42	0.03	0.12	0.79	0.08	0.12	0.50
When students work	2.84	0.17	0.11	0.13	0.04	0.11	0.71	0.03	0.11	0.82	-0.05	0.12	0.68
If hard to learn material	2.55	0.31	0.11	0.01	0.12	0.11	0.25	0.16	0.11	0.15	0.07	0.12	0.54
Always acceptable	1.95	0.35	0.10	0.00	0.19	0.09	0.04	0.22	0.10	0.03	0.17	0.11	0.11
Never acceptable	3.11	-0.26	0.12	0.04	-0.21	0.12	0.08	-0.18	0.13	0.16	0.00	0.14	0.99
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	1.83	0.14	0.10	0.17	0.20	0.10	0.04	0.16	0.10	0.10	0.14	0.11	0.18
Means of income	2.71	0.23	0.12	0.06	0.13	0.12	0.29	0.22	0.12	0.06	-0.06	0.14	0.69
Crime	4.07	-0.03	0.11	0.75	-0.07	0.10	0.51	0.05	0.10	0.67	-0.05	0.11	0.63
Means to solve problems	2.88	0.13	0.11	0.21	0.23	0.11	0.04	0.15	0.11	0.18	-0.05	0.12	0.67
Compensation for low salaries	2.38	0.15	0.11	0.17	0.32	0.11	0.00	0.15	0.11	0.20	0.17	0.12	0.15
Evil	3.90	-0.06	0.11	0.60	-0.09	0.11	0.43	-0.13	0.12	0.28	-0.03	0.12	0.80
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.17	0.10	0.10	0.32	0.16	0.09	0.07	0.09	0.10	0.35	0.10	0.10	0.33
Your quality of life	2.28	0.05	0.10	0.61	0.05	0.09	0.56	0.08	0.10	0.43	0.00	0.10	0.98
Your education	2.10	0.11	0.10	0.24	0.15	0.10	0.12	0.01	0.10	0.93	0.03	0.10	0.78
Your health	2.20	0.02	0.10	0.88	0.06	0.10	0.54	0.06	0.10	0.56	-0.07	0.10	0.47
Your safety	2.04	-0.06	0.09	0.51	0.07	0.09	0.47	-0.04	0.09	0.69	-0.11	0.10	0.27
Russian economy	1.47	0.05	0.07	0.42	0.07	0.06	0.27	0.15	0.07	0.04	0.11	0.08	0.16
Russian politics	1.55	0.03	0.07	0.64	0.03	0.07	0.61	0.11	0.07	0.15	0.04	0.08	0.61
Russian education	1.51	0.15	0.07	0.04	0.11	0.07	0.10	0.08	0.07	0.28	0.12	0.08	0.11
Russian health system	1.56	0.19	0.09	0.03	0.06	0.07	0.41	0.10	0.08	0.21	0.07	0.08	0.43
Russian police	1.52	0.11	0.08	0.17	-0.05	0.07	0.48	0.02	0.08	0.81	0.06	0.09	0.48
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.62	-0.13	0.10	0.20	-0.10	0.09	0.27	-0.15	0.10	0.14	-0.03	0.10	0.80
Take part in roundtable? (0=no, 1=yes)	0.05	-0.03	0.02	0.07	-0.03	0.02	0.14	-0.03	0.02	0.16	-0.01	0.02	0.73
Take part in survey next year? (0=no, 1=yes)	0.15	-0.05	0.03	0.06	-0.05	0.03	0.07	-0.07	0.03	0.02	-0.06	0.03	0.06

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and 'p-v.' stands for p-value.

Among students who plagiarize rarely, the pragmatic vision of corruption is reinforced by the treatments. Statements like "Corruption is... a necessity", "a means of income", "a means to solve problems", and "a compensation for low salaries" are positively affected, particularly by the tailored brochure (the effects are significant at the 5% level), as shown in Table 4. In the subgroup of those who often plagiarize from the internet, the tailored brochure decreases the tendency to view corruption as a necessity, while the video about *reiderstvo* reduces the view that corruption is a compensation for low salaries (both effects are statistically significant at the 10% level). Regarding the influence of corruption, the tailored brochure and the anti-bribery video lead to a more negative perception of the impact of corruption on personal career opportunities, quality of life, education, and Russian politics among "plagiarists" (the effects on an individual's life are significant the 5% level; the effect on Russian politics is significant at the 10% level). In the subgroup of "non-plagiarists", the tailored brochure, the official brochure, and the video about bribery have positive effects on the perceived impact of corruption on, respectively: personal career opportunities (significant at the 10% level), the Russian education and health systems (significant at the 5% level), and the economy (significant at the 5% level).

When it comes to the interest in participating in future corruption-awareness activities, only the students who are less prone to plagiarizing from the internet are significantly affected by the treatments: the probability of taking part in the next year's survey drops significantly (at up to the 10% level) by 5-7 percentage points. The official brochure also reduces (significant at the 10% level) the interest in the roundtable discussion by 3 percentage points in this subgroup.

We next examine the treatment effects among students with differing academic performance. The total sample is split into 996 individuals with excellent average grades (Table 5) and 997 students who usually get satisfactory to good grades (Table 6). Although both subgroups show similar attitudes towards informal practices and corruption, our intervention affects the two types of students differently. Excellent academic performers appear overall to be somewhat more sensitive to the provided information.

The treatments increase significantly (at the 5% level) the reported frequency of corrupt practices used to prepare papers among excellent students. In this subgroup, the official brochure enhances the acceptance of dishonest academic behaviour when a course is seen as useless, while the video about a hostile corporate raid reduces the acceptance of informal practices when it is hard to learn the material (both effects are significant at the 10% level). Among students with satisfactory or good grades, the acceptance of informal practices is strengthened by the official brochure when a course is seen as useless

Table 5: Effects among students with excellent grades (4-5; 5)

Outcome	Control mean	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
		Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.93	0.08	0.09	0.38	-0.01	0.09	0.94	0.04	0.09	0.68	0.06	0.09	0.50
Submit papers downloaded from the internet	3.41	0.09	0.10	0.37	0.06	0.10	0.52	0.24	0.10	0.02	0.12	0.11	0.27
Buy papers	3.12	0.28	0.10	0.01	0.12	0.10	0.24	0.18	0.11	0.10	0.23	0.11	0.03
Write papers plagiarizing some chapters from the internet	3.69	0.21	0.09	0.02	0.24	0.09	0.01	0.15	0.10	0.11	0.20	0.10	0.04
Copy from other students during exams or tests	3.77	0.12	0.10	0.21	0.03	0.09	0.72	0.14	0.10	0.13	0.15	0.10	0.14
Deceive professors about study problems	3.12	-0.01	0.11	0.94	0.04	0.12	0.72	0.02	0.12	0.84	0.00	0.12	0.98
Ask professors preferential treatment	2.43	0.01	0.11	0.90	0.04	0.11	0.71	0.12	0.11	0.28	0.09	0.11	0.41
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)													
When useless course	2.57	0.23	0.13	0.07	-0.05	0.12	0.68	-0.01	0.12	0.96	-0.04	0.13	0.76
When students work	2.88	0.19	0.12	0.10	0.08	0.12	0.50	0.01	0.12	0.96	-0.18	0.12	0.14
If hard to learn material	2.59	0.14	0.11	0.22	-0.04	0.11	0.75	0.04	0.12	0.74	-0.21	0.12	0.07
Always acceptable	1.97	0.12	0.10	0.25	-0.04	0.10	0.68	0.13	0.10	0.20	0.04	0.11	0.70
Never acceptable	3.00	-0.08	0.13	0.55	-0.14	0.13	0.28	-0.09	0.13	0.50	-0.02	0.14	0.87
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	1.82	0.08	0.10	0.44	0.06	0.10	0.54	0.13	0.11	0.20	0.03	0.10	0.78
Means of income	2.74	0.30	0.13	0.02	-0.02	0.13	0.85	0.17	0.13	0.21	0.13	0.14	0.35
Crime	4.16	0.03	0.10	0.81	-0.05	0.10	0.60	0.07	0.10	0.49	0.05	0.10	0.63
Means to solve problems	3.05	0.05	0.11	0.66	-0.07	0.12	0.57	-0.15	0.12	0.21	-0.21	0.13	0.10
Compensation for low salaries	2.58	0.12	0.13	0.37	0.13	0.13	0.32	0.06	0.12	0.63	-0.13	0.13	0.33
Evil	3.99	-0.03	0.11	0.77	-0.05	0.11	0.67	-0.06	0.12	0.62	-0.20	0.14	0.13
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.33	0.00	0.11	0.97	-0.13	0.10	0.18	-0.09	0.11	0.41	-0.08	0.11	0.48
Your quality of life	2.39	-0.02	0.11	0.85	-0.21	0.10	0.03	-0.14	0.11	0.19	-0.10	0.10	0.33
Your education	2.18	-0.08	0.10	0.38	-0.19	0.09	0.04	-0.09	0.10	0.38	-0.10	0.10	0.33
Your health	2.30	-0.10	0.10	0.33	-0.17	0.10	0.08	-0.02	0.11	0.82	-0.30	0.10	0.00
Your safety	2.11	-0.15	0.10	0.13	-0.18	0.10	0.06	-0.15	0.10	0.15	-0.16	0.10	0.11
Russian economy	1.53	0.05	0.08	0.54	-0.14	0.07	0.04	-0.02	0.08	0.84	-0.08	0.08	0.28
Russian politics	1.55	0.07	0.08	0.38	-0.06	0.07	0.43	-0.03	0.08	0.67	-0.09	0.08	0.25
Russian education	1.56	0.04	0.07	0.64	-0.10	0.07	0.17	-0.06	0.07	0.38	-0.09	0.08	0.25
Russian health system	1.51	0.13	0.08	0.13	-0.03	0.07	0.66	0.02	0.08	0.80	-0.02	0.08	0.77
Russian police	1.46	0.05	0.08	0.51	-0.09	0.07	0.20	-0.03	0.08	0.75	-0.06	0.08	0.50
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.58	-0.08	0.10	0.43	-0.09	0.10	0.36	-0.15	0.10	0.15	0.06	0.11	0.57
Take part in roundtable? (0=no, 1=yes)	0.03	0.00	0.02	0.88	0.01	0.02	0.67	-0.01	0.02	0.72	0.04	0.02	0.11
Take part in survey next year? (0=no, 1=yes)	0.13	-0.01	0.03	0.71	-0.02	0.03	0.48	-0.07	0.03	0.01	-0.05	0.03	0.06

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and '*p*-v.' stands for *p*-value.

Table 6: Effects among students with satisfactory to good grades (3; 3-4; 4)

Outcome	Control mean	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
		Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.93	-0.11	0.09	0.21	-0.03	0.08	0.74	0.00	0.09	1.00	-0.09	0.10	0.33
Submit papers downloaded from the internet	3.56	-0.05	0.10	0.64	-0.07	0.10	0.49	0.03	0.11	0.81	-0.11	0.11	0.34
Buy papers	3.27	-0.05	0.10	0.67	0.03	0.10	0.77	0.00	0.11	0.99	-0.07	0.12	0.55
Write papers plagiarizing some chapters from the internet	3.82	-0.04	0.10	0.72	0.12	0.09	0.19	0.01	0.10	0.92	-0.03	0.10	0.74
Copy from other students during exams or tests	3.71	0.12	0.09	0.21	0.14	0.09	0.12	0.09	0.10	0.40	-0.04	0.11	0.74
Deceive professors about study problems	3.08	-0.07	0.12	0.56	0.08	0.11	0.46	-0.03	0.12	0.79	0.12	0.12	0.29
Ask professors preferential treatment	2.52	-0.10	0.11	0.36	0.18	0.11	0.09	0.02	0.12	0.86	-0.01	0.11	0.93
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)													
When useless course	2.68	0.32	0.12	0.01	0.11	0.11	0.34	0.00	0.12	0.97	0.10	0.12	0.42
When students work	3.07	0.13	0.11	0.24	-0.05	0.11	0.65	0.02	0.12	0.85	0.04	0.12	0.77
If hard to learn material	2.83	0.22	0.12	0.06	0.01	0.11	0.91	0.04	0.11	0.75	0.05	0.12	0.70
Always acceptable	2.23	0.08	0.11	0.47	0.01	0.10	0.95	0.06	0.11	0.60	-0.04	0.11	0.74
Never acceptable	2.99	-0.17	0.12	0.16	-0.17	0.12	0.15	-0.06	0.13	0.62	0.01	0.13	0.96
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	2.02	0.13	0.11	0.23	0.00	0.10	0.98	-0.02	0.11	0.83	0.04	0.11	0.73
Means of income	2.96	0.09	0.12	0.46	0.10	0.12	0.43	0.06	0.13	0.62	-0.25	0.13	0.05
Crime	4.00	-0.06	0.11	0.56	-0.07	0.10	0.50	0.01	0.11	0.91	-0.08	0.11	0.47
Means to solve problems	3.10	0.11	0.11	0.33	0.15	0.11	0.18	0.11	0.13	0.38	0.01	0.13	0.93
Compensation for low salaries	2.61	0.14	0.12	0.25	0.05	0.12	0.67	-0.07	0.13	0.60	0.07	0.13	0.58
Evil	3.69	0.01	0.12	0.95	0.05	0.12	0.65	0.00	0.13	1.00	-0.04	0.13	0.76
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.33	0.06	0.10	0.53	0.03	0.10	0.77	-0.02	0.10	0.82	0.09	0.11	0.40
Your quality of life	2.38	0.09	0.10	0.36	0.06	0.10	0.51	0.06	0.10	0.55	0.09	0.11	0.44
Your education	2.27	0.09	0.10	0.38	0.14	0.10	0.15	-0.07	0.10	0.44	0.04	0.11	0.70
Your health	2.24	0.16	0.10	0.13	0.08	0.10	0.45	0.01	0.11	0.91	0.12	0.11	0.28
Your safety	2.07	0.06	0.10	0.53	0.10	0.10	0.29	-0.04	0.09	0.69	-0.02	0.10	0.83
Russian economy	1.51	0.06	0.07	0.40	0.11	0.07	0.11	0.04	0.07	0.62	0.21	0.09	0.02
Russian politics	1.61	-0.01	0.08	0.87	0.02	0.07	0.76	0.02	0.08	0.84	0.13	0.09	0.13
Russian education	1.55	0.12	0.08	0.13	0.11	0.07	0.10	0.04	0.08	0.63	0.15	0.08	0.06
Russian health system	1.57	0.13	0.08	0.13	0.04	0.07	0.57	0.05	0.08	0.56	0.10	0.08	0.22
Russian police	1.43	0.15	0.08	0.07	0.06	0.07	0.37	0.04	0.08	0.62	0.18	0.08	0.04
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.46	-0.05	0.10	0.64	-0.11	0.10	0.24	-0.08	0.11	0.43	-0.06	0.10	0.58
Take part in roundtable? (0=no, 1=yes)	0.06	-0.03	0.02	0.08	-0.04	0.02	0.03	-0.04	0.02	0.01	-0.04	0.02	0.02
Take part in survey next year? (0=no, 1=yes)	0.13	-0.01	0.03	0.71	-0.02	0.03	0.48	-0.07	0.03	0.01	-0.05	0.03	0.06

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and '*p*-v.' stands for *p*-value.

(significant at the 5% level) and when it is hard to learn the material (significant at the 10% level).

Concerning the moral assessment of corruption, the tendency to consider corruption as a means of income is amplified (significant at the 5% level) by the official brochure among excellent academic performers, whereas it is reduced (significant at the 10% level) by the *reiderstvo* video in the subgroup of students with satisfactory or good grades. Turning to the perceived impact of corruption, the treatments affect the opinions of excellent students mostly negatively. However, only the tailored brochure has systematically significant (at up to the 10% level) negative effects on the perceived impacts of corruption on personal quality of life, education, health, safety, as well as on the Russian economy in the top academic performers subgroup. Additionally, the video about a hostile corporate raid leads to a more negative perception of corruption for personal health in this subgroup (the effect is significant at the 1% level). In contrast, opinions about aggregate effects of corruption among students with satisfactory to good grades are mostly positively affected by the intervention. The *reiderstvo* video amplifies the positive perceptions of the influence of corruption on the Russian economy (significant at the 5% level), education system (significant at the 10% level), and police (significant at the 5% level), whereas the official brochure strengthens the positive view of corruption effect only on the Russian police (significant at the 10% level).

The interest in the future roundtable discussion about corruption is diminished significantly (at up to the 10% level) by about 4 percentage points by all the treatments among students with satisfactory to good grades. The video treatments have the same effects on the likelihood of participating in the future survey for both subgroups of participants, reducing it by 5-7 percentage points (significant at up to the 10% level).

Finally, the total sample is split by fathers' highest educational attainment into 934 students whose fathers obtained higher education or an academic degree (Table 7) and 670 whose fathers received only secondary education (Table 8). When comparing the mean outcomes of the non-treated between both subgroups, the students with more educated fathers appear to be more tolerant to dishonest academic behaviour and corruption and more reluctant to participate in future corruption-awareness activities.

Focusing on the treatment effects, the intervention seems work in an unexpected direction among students with less educated fathers: the official brochure increases significantly (at up to the 10% level) the acceptance of corrupt academic behaviour in various situations listed in the questionnaire, while the anti-bribery video also enhances acceptance when the course material is hard to learn (significant at the 5% level), and the tailored brochure reduces disapproval of informal practices (significant at the 10% level). Among students with more educated fathers, the tailored brochure leads to reporting a

Table 7: Effects among students whose fathers attained higher education or an academic title

Outcome	Control	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
	mean	Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.93	-0.07	0.09	0.48	-0.05	0.09	0.56	-0.03	0.09	0.73	-0.07	0.10	0.48
Submit papers downloaded from the internet	3.52	-0.06	0.11	0.59	-0.07	0.10	0.51	0.05	0.11	0.68	0.00	0.11	1.00
Buy papers	3.23	0.00	0.11	0.99	0.03	0.11	0.76	0.05	0.11	0.69	0.10	0.12	0.41
Write papers plagiarizing some chapters from the internet	3.74	0.05	0.10	0.65	0.20	0.09	0.03	0.09	0.10	0.38	0.14	0.11	0.19
Copy from other students during exams or tests	3.78	0.03	0.10	0.73	0.03	0.09	0.78	0.06	0.10	0.57	0.06	0.11	0.61
Deceive professors about study problems	3.11	-0.11	0.12	0.36	-0.06	0.12	0.62	-0.05	0.12	0.68	0.10	0.12	0.43
Ask professors preferential treatment	2.52	-0.08	0.11	0.50	0.01	0.12	0.96	0.10	0.12	0.37	0.08	0.12	0.52
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)													
When useless course	2.68	0.23	0.13	0.07	-0.01	0.12	0.94	0.01	0.13	0.91	-0.05	0.14	0.70
When students work	3.02	0.15	0.12	0.19	-0.03	0.12	0.81	-0.01	0.12	0.96	-0.20	0.12	0.10
If hard to learn material	2.79	0.14	0.12	0.25	0.04	0.12	0.73	-0.02	0.12	0.87	-0.04	0.13	0.73
Always acceptable	2.18	0.07	0.11	0.50	-0.02	0.10	0.83	0.10	0.11	0.35	0.01	0.12	0.94
Never acceptable	3.00	-0.08	0.13	0.53	-0.09	0.12	0.48	-0.11	0.13	0.39	-0.07	0.14	0.64
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	2.00	0.11	0.11	0.31	-0.07	0.10	0.51	0.03	0.11	0.75	0.03	0.11	0.76
Means of income	2.93	0.21	0.13	0.10	-0.10	0.13	0.42	0.11	0.13	0.40	-0.30	0.14	0.04
Crime	4.05	0.05	0.11	0.63	-0.10	0.11	0.34	0.04	0.11	0.68	-0.10	0.11	0.38
Means to solve problems	3.25	0.01	0.11	0.94	-0.17	0.12	0.15	-0.07	0.12	0.54	-0.20	0.13	0.13
Compensation for low salaries	2.73	0.14	0.13	0.26	0.00	0.13	0.97	-0.10	0.13	0.43	-0.25	0.14	0.07
Evil	3.81	-0.02	0.12	0.88	0.02	0.12	0.86	0.00	0.12	0.99	-0.20	0.14	0.15
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.41	0.00	0.11	0.97	-0.15	0.10	0.16	-0.16	0.11	0.14	0.05	0.12	0.68
Your quality of life	2.47	-0.02	0.11	0.89	-0.16	0.10	0.12	-0.20	0.11	0.05	-0.02	0.12	0.90
Your education	2.38	-0.12	0.11	0.24	-0.26	0.10	0.01	-0.28	0.10	0.01	-0.25	0.12	0.04
Your health	2.37	-0.02	0.11	0.84	-0.21	0.11	0.06	-0.10	0.11	0.36	-0.25	0.11	0.02
Your safety	2.12	-0.04	0.11	0.72	-0.14	0.10	0.19	-0.19	0.10	0.06	-0.10	0.11	0.36
Russian economy	1.63	-0.08	0.08	0.30	-0.08	0.07	0.25	-0.09	0.08	0.27	0.08	0.10	0.41
Russian politics	1.67	-0.03	0.08	0.68	-0.10	0.08	0.22	-0.05	0.08	0.51	0.05	0.10	0.59
Russian education	1.66	-0.01	0.08	0.92	-0.07	0.07	0.34	-0.11	0.08	0.14	0.01	0.09	0.88
Russian health system	1.63	0.12	0.09	0.17	-0.07	0.07	0.31	-0.01	0.08	0.90	0.01	0.09	0.88
Russian police	1.58	-0.03	0.08	0.70	-0.12	0.08	0.12	-0.14	0.08	0.09	0.04	0.10	0.71
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.49	-0.06	0.10	0.55	-0.11	0.10	0.28	-0.14	0.11	0.21	0.04	0.11	0.75
Take part in roundtable? (0=no, 1=yes)	0.03	-0.02	0.01	0.11	0.00	0.02	0.80	-0.02	0.01	0.13	0.01	0.02	0.54
Take part in survey next year? (0=no, 1=yes)	0.09	-0.02	0.03	0.57	0.00	0.03	0.87	0.00	0.03	0.94	-0.02	0.03	0.53

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and '*p*-v.' stands for *p*-value.

Table 8: Effects among students whose fathers attained secondary education

Outcome	Control mean	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
		Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.96	-0.10	0.11	0.38	-0.07	0.10	0.49	0.02	0.11	0.87	0.04	0.11	0.68
Submit papers downloaded from the internet	3.55	-0.04	0.12	0.70	-0.06	0.11	0.57	0.13	0.12	0.27	-0.05	0.13	0.68
Buy papers	3.27	0.03	0.13	0.82	-0.03	0.12	0.82	0.01	0.13	0.93	-0.01	0.13	0.95
Write papers plagiarizing some chapters from the internet	3.77	0.08	0.12	0.50	0.11	0.11	0.32	0.07	0.12	0.55	0.06	0.12	0.64
Copy from other students during exams or tests	3.79	0.14	0.11	0.19	0.08	0.11	0.49	0.06	0.12	0.58	0.01	0.12	0.97
Deceive professors about study problems	3.14	-0.16	0.14	0.26	-0.04	0.13	0.77	0.06	0.15	0.67	0.09	0.14	0.54
Ask professors preferential treatment	2.44	-0.08	0.13	0.56	0.12	0.13	0.36	-0.09	0.14	0.54	0.00	0.13	0.98
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)													
When useless course	2.53	0.43	0.16	0.01	0.03	0.15	0.81	-0.02	0.15	0.89	0.07	0.15	0.63
When students work	2.83	0.29	0.15	0.05	0.03	0.15	0.84	0.13	0.15	0.38	0.01	0.16	0.96
If hard to learn material	2.56	0.48	0.14	0.00	-0.02	0.14	0.87	0.30	0.14	0.04	-0.14	0.14	0.33
Always acceptable	2.01	0.22	0.13	0.08	0.00	0.12	0.99	0.17	0.13	0.22	-0.02	0.13	0.86
Never acceptable	3.04	-0.20	0.16	0.22	-0.28	0.16	0.07	-0.14	0.16	0.38	0.08	0.16	0.62
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	1.87	0.07	0.12	0.55	0.04	0.12	0.74	0.05	0.13	0.73	-0.07	0.12	0.59
Means of income	2.63	0.08	0.16	0.61	0.20	0.15	0.20	0.21	0.16	0.19	0.12	0.16	0.44
Crime	4.12	-0.06	0.13	0.65	-0.02	0.12	0.88	0.03	0.14	0.83	0.02	0.13	0.91
Means to solve problems	2.98	0.11	0.14	0.46	0.12	0.15	0.41	-0.06	0.16	0.72	-0.12	0.16	0.43
Compensation for low salaries	2.47	0.18	0.15	0.25	0.02	0.14	0.89	0.00	0.15	0.98	0.07	0.15	0.66
Evil	3.84	-0.01	0.15	0.94	0.07	0.14	0.62	0.04	0.15	0.79	-0.05	0.16	0.77
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.27	0.04	0.13	0.77	0.09	0.12	0.46	0.03	0.14	0.82	-0.11	0.12	0.37
Your quality of life	2.28	0.07	0.13	0.61	-0.08	0.12	0.51	0.15	0.13	0.28	-0.02	0.13	0.88
Your education	2.07	0.10	0.12	0.41	0.21	0.12	0.07	0.09	0.12	0.45	0.17	0.13	0.17
Your health	2.14	0.15	0.13	0.27	0.18	0.12	0.14	0.09	0.13	0.48	0.05	0.13	0.69
Your safety	2.00	0.09	0.12	0.48	0.19	0.12	0.13	0.11	0.13	0.37	0.04	0.13	0.74
Russian economy	1.36	0.21	0.09	0.02	0.13	0.08	0.09	0.11	0.08	0.16	0.18	0.09	0.05
Russian politics	1.46	0.11	0.09	0.21	0.12	0.08	0.11	-0.02	0.08	0.84	0.05	0.09	0.55
Russian education	1.43	0.18	0.09	0.06	0.15	0.09	0.09	0.10	0.09	0.26	0.13	0.09	0.15
Russian health system	1.42	0.16	0.09	0.09	0.18	0.09	0.06	0.08	0.09	0.41	0.23	0.10	0.02
Russian police	1.29	0.32	0.10	0.00	0.15	0.09	0.08	0.14	0.08	0.08	0.22	0.09	0.01
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.52	0.00	0.12	0.98	-0.13	0.12	0.26	-0.12	0.12	0.32	0.05	0.12	0.66
Take part in roundtable? (0=no, 1=yes)	0.05	0.00	0.03	0.99	-0.02	0.02	0.32	-0.02	0.02	0.44	-0.01	0.03	0.75
Take part in survey next year? (0=no, 1=yes)	0.15	-0.07	0.04	0.05	-0.05	0.04	0.18	-0.06	0.04	0.09	-0.03	0.04	0.42

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and 'p-v.' stands for p-value.

higher frequency of partial plagiarism (significant at the 5% level), while the official brochure increases the acceptance of academic wrongdoing when a course is seen as useless (significant at the 10% level). The video about *reiderstvo* weakens the tendency to see corruption as a means of income (significant at the 5% level) and a compensation for low salaries among respondents with better-educated fathers (significant at the 10% level).

In this subgroup, the tailored brochure and both videos have some negative effects on students' opinions about the influence of corruption on individual quality of life (the effect of the anti-bribery video is significant at the 10% level), education (the effects are significant at the 5% level), health (the effect of the tailored brochure is significant at the 10% level; the effect of the *reiderstvo* video is significant at the 5% level), safety, and the Russian health system (effects of the anti-bribery video are significant at the 10% level for both). On the other hand, the treatments, especially the brochures, increase the positive perception of corruption on the global level, i.e. the impact of corruption on the Russian economy (significant at up to the 10% level), education and health systems (the brochures' effects are significant at the 10% level), and police (significant at up to the 10% level) among students with less educated fathers. When looking at the interest in future corruption-awareness activities, the official brochure and the anti-bribery video decrease significantly (at the 10% level) the probability of self-expressed participation in the next year's survey for the subgroup whose fathers had only secondary education, while no statistically significant effects are found in the other subgroup.

Tables A3 and A4 in Appendix A present the treatment effects estimated separately for female and male students, respectively. The investigation of heterogeneities across gender, although not suggested by the recursive partitioning algorithm, is nevertheless standard in the literature (see for example Swamy et al., 2001; and Jetter and Walker, 2015). Non-treated females appear to have stronger negative opinions about the influence of corruption on their lives and to be more reluctant to participate in future corruption-awareness activities than non-treated males. With fewer significant treatment effects, female students are, on average, less responsive to the intervention than males. Lastly, male students are significantly (at the 10% level) dissuaded by the treatments from participation in corruption-awareness activities, whereas the participation propensity of females remains unaffected.

5 Conclusion

In this paper, we examined the attitudes of Russian students towards dishonest academic practices and corruption and used an experimental design to investigate the effects of an educational campaign consisting of four distinct interventions: two brochures (one

officially provided by the local authorities and one particularly tailored to students) and two videos (about bribery and hostile corporate takeovers) informing students about corruption and its negative consequences. The results suggest that various forms of academic cheating are quite common at Russian universities. At the same time, the attitudes towards corruption are generally negative among the surveyed students. Corruption is believed to have particularly detrimental consequences at the aggregate, i.e. national, level, while its effects at the individual level are viewed somewhat less negatively.

Even though the effects of the interventions were not too pronounced in the total sample, we found interesting patterns of impacts, partly going in opposite directions, in subsamples defined along several dimensions, such as students' plagiarizing behaviour, academic performance, fathers' highest education attainment, and students' gender. One interesting result is that the interventions promote awareness of the negative consequences of corruption among students who plagiarize, while they lead to more tolerance towards academic dishonesty and more pragmatic attitudes towards corruption among "non-plagiarists". Furthermore, excellent students and students with well-educated fathers predominantly responded to interventions in the desired way by generating more negative views on corruption, while this is not the case for students with lower academic performance or less educated fathers. Finally, while female students have a more negative opinion about corruption than males, they are generally less responsive to interventions. This demonstrates that information campaigns may affect various groups substantially differently. While the attitudes and behaviour of some individuals might be slanted in the desired direction, the very same information can produce detrimental effects by increasing the awareness of corruption among other groups of individuals. Thus, it appears critical for policy makers to reflect on population heterogeneity before conducting large-scale educational campaigns in order to avoid undesired effects.

Comparing the effectiveness across the four interventions, we conclude that the official brochure was not able to promote negative attitudes towards corruption. In fact, it increased the acceptance of academic cheating and led to a more positive view of corruption in the total sample and among students who do not plagiarize and whose fathers are less educated. The tailored brochure performed better, as it led to stronger negative perceptions of corruption among excellent students, plagiarists, and students with more educated fathers. However, it had counterintuitive effects on the perception of corruption among students with less educated fathers. As for the videos, they were less effective than the printed materials. The anti-bribery cartoon proved to be more effective than the video about hostile corporate raiding. Hence, both the content and the form of information materials appear to matter. When preparing an educational campaign,

policy makers should reflect carefully about tailoring the information materials to the respective target audience in order to maximize effectiveness.

Acknowledgments

This study was conducted with financial support provided by the Center for Governance and Culture in Europe at the University of St. Gallen (HSG), Switzerland. The sponsor influenced neither the research design nor the interpretation of the results.

References

Altbach, P. G. (2016). *Global perspectives on higher education*. John Hopkins University Press, Baltimore.

An, W. and Wan, X. (2016). R: Local average response functions for instrumental variable estimation of treatment effects. `https://cran.r-project.org/web/packages/LARF/`, accessed June 2017.

Armantier, O. and Boly, A. (2011). A controlled field experiment on corruption. *European Economic Review*, 55(8):1072 – 1082.

Armantier, O. and Boly, A. (2013). Comparing corruption in the laboratory and in the field in burkina faso and in canada. *The Economic Journal*, 123(573):1168–1187.

Athey, S. and Imbens, G. (2016). Recursive partitioning for heterogeneous causal effects. *Proceedings of the National Academy of Sciences*, 113(27):7353–7360.

Athey, S., Imbens, G., Kong, Y., and Ramachandra, V. (2016). An introduction to recursive partitioning for heterogeneous causal effects estimation using causalTree package. `https://github.com/susanathey/causalTree`, accessed June 2017.

Barr, A. and Serra, D. (2010). Corruption and culture: An experimental analysis. *Journal of Public Economics*, 94(11):862 – 869.

Belloni, A., Chernozhukov, V., and Hansen, C. (2014). Inference on treatment effects after selection among high-dimensional controls. *Review of Economic Studies*, 81(2):608–650.

Corbacho, A., Gingerich, D. W., Oliveros, V., and Ruiz-Vega, M. (2016). Corruption as a self-fulfilling prophecy: Evidence from a survey experiment in Costa Rica. *American Journal of Political Science*, 60(4):1077–1092.

Denisova-Schmidt, E. (2017a). The challenges of academic integrity in higher education: Current trends and outlook. *CIHE Perspectives 5*. Boston: Boston College.

Denisova-Schmidt, E. (2017b). *Corruption, BRIC universities and the effect on global higher education: causes, techniques and remedies*. Basingstoke, New York: Palgrave Macmillan. forthcoming in 2017.

Denisova-Schmidt, E. and de Wit, H. (2017). The global challenge of corruption in higher education. *IAU HORIZONS*, 22(1):28–29.

Denisova-Schmidt, E., Huber, M., and Leontyeva, E. (2016). Do anti-corruption educational campaigns reach students? Some evidence from Russia and Ukraine. *Educational Studies Moscow*, (1):61–83.

Denisova-Schmidt, E., Huber, M., and Prytula, Y. (2015). An experimental evaluation of an anti-corruption intervention among Ukrainian university students. *Eurasian Geography and Economics*, 56(6):713–734.

Dimant, E. and Tosato, G. (2017). Causes and effects of corruption: What has past decade's research taught us? A survey. *Journal of Economic Surveys*. forthcoming in 2017.

Dollar, D., Fisman, R., and Gatti, R. (2001). Are women really the fairer sex? Corruption and women in government. *Journal of Economic Behavior and Organization*, 46(4):423–429.

Federal State Statistics Service (2016). Chislennost naselenia Rossiyskoy Federatsiy po municipalnim obrazovaniyam [The population of the Russian Federation by municipalities]. Online bulletin, Federal State Statistics Service. `http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/afc8ea004d56a39ab251f2bafc3a6fce`, accessed June 2017.

Findley, M., Nielson, D., and Sharman, J. (2014). *Global shell games*. Cambridge University Press, Cambridge.

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

Holmes, L. (2015). *Corruption: a very short introduction*. Oxford University Press, Oxford.

Jetter, M. and Walker, J. K. (2015). Good girl, bad boy: Corrupt behavior in professional tennis. Working paper, Center for Research in Economics and Finance (CIEF).

John, L. K., Loewenstein, G., and Rick, S. I. (2014). Cheating more for less: Upward social comparisons motivate the poorly compensated to cheat. *Organizational Behavior and Human Decision Processes*, 123(2):101 – 109.

Kasamara, V. and Sorokina, A. (2017). Rebuilt empire or new collapse? Geopolitical visions of russian students. *Europe-Asia Studies*, 69(2):262–283.

Klemenčič, M. (2014). Student power in a global perspective and contemporary trends in student organising. *Studies in Higher Education*, 39(3):396–411.

Korostelev, A., Romenskiy, V., and Sagieva, K. (Hosts) (2017). Progulka rasserzhennyh shkol'nikov: kak pokolenie YouTube vyshlo na ulicu i kak ego nakazhut [Angry pupils walk: how the YouTube generation went out into the streets and how it will be punished]. In Pushkarev, V., Yapparova, L., Borzunova, M., Alexandrov, A., Zhelvnov, A., Ruzavin, P. et al., editor, *Zdes' i sejchas. Vechernee shou [Here and now. The evening show]*. Dozhd, Moscow, Russia. `https://tvrain.ru/teleshow/vechernee_shou/on_vam_ne_dimon-430761/`, accessed June 2017.

Obrazovanie v Rossiiskoi Federatsii: 2014 [Education in the Russian Federation: 2014] (2014). Statistical compilation, National Research Institute "Higher School of Economics", Moscow, Russia.

Rivas, M. F. (2013). An experiment on corruption and gender. *Bulletin of Economic Research*, 65(1):10–42.

Serra, D. and Wantchekon, L. (2012). *New advances in experimental research on corruption*. Emerald, Bingley, U.K.

Spindler, M., Chernozhukov, V., and Hansen, C. (2016). R: High-dimensional metrics. `https://cran.r-project.org/web/packages/hdm/`, accessed June 2017.

Swamy, A., Knack, S., Lee, Y., and Azfar, O. (2001). Gender and corruption. *Journal of Development Economics*, 64(1):25 – 55.

Transparency International Russia (2015a). Episode 1: Bribe. YouTube video. `https://www.youtube.com/watch?v=zGeworhwEFo`, accessed July 2017.

Transparency International Russia (2015b). Episode 3: Corruption corporate raid. YouTube video. `https://www.youtube.com/watch?v=4aTjUyX67xc`, accessed July 2017.

Volkov, D. (2017). Effekt ot filma On vam ne Dimon pochti proshel [The effect of the film "He is not Dimon to you" has almost passed]. *Gazeta.ru*. https://www.gazeta.ru/comments/2017/05/25_a_10691315.shtml, accessed June 2017.

Appendicies

Appendix A Additional tables

Table A1: F-tests of covariate balance

Covariate variables	F-test	Prob $>F$
University 1	1.13	0.34
University 2	0.45	0.77
University 3	0.52	0.72
University 4	1.41	0.23
University 5	0.94	0.44
University 6	1.17	0.32
University 7	1.26	0.28
Major: humanities	0.27	0.90
Major: social sciences	0.53	0.72
Major: technical sciences	0.87	0.48
Major: natural sciences	1.14	0.34
Current academic year: bachelor	0.37	0.83
Current academic year: master	1.03	0.39
Current academic year: diploma	1.40	0.23
Reason for university education: to obtain good education	1.00	0.41
Reason for university education: hard to find job without education	0.32	0.87
Reason for university education: must have degree	1.35	0.25
Reason for university education: wanted to please parents	1.08	0.37
Reason for university education: everyone does that	0.81	0.52
Reason for university education: to delay army service	0.50	0.74
Academic performance (1=satisfactory... 5=excellent)	0.45	0.78
Presents to teachers at school (1=never... 5=systematically)	0.51	0.73
Paying fees at school (1=never... 5=systematically)	0.16	0.96
You/friends encountered any wrongdoing at USE	0.59	0.67
You/friends encountered any wrongdoing at univ.admission	0.90	0.46
Have you heard of your friends solving problems using connections?	0.34	0.85
Have you heard of your solved problems through bribery?	1.15	0.33
Female	0.43	0.79
University education is state financed	1.41	0.23
Place of residence before university: village or town	0.32	0.86

Continued on next page

Table A1 – continued from previous page

Covariate variables	F-test	Prob>F
Place of residence before university: city with population 2–250k	0.36	0.84
Place of residence before university: city with population 250–500k	0.44	0.78
Place of residence before university: city with population >500k	1.95	0.10
Age	0.19	0.95
Family status: both parents	2.52	0.04
Family status: only mother	1.59	0.18
Family status: only father	1.95	0.10
Family status: no parents	2.10	0.08
Number of siblings: 0	0.80	0.53
Number of siblings: 1	0.17	0.95
Number of siblings: 2	0.71	0.58
Number of siblings: 3 and more	0.17	0.95
Order of birth	0.75	0.56
Mother's education: secondary	1.19	0.31
Mother's education: higher	0.87	0.48
Mother's education: academic title	0.64	0.64
Father's education: secondary	0.49	0.74
Father's education: higher	0.97	0.42
Father's education: academic title	1.73	0.14
Mother's occupation: high level manager	1.14	0.34
Mother's occupation: middle level manager	1.69	0.15
Mother's occupation: highly qualified specialist	1.36	0.24
Mother's occupation: clerk	1.79	0.13
Mother's occupation: worker	0.79	0.53
Mother's occupation: entrepreneur	1.09	0.36
Mother's occupation: housewife or retiree	0.72	0.58
Mother's occupation: unemployed	0.61	0.66
Mother's occupation: military personnel	1.16	0.33
Father's occupation: high level manager	1.33	0.26
Father's occupation: middle level manager	0.91	0.46
Father's occupation: highly qualified specialist	0.69	0.60
Father's occupation: clerk	0.16	0.96
Father's occupation: worker	0.45	0.77
Father's occupation: entrepreneur	1.68	0.15

Continued on next page

Table A1 – continued from previous page

Covariate variables	F-test	Prob>F
Father's occupation: househusband or retiree	1.99	0.09
Father's occupation: unemployed	1.24	0.29
Father's occupation: military personnel	1.18	0.32
Financial situation (1=can only afford food... 5=can afford everything)	1.41	0.23
Monthly expenditures: <10k rub	0.98	0.42
Monthly expenditures: 10 – 20k rub	1.38	0.24
Monthly expenditures: >20k rub	1.27	0.28
Current accommodation: dormitory	0.77	0.55
Current accommodation: living with parents	1.19	0.31
Current accommodation: rent	0.75	0.56
Current accommodation: own an apartment	0.37	0.83
USE points: <150 points	0.25	0.91
USE points: 150 – 200 points	1.26	0.28
USE points: 200 – 250 points	1.62	0.17
USE points: >250 points	2.30	0.06
Student works	1.08	0.36
Employment related to education	2.11	0.08
Encountered bribery at university (1=never... 5=systematically)	0.02	1.00
How often do you use the following practices? (1=never... 5=systematically)		
Use crib sheets at exams	1.26	0.28
Submit papers downloaded from the internet	0.83	0.51
Buy papers	1.66	0.16
Write papers plagiarizing some chapters from the internet	1.97	0.10
Copy from other students during exams or tests	1.46	0.21
Deceive professors about study problems	1.06	0.38
Ask professors preferential treatment	1.09	0.36

Note: The F-tests test the equality of coefficients across the treatment groups in a regression of each individual characteristic on treatment indicators with heteroscedasticity robust standard errors.

Table A2: Estimates based on OLS with LASSO-selected covariates

Outcome	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
	Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.	Effect	se	*p*-v.
How often do you think students use the following practices? (1=never... 5=systematically)												
Use crib sheets at exams	-0.04	0.06	0.51	-0.02	0.05	0.71	0.00	0.06	0.97	-0.04	0.06	0.45
Submit papers downloaded from the internet	-0.02	0.07	0.76	-0.02	0.06	0.75	0.12	0.07	0.08	-0.01	0.07	0.86
Buy papers	0.08	0.07	0.27	0.06	0.07	0.36	0.06	0.08	0.40	0.08	0.08	0.31
Write papers plagiarizing some chapters from the internet	0.06	0.06	0.32	0.15	0.06	0.01	0.05	0.07	0.42	0.02	0.07	0.71
Copy from other students during exams or tests	0.09	0.06	0.16	0.08	0.06	0.17	0.07	0.07	0.27	0.04	0.07	0.60
Deceive professors about study problems	-0.05	0.08	0.52	0.02	0.07	0.84	-0.03	0.08	0.72	0.05	0.08	0.55
Ask professors preferential treatment	-0.02	0.07	0.73	0.08	0.07	0.29	0.06	0.08	0.45	0.04	0.07	0.56
When do you think these practices are acceptable? (1=definitely no... 5=definitely yes)												
When useless course	0.19	0.08	0.03	-0.01	0.08	0.94	-0.06	0.08	0.45	-0.01	0.09	0.92
When students work	0.13	0.08	0.09	-0.01	0.08	0.85	0.02	0.08	0.84	-0.09	0.08	0.30
If hard to learn material	0.14	0.08	0.08	-0.03	0.08	0.69	0.01	0.08	0.92	-0.10	0.08	0.24
Always acceptable	0.04	0.07	0.56	-0.07	0.07	0.27	0.04	0.07	0.59	0.00	0.07	0.98
Never acceptable	-0.15	0.09	0.11	-0.16	0.09	0.07	-0.10	0.09	0.26	-0.02	0.10	0.82
What does corruption mean to you? (1= definitely no... 5= definitely yes)												
Necessity	0.08	0.07	0.25	0.00	0.07	0.98	0.03	0.07	0.72	0.02	0.07	0.77
Means of income	0.18	0.09	0.04	0.04	0.09	0.63	0.13	0.09	0.16	-0.08	0.09	0.36
Crime	0.01	0.07	0.94	-0.04	0.07	0.55	0.08	0.07	0.26	-0.01	0.07	0.86
Means to solve problems	0.05	0.08	0.50	0.04	0.08	0.58	-0.04	0.08	0.63	-0.13	0.09	0.14
Compensation for low salaries	0.13	0.08	0.12	0.09	0.08	0.30	-0.01	0.08	0.91	-0.04	0.09	0.61
Evil	0.00	0.08	0.98	0.01	0.08	0.89	0.00	0.08	0.97	-0.11	0.09	0.25
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)												
Your career opportunities	0.02	0.07	0.74	-0.04	0.07	0.52	-0.07	0.07	0.35	0.00	0.07	0.97
Your quality of life	0.02	0.07	0.76	-0.06	0.07	0.37	-0.04	0.07	0.61	-0.01	0.07	0.89
Your education	0.00	0.07	0.99	-0.03	0.07	0.64	-0.09	0.07	0.21	-0.04	0.07	0.59
Your health	0.03	0.07	0.69	-0.05	0.07	0.49	0.00	0.07	0.99	-0.09	0.07	0.24
Your safety	-0.04	0.07	0.57	-0.03	0.07	0.61	-0.09	0.07	0.19	-0.09	0.07	0.22
Russian economy	0.04	0.05	0.48	-0.03	0.05	0.54	0.00	0.05	0.95	0.06	0.06	0.27
Russian politics	0.01	0.05	0.83	-0.03	0.05	0.48	-0.02	0.05	0.66	0.02	0.06	0.72
Russian education	0.07	0.05	0.15	0.00	0.05	0.97	-0.01	0.05	0.88	0.03	0.06	0.56
Russian health system	0.12	0.06	0.03	0.00	0.05	0.96	0.03	0.06	0.59	0.05	0.06	0.41
Russian police	0.09	0.06	0.10	-0.02	0.05	0.65	0.01	0.05	0.89	0.06	0.06	0.33
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	-0.03	0.07	0.65	-0.09	0.07	0.20	-0.10	0.07	0.16	0.02	0.07	0.79
Take part in roundtable? (0=no, 1=yes)	-0.01	0.01	0.39	-0.01	0.01	0.31	-0.02	0.01	0.07	0.00	0.01	0.82
Take part in survey next year?(0=no, 1=yes)	-0.03	0.02	0.09	-0.03	0.02	0.12	-0.03	0.02	0.09	-0.02	0.02	0.36

Notes: 'Effect' represents the estimate from an OLS regression of an outcome variable on a set of regressors selected in the post-double-selection LASSO procedure, 'se' provides asymptotic standard error, and '*p*-v.' stands for *p*-value.

Table A3: Effects in the female subsample

Outcome	Control mean	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
		Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.99	-0.04	0.08	0.67	-0.07	0.08	0.34	-0.01	0.09	0.92	-0.10	0.08	0.22
Submit papers downloaded from the internet	3.45	0.01	0.10	0.90	0.03	0.09	0.74	0.17	0.10	0.08	-0.01	0.10	0.95
Buy papers	3.14	0.18	0.10	0.08	0.14	0.10	0.17	0.02	0.11	0.85	0.24	0.11	0.02
Write papers plagiarizing some chapters from the internet	3.72	0.13	0.09	0.14	0.21	0.08	0.01	0.06	0.09	0.54	0.16	0.09	0.09
Copy from other students during exams or tests	3.77	0.07	0.09	0.42	0.06	0.09	0.51	0.08	0.09	0.38	0.05	0.10	0.60
Deceive professors about study problems	3.06	-0.01	0.11	0.95	0.07	0.11	0.53	-0.05	0.11	0.65	0.12	0.11	0.28
Ask professors preferential treatment	2.39	-0.07	0.10	0.51	0.13	0.10	0.22	-0.01	0.11	0.89	0.10	0.11	0.37
When do you think these practices are acceptable? (1= definitely no... 5= definitely yes)													
When a course is useless	2.64	0.18	0.12	0.12	-0.08	0.11	0.48	-0.01	0.11	0.95	0.08	0.12	0.52
When students work	2.95	0.09	0.11	0.40	0.03	0.11	0.76	0.09	0.11	0.43	-0.05	0.11	0.65
If it is hard to learn material	2.73	0.16	0.11	0.14	-0.02	0.11	0.84	0.09	0.11	0.41	-0.08	0.11	0.45
Always acceptable	2.04	0.09	0.09	0.34	-0.01	0.09	0.91	0.08	0.10	0.42	0.07	0.10	0.47
Never acceptable	2.92	-0.17	0.12	0.16	-0.12	0.12	0.31	0.02	0.13	0.90	0.04	0.13	0.76
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	1.87	0.08	0.10	0.40	0.06	0.10	0.54	0.08	0.10	0.43	0.09	0.10	0.35
Means of income	2.78	0.10	0.12	0.42	0.01	0.12	0.92	0.11	0.13	0.36	0.14	0.12	0.28
Crime	4.14	-0.14	0.10	0.17	-0.13	0.10	0.17	0.06	0.10	0.53	-0.05	0.10	0.65
Means to solve problems	2.96	0.09	0.10	0.37	0.13	0.11	0.23	-0.07	0.12	0.53	-0.08	0.12	0.53
Compensation for low salaries	2.52	0.14	0.12	0.25	0.05	0.11	0.64	0.07	0.12	0.59	0.01	0.12	0.91
Evil	3.83	-0.08	0.12	0.53	0.02	0.11	0.87	-0.14	0.12	0.27	-0.02	0.13	0.86
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.30	0.02	0.10	0.85	-0.02	0.09	0.84	-0.02	0.10	0.86	-0.04	0.10	0.68
Your quality of life	2.33	0.06	0.10	0.55	-0.04	0.09	0.69	0.00	0.10	0.96	0.02	0.10	0.89
Your education	2.13	0.05	0.09	0.57	0.03	0.09	0.77	0.03	0.10	0.79	0.01	0.10	0.92
Your health	2.21	0.04	0.10	0.70	0.02	0.09	0.83	0.00	0.10	0.99	-0.09	0.10	0.37
Your safety	1.98	-0.03	0.09	0.74	0.01	0.09	0.90	-0.05	0.09	0.56	-0.05	0.09	0.59
Russian economy	1.51	0.00	0.07	0.95	-0.02	0.06	0.77	-0.02	0.07	0.81	0.05	0.08	0.54
Russian politics	1.58	-0.04	0.07	0.60	-0.03	0.06	0.64	-0.04	0.07	0.54	-0.05	0.08	0.55
Russian education	1.52	0.03	0.07	0.64	0.01	0.06	0.82	0.01	0.07	0.90	0.00	0.07	0.98
Russian health system	1.52	0.04	0.07	0.62	-0.01	0.07	0.94	0.01	0.07	0.90	-0.01	0.07	0.88
Russian police	1.41	0.04	0.07	0.61	-0.01	0.06	0.93	0.01	0.07	0.86	0.00	0.07	0.98
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.56	-0.12	0.09	0.21	-0.04	0.09	0.67	-0.17	0.10	0.09	-0.10	0.10	0.31
Take part in roundtable? (0=no, 1=yes)	0.03	0.00	0.02	0.86	0.00	0.02	0.96	-0.02	0.01	0.25	0.01	0.02	0.47
Take part in survey next year? (0=no, 1=yes)	0.11	-0.02	0.03	0.40	-0.01	0.03	0.67	-0.02	0.03	0.53	0.00	0.03	0.91

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and 'p-v.' stands for p-value.

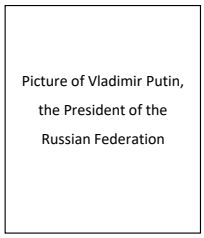
Table A4: Effects in the male subsample

Outcome	Control mean	Official brochure			Tailored brochure			Video: bribery			Video: reiderstvo		
		Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.	Effect	se	p-v.
How often do you think students use the following practices? (1=never... 5=systematically)													
Use crib sheets at exams	3.86	-0.01	0.09	0.94	0.04	0.09	0.67	0.03	0.10	0.77	0.08	0.10	0.46
Submit papers downloaded from the internet	3.54	0.03	0.10	0.77	-0.05	0.10	0.63	0.07	0.11	0.52	0.03	0.12	0.80
Buy papers	3.29	0.03	0.11	0.82	-0.02	0.11	0.87	0.15	0.11	0.16	-0.12	0.12	0.35
Write papers plagiarizing some chapters from the internet	3.80	0.04	0.10	0.73	0.14	0.10	0.15	0.12	0.10	0.23	-0.01	0.11	0.94
Copy from other students during exams or tests	3.71	0.18	0.10	0.09	0.13	0.10	0.20	0.13	0.10	0.20	0.05	0.12	0.66
Deceive professors about study problems	3.15	-0.07	0.12	0.55	0.05	0.12	0.68	0.05	0.12	0.71	0.00	0.12	0.98
Ask professors preferential treatment	2.58	-0.01	0.11	0.96	0.10	0.12	0.40	0.16	0.12	0.18	-0.02	0.11	0.85
When do you think these practices are acceptable? (1= definitely no... 5= definitely yes)													
When a course is useless	2.61	0.39	0.13	0.00	0.15	0.12	0.22	-0.02	0.13	0.88	-0.05	0.14	0.70
When students work	3.01	0.24	0.12	0.04	-0.02	0.12	0.88	-0.06	0.13	0.64	-0.13	0.14	0.35
If hard to learn material	2.69	0.18	0.12	0.13	0.00	0.11	1.00	-0.01	0.12	0.93	-0.11	0.13	0.41
Always acceptable	2.19	0.10	0.12	0.42	-0.03	0.11	0.76	0.10	0.11	0.39	-0.08	0.12	0.50
Never acceptable	3.10	-0.07	0.13	0.60	-0.20	0.13	0.11	-0.21	0.13	0.12	-0.06	0.15	0.68
What does corruption mean to you? (1= definitely no... 5= definitely yes)													
Necessity	1.99	0.12	0.11	0.28	-0.02	0.10	0.89	-0.01	0.11	0.96	-0.07	0.12	0.54
Means of income	2.93	0.32	0.14	0.02	0.08	0.13	0.56	0.14	0.13	0.31	-0.32	0.15	0.03
Crime	4.01	0.13	0.11	0.22	0.02	0.11	0.85	0.05	0.12	0.65	0.03	0.11	0.78
Means to solve problems	3.21	0.06	0.12	0.59	-0.05	0.12	0.71	0.02	0.13	0.86	-0.11	0.13	0.39
Compensation for low salaries	2.67	0.14	0.13	0.29	0.13	0.13	0.31	-0.11	0.13	0.41	-0.07	0.14	0.63
Evil	3.83	0.09	0.12	0.43	-0.01	0.12	0.96	0.14	0.12	0.23	-0.23	0.14	0.11
In your view, how does corruption affect...? (1=strictly negative... 5=fully positive)													
Your career opportunities	2.37	0.06	0.11	0.58	-0.08	0.10	0.43	-0.10	0.11	0.39	0.10	0.11	0.39
Your quality of life	2.45	-0.01	0.10	0.95	-0.12	0.10	0.26	-0.09	0.11	0.44	-0.03	0.11	0.79
Your education	2.33	-0.06	0.10	0.54	-0.08	0.10	0.46	-0.23	0.10	0.03	-0.06	0.11	0.59
Your health	2.36	0.01	0.11	0.93	-0.14	0.11	0.20	-0.04	0.11	0.76	-0.10	0.11	0.39
Your safety	2.21	-0.04	0.11	0.71	-0.09	0.11	0.43	-0.13	0.11	0.22	-0.14	0.12	0.25
Russian economy	1.52	0.13	0.08	0.12	0.00	0.07	0.95	0.05	0.08	0.57	0.10	0.09	0.29
Russian politics	1.56	0.11	0.08	0.18	0.02	0.08	0.85	0.03	0.08	0.73	0.12	0.09	0.18
Russian education	1.59	0.14	0.08	0.09	0.02	0.08	0.81	-0.03	0.08	0.69	0.10	0.09	0.26
Russian health system	1.56	0.26	0.10	0.01	0.03	0.08	0.70	0.06	0.09	0.51	0.13	0.10	0.17
Russian police	1.48	0.18	0.09	0.05	-0.02	0.08	0.82	0.02	0.09	0.87	0.16	0.10	0.12
Can corruption be eradicated in Russia? (1=definitely no... 5=definitely yes)	2.47	0.01	0.11	0.95	-0.17	0.11	0.11	-0.05	0.11	0.64	0.12	0.12	0.32
Take part in roundtable? (0=no, 1=yes)	0.06	-0.04	0.02	0.06	-0.03	0.02	0.07	-0.03	0.02	0.08	-0.02	0.02	0.32
Take part in survey next year? (0=no, 1=yes)	0.14	-0.05	0.03	0.10	-0.05	0.03	0.06	-0.06	0.03	0.05	-0.05	0.03	0.16

Notes: 'Effect' represents the difference between the mean outcome value in each treatment group and the control mean, 'se' provides asymptotic standard error robust to heteroscedasticity, and 'p-v.' stands for p-value.

Appendix B Translation of brochures

"Official" brochure



"The most effective method of fighting corruption is the development of civil society and the freedom of mass media... The fight against corruption is the goal of society as a whole..."

V.V. Putin, President of the Russian Federation

Corruption

Corruption is the misuse of official power, any forms of lobbying for the interests of individuals, companies and organizations to the detriment of the interests of other individuals, companies, society and the state as a whole. The most common manifestation of corruption is the receipt or giving of a bribe in one form or another to an official for a particular action or inaction, resulting in a gain. At the heart of corruption is the receipt of mutual benefit by corrupt officials to the detriment of the interests of all other objects and subjects of (usually) an economic process. Corruption includes the following crimes: abuse of office (articles 285 and 286 of the Criminal Code of the Russian Federation (CCRF)), giving bribes (article 291, CCRF), accepting bribes (article 290, CCRF), abuse of authority (CCRF), commercial bribery (Article 204, CCRF), as well as other acts falling under the notion of "corruption".

Anti-corruption activities are the activities of federal bodies of state power, state authorities of the Russian Federation, local governments, civil society institutions, organizations and individuals within their authority aimed at the prevention of corruption, including the identification and subsequent elimination of the causes of corruption (prevention of corruption); identifying, preventing, curbing, uncovering and investigating corrupt practices (combating corruption); minimization and/or elimination of the consequences of corruption offenses.

When obtaining data on the commission of corruption-related offenses, the coordination bodies in the field of combating corruption transfer these data to the appropriate state bodies, who are authorized to verify such data and make decisions based on the results of the audit in accordance with the procedure established by law.

These are the main directions of the activities of state bodies aimed at improving the effectiveness of the fight against corruption:

- Implementation of a unified state policy in the field of combating corruption;
- Creation of a mechanism for the interaction of law enforcement and other state bodies with public and parliamentary commissions on anti-corruption issues, as well as with citizens and institutions of civil society;

- Adoption of legislative, administrative and other measures aimed at forming a negative attitude towards corrupt behavior in society;
- Introduction of anti-corruption standards, i.e. establishing a unified system of prohibitions, restrictions and permissions, ensuring the prevention of corruption in various areas;
- Ensuring the independence of the media;
- Increasing the responsibility of federal bodies of state power, state authorities of the subjects of the Russian Federation, local governments and their officials for failure to take measures to eliminate the causes of corruption.

Anti-corruption legislation

- Federal Law of December 25, 2008, # 273-FL "On anti-corruption"
- Presidential decree of April 13, 2010, # 460 "On national anti-corruption strategy"
- Presidential decree of April 11, 2014, # 226 "On national anti-corruption plan for 2014-2015"

In order to create a system of corruption counteraction in the Russian Federation and to eliminate the causes of corruption, Presidential Decree #815 of May 19, 2008, "On Measures to Counter Corruption" established the Presidential Council for Countering Corruption.

Anti-corruption: law, honor, honesty, control

The fight against corruption based solely on the efforts of the authorities is no longer possible in Russia these days. Substantial changes require clear, explicit support from the community. We need a sort of army of activists people who occupy an active civil position on this issue. Only if there is a significant number of such people will change be possible. Many people see the new wave of corruption fighting as a pre-election PR action and think that the measures taken are not aimed at achieving the public good, but rather at obtaining political dividends for individual ruling groups. As a result, people turn away to do something else: ecology, charity. Already adopted documents are enough to start a large-scale fight against corruption. There are only a few legal norms left to be introduced before serious work can be started, for example, criminalizing illicit enrichment.

Now we need to understand how to make the whole system apply these norms. And this is already tedious, routine work... and here it is very important that society is not indifferent to the problem of corruption, the willingness to regularly ask uncomfortable

questions to the authorities and law enforcement agencies, demand results and bring the investigation to the end.

Ella Panfilova, member of the Presidential Council for Civil Society and Human Rights

Statistics

According to the Russian Public Opinion Research Center (VCIOM):

- Russians recognize a high (80%) level of corruption in society as a whole, as well as at the local level;
- The most corrupt spheres are believed to be local authorities (39%), traffic police (27%), federal authorities (26%), police (excluding traffic police) and medicine (19% each), judiciary and big business (18% each), public utilities and education (14% and 13%, respectively), local military administrative agencies and the army in general (6% and 4%);
- Russians think that the corruption level of federal authorities is increasing;
- Despite high levels of corruption within the traffic police (State Road Safety Inspectorate) and police in general, a new trend towards a decrease of corruption activities has been observed;
- One out of every five Russian citizens (19%) gave bribes within the last year;
- Those who gave bribes admit it happens most often when dealing with medical personnel (54%);
- There was a significant decrease in bribe giving in education (21%).

  The survey was conducted October 5-6, 2013. There were 1,600 respondents in 130 localities in 42 Russian regions.

Penalties

Russian criminal law provides for punishment not only for giving bribes for illegal actions, but also for giving any bribes. Article 291 of the Criminal Code of the Russian Federation distinguishes four types of bribes, depending on their size:

- Simple – under 25,000 rubles [$374][14];
- Substantial – above 25,000 rubles [$374];
- Large – above 150,000 rubles [$2,244];

[14]Based on the 2015 yearly average exchange rate from the Russian Central Bank.

- Especially large – above 1 million rubles [$14,963].

Anti-Corruption Measures

Measures have been taken to reduce the number of corruption offenses and minimize the consequences of their manifestation in the Khabarovsk region:

- There is the governor's Anti-Corruption Council, which is a collegial body that ensures the coordination of the activities of executive authorities, regional and federal governmental bodies and municipal authorities aimed at implementing state policy in the field of anti-corruption;
- The regional law "On the Prevention of Corruption in the Khabarovsk region" is being implemented;
- Measures of the regional program "Prevention of Corruption in the Khabarovsk region for 2011-2013" were implemented;
- The regional program "Ensuring public security and countering criminality in the Khabarovsk region" has been approved for 2014-2020, within the framework of which 26 systemic measures to prevent corruption are envisaged;
- A feedback line has been organized with the population of the Khabarovsk region by means of a telephone hotline and email for receiving citizens' communications on corruption issues in the bodies of state power and administration;
- The procedure for notifying the representative of an employer about attempts to incite a public civil servant to commit corruption offenses has been approved;
- Commissions on the observance of requirements of service behavior and conflict of interest settlement have been formed and are currently operating;
- A list of positions has been determined whereby state civil servants of the Khabarovsk region are required to submit information about their incomes, property and liabilities of a property nature;
- The procedure for providing information on incomes, expenditures and property and the procedure for their verification by state civil servants has been defined.

"Despite the formation in the Russian Federation of the legal and organizational framework for combating corruption, corresponding to the needs of the time, the prevalence of this phenomenon continues to be high. Numerous facts of corruption crimes committed against state power, the interests of public service and service in local

self-government bodies are noted. There are stable tendencies to merge the interests of business and officials, including officials and business representatives of foreign countries in corruption schemes.

Being one of the systemic threats to public security, corruption significantly hampers the normal functioning of state bodies and local self-government bodies, impedes social reforms and modernization of the Russian economy, causes serious concern in society and distrust of state institutions, and creates a negative image of Russia in the international arena."

From the Concept of public safety in the Russian Federation for the period until 2020 approved by the President of the Russian Federation on November 20, 2013

Letter of the law

Punishment for bribe-takers:

- Fine - 25 to 100 times the size of the bribe
- Imprisonment - up to 15 years
- Additional punishment includes the deprivation of the right to occupy certain positions or engage in certain activities for up to 3 years

Punishment for bribe-givers:

- Fine - 15 to 90 times the size of the bribe
- Imprisonment - up to 12 years

Punishment for middlemen:

- Fine - 15 to 90 times the size of the bribe
- Imprisonment - up to 12 years and a fine equivalent to 70 bribes

Punishment for commercial bribery:

- Fine - 10 to 70 times the size of the bribe
- Imprisonment - up to 6 years and a fine equivalent to 40 bribes
- Additional punishment includes the deprivation of the right to occupy certain positions or engage in certain activities for up to 3 years

Punishment for solicitation of a bribe or commercial bribery:

- Fine - up to 200,000 rubles [$2,992]

- Imprisonment - up to 5 years

A person who has given a bribe is released from criminal liability if it actively contributed to the disclosure and/or investigation of a crime and after the commission of the crime voluntarily informed the body entitled to initiate criminal proceedings to give a bribe.

Hotlines of the representatives of the federal authorities in the region

- Administration of the Federal Security Service in the Khabarovsk region: (4212)79-79-79
- Administration of the Ministry of Internal Affairs of the Russian Federation in the Khabarovsk region: (4212)38-73-87
- Transport Department of the Ministry of Internal Affairs of the Russian Federation in the Far East Federal Region: (4212)30-13-71, (4212)56-61-03
- Investigative Department of the Investigative Committee of the Russian Federation in the Khabarovsk region: (4212)47-03-08
- Far East Investigative Department of Transport of the Investigative Committee of the Russian Federation: (4212)21-07-21
- Administration of the Federal Migration Service in the Khabarovsk region: (4212)54-62-62
- Administration of the Federal Bailiffs Service in the Khabarovsk region: (4212)39-96-90
- Regional Administration of the Federal Drug Control Service in the Khabarovsk region: (4212)32-55-55, (4212)79-49-49, 8-800-345-67-89
- Administration of the Federal Penitentiary Service in the Khabarovsk region: (4212)565-888, email: doverie_ ufsin@mail.ru
- Administration of the State Road Safety Inspectorate of the Ministry of Internal Affairs of the Russian Federation in the Khabarovsk region: (4212)59-59-59
- Administration of the Federal Tax Service of the Russian Federation in the Khabarovsk region: (4212)45-09-38
- Prosecutor's office of the Khabarovsk region: (4212)32-41-70, email: phk@phk.hbr.ru

- Military prosecutor's office of the Far Eastern Military District (in Khabarovsk): (4212)39-54-57

Hotlines of the regional government

- For questions on corruption involving public authorities and government: (4212)32-75-30, email: anticor@adm.khv.ru
- For questions on the issues of barriers to the development of entrepreneurship by federal, regional executive bodies, or local self-government bodies: (4212)31-35-31

Anti-Corruption Council of the Governor of the Khabarovsk Region

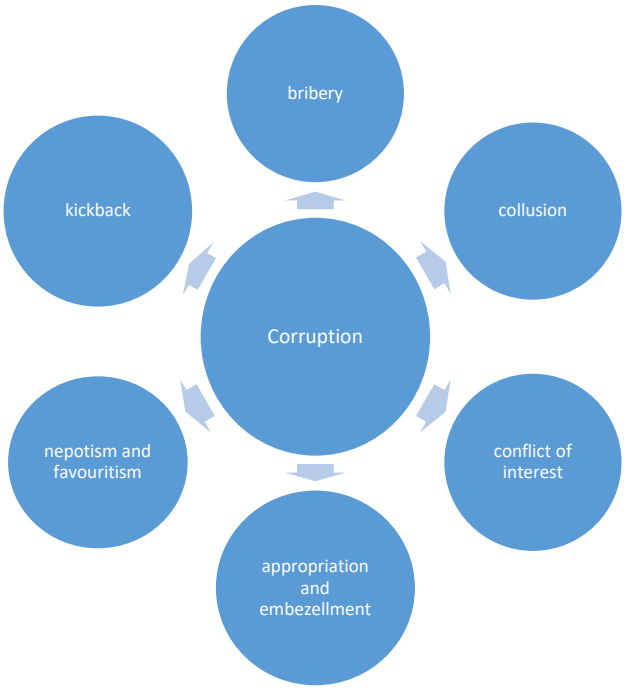
Press and Mass Communications Committee of the Government of the Khabarovsk Region

Printed by "Khabarovsk regional printing house" (circulation 7,000)

"Tailored" brochure

Corruption is an abuse of entrusted power by an official, aimed at extracting personal or collective benefits in monetary and nonmonetary forms.

- Russia was ranked 119 out of 168 countries in the global Corruption Perceptions Index, sharing its rank with Sierra Leone, Guyana and Azerbaijan.
- 44 billion rubles [$658 million] was the officially estimated damage from corruption in Russia in 2015. For comparison, the budget expenditures of the Khabarovsk region in 2015 amounted to about 82 billion rubles [$1.23 billion].



Bribery is money, objects or services that an official receives in exchange for doing some action (or for taking no action) in the interests of the one who gives a bribe. Giving and taking bribes are the most common types of corruption.

- 212 thousand rubles [$3,172] is the average bribe size in Russia.

How does bribery affect society and the state?

- Those who act honestly and do not pay bribes suffer. "Why should I help this person for free, when I will not get anything in return," thinks a corrupt official.
- The quality of state services deteriorates. If a policeman gets used to working for bribes, he loses the motivation to work with conscience. A corrupt doctor refuses to treat patients without a bribe.

Price of corruption

Sometimes it may seem that corruption does not affect the lives of ordinary people. This is not true.

In the village of Mnogovershinny, in the Khabarovsk region, substandard water poisoned 120 people. Corruption was the reason. "The water intake has been under construction for four years... Over 60 million rubles [$0.9 million] have already been spent, which is several times more than the planned amount. However, as a matter of fact, there is no water intake, and the money is all gone."*

"Large amounts of money are allocated to the construction of socially significant facilities. For instance, 1 billion 40 million rubles [$0.6 million] was allocated for the construction of apartments for orphans in the Tverdokhlebovo neighborhood in the Khabarovsk suburbs. The apartments have not been built, and a billion rubles is gone. Criminal cases are being initiated ... "*

What can you do?

The people themselves must control those whose job it is to catch and judge corrupt officials. Civil control can take various forms:

- Anti-corruption activities
- Consumer rights protection

You are the most important element in the fight against corruption.

- Will you become a complainant about corruption?
- Will you give a bribe to a road policeman or not?
- Will you abuse your entrusted position?

Your answers to these questions are directly related to the level of corruption in our country.

This brochure is based on the materials from the "ABCs of anti-corruption" by Transparency International Russia

* From an interview with the head of the Investigation Department of the Investigative Committee of the Russian Federation in the Khabarovsk region, P. Reshetnikov, to the Interfax information agency, December 8, 2015.

Working Paper 487 august 2017

Authors

Elena DENISOVA-SCHMIDT
University of St. Gallen (HSG), Gatterstr. 3, 9010 St. Gallen, Switzerland.
Phone: +41 71 224 2581; Email: elena.denisova-schmidt@unisg.ch; Website: www.elena-denisova-schmidt.de

Martin HUBER
University of Fribourg, Faculty of Economics and Social Sciences, Chair of Applied Econometrics - Evaluation of Public Policies, Bd. de Pérolles 90, 1700 Fribourg, Switzerland.
Phone: +41 26 300 8274; Email: martin.huber@unifr.ch; Website: http://www.unifr.ch/appecon/en/

Elvira LEONTYEVA
Pacific National University, ul. Tikhookeanskaya 136, 680035 in Khabarovsk, Russia.
Phone: +7 924 105 57 05; Email: elvira.leontyeva@gmail.com; Website: http://khstu.academia.edu/ElviraLeontyeva

Anna SOLOVYEVA
University of Fribourg, Faculty of Economics and Social Sciences, Chair of Applied Econometrics - Evaluation of Public Policies, Bd. de Pérolles 90, 1700 Fribourg, Switzerland.
Phone: +41 26 300 8274; Email: anna.solovyeva@unifr.ch; Website: http://www.unifr.ch/appecon/en

Abstract

This paper examines how anti-corruption educational campaigns affect the attitudes of Russian university students towards corruption and academic integrity. About 2,000 survey participants were randomly assigned to one of four different information materials (brochures or videos) about the negative consequences of corruption or to a control group. Using machine learning to detect effect heterogeneity, we find that various groups of students react to the same information differently. Those who commonly plagiarize, who receive excellent grades, and whose fathers are highly educated develop stronger negative attitudes towards corruption in the aftermath of our intervention. However, some information materials lead to more tolerant views on corruption among those who rarely plagiarize, who receive average or above average grades, and whose fathers are less educated. Therefore, policy makers aiming to implement anti-corruption education at a larger scale should scrutinize the possibility of (undesired) heterogeneous effects across student groups.

Citation proposal

Elena Denisova-Schmidt, Martin Huber, Elvira Leontyeva, Anna Solovyeva. 2017. «Combining Experimental Evidence with Machine Learning to Assess Anti-Corruption Educational Campaigns among Russian University Students». Working Papers SES 487, Faculty of Economics and Social Sciences, University of Fribourg (Switzerland)

Jel Classification

D73, I23, C93

Keywords

Anti-Corruption Campaigns, Experiments, Corruption, Academic Integrity, University, Students, Russia

Working Papers SES collection

Last published

482 Hsu Y.-C., Huber M., Lai T.-C.: Nonparametric estimation of natural direct and indirect effects based on inverse probability weighting; 2017
483 Imhof D.: Econometric Tests to Detect Bid-rigging Cartels: Does it Work?; 2017
473 Deuchert E., Huber M., Schelker M.: Direct and indirect effects based on difference-in-differences with an application to political preferences following the Vietnam draft lottery (first revised edition); 2017
484 Imhof D.: Simple Statistical Screens to Detect Bid Rigging; 2017
485 Buechel B., Mechtenberg L.: The Swing Voter's Curse in Social Networks; 2017
486 Buechel B., Klössner S., Lochmüller M., Rauhut H.: The Strength of Weak Leaders. An Experiment on Social Infuence and Social Learning in Teams; 2017

Catalogue and download links

http://www.unifr.ch/ses/wp
http://doc.rero.ch/collection/WORKING_PAPERS_SES

Publisher

Université de Fribourg, Suisse, Faculté des sciences économiques et sociales
Universität Freiburg, Schweiz, Wirtschafts- und sozialwissenschaftliche Fakultät
University of Fribourg, Switzerland, Faculty of Economics and Social Sciences

Bd de Pérolles 90, CH-1700 Fribourg
Tél.: +41 (0) 26 300 82 00
decanat-ses@unifr.ch www.unifr.ch/ses