Corruption on the road: A case study of Russian traffic police

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ABSTRACT

Motorists deal with traffic police officers on a daily basis. In Russia, the operations of the traffic police are not transparent. Mass surveys show that contacts with traffic police officers represent a key source of corruption in this country. This article discusses the links between corruption in the traffic police and road safety. Corruption in the traffic police has a positive impact on road safety in Russia, a middle-income country. It suppresses economic growth and thus reduces the intensity of road use. In the current situation, Russian motorists have no incentive for fighting corruption: constantly growing fines and penalties for traffic offenses increase the attractiveness of paying bribes compared to individual and/or collective protests. A vicious circle emerges as a result: corruption becomes self-sustainable. The official statistical data and results of a nationally representative sociological survey provide the data for the analysis. An instrumental variables analysis and multiple regression modelling are used in this study.

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1. Introduction

Driving is a source of health risks throughout the world. The risks of injury or death in road accidents tend to be particularly high in some countries. For instance, the road fatality rate in Russia in 2004 was two times higher than the average for the European Union, 23.9 deaths per 100,000 population compared to 11.8 deaths [38,10]. More recent figures suggest that the gap in road safety remains wide: the 2012 road fatality rates varied from 2.9 in Norway, to 3 in Sweden and Denmark, to 19.6 in Russia and 23.6 in Malaysia [22].

A popular strategy for making roads safer involves the imposition of heavy penalties for the violation of traffic laws and regulations. This approach is based on economic reasoning: it is intended to limit the unsafe behaviors of motorists and pedestrians on the road by increasing the cost of traffic offenses. In Russia, a series of tighter measures went into force in 2008, and these policies have been updated almost every year since then.

However, attempts to enhance road safety by heavily penalizing traffic infractions do not always succeed. Their outcome depends on several intervening variables, including the consistency and uniformity of traffic law enforcement. If enforcement is selective, which is characteristic of counties with a high degree of corruption in the public service system, then the traffic police officers may view the harsh penalties as an opportunity for soliciting or accepting bribes from the motorists who fail to comply with the traffic regulations (and the stricter these regulations are, the more difficult it is to respect their requirements). As M.E. Saltykov-Shchedrin, a 19th-century Russian writer, reportedly observed, the harshness of Russian laws is mitigated by the fact that respecting them is optional. Corruption leads to the eventual transformation of the traffic regulations as a tool for enhancing road safety into a means for capturing rents.

Russia has one of the most corrupt public services in the world. In 2014, Transparency International gave this country a score of 27 (out of 100) when calculating its corruption perception indexes (the lower the score, the higher the level of corruption) [35]. Only 40 countries out of 174 had lower scores than Russia. Furthermore, Russia’s traffic police (Государственная Инспекция Безопасности Дорожного Движения, the Main Directorate for Road Traffic Safety of the Ministry of Internal Affairs of Russia, GIBDD) is consistently perceived by the population as the most corrupt government body in this country [28]. In other words, the perceived extent of corruption in the operations of Russia’s traffic police exceeds what is considered to be a “norm” in a country with one of the highest levels of corruption in the world.

The research problem addressed in this article is to explore how corruption affects road safety. The situation on Russian roads provides good material for a case study taking into consideration the widespread corruption in this country. The recent (2008 and later) changes in traffic regulations serve to highlight the problematic nature of the connections between corruption and road safety: heavy penalties eventually
strengthen incentives to avoid enforcement on a case-by-case basis and make corruption self-sustainable.

2. Elements of a theory of corruption on the roads

The economic theory of crime and punishment, an integral part of law and economics, suggests that the application of harsher penalties in the case of traffic offences enhances road safety. Curiously enough, the economic theory of crime and punishment had its origins in a traffic infraction. Becker got the idea that crime should not pay, i.e., the expected utility of committing a crime minus the expected (dis)utility of being caught and punished must always be negative, when deciding to park illegally. “I calculated the likelihood of getting a ticket, the size of the penalty, and the cost of putting the car in a lot. I decided it paid to take the risk and to park on the street” [5: 389]. If the fine and the probability of getting the ticket had been greater, Becker would have chosen a legal way to park (but eventually missed the opportunity to gain this valuable insight).

Law and economics use the model of rational choice to explain deviant behavior and offer solutions as to how to reduce its scope. Namely, a rational individual will not commit a crime/infraction if he/she gains more by following the rules. “The basic function of the law, in an economic perspective, is to alter incentives” [26: 189]. Namely, the motorist will be motivated to comply with the traffic regulations not because of any humanistic considerations, but because unsafe driving becomes too costly. From this point of view, harsher penalties and the increased probability of sanctioning the offenders will result in safer roads. Examples of applying this logic to practice abound. Governments of various countries, both developed [19,20] and developing [3,33], seek a solution to the problem of road safety by introducing more severe sanctions for traffic offences and their more certain detection.

Russia is no exception in this respect. The Russian government also increases penalties for unsafe driving, allows the automatic detection of most road traffic offences with the help of traffic enforcement cameras (without even informing the motorists of their operation) and extends their network. The traffic police officers have the discretionary power to record road traffic and their interactions with the motorists either automatically or manually [9]. For instance, the penalty for driving with an alcohol breath concentration exceeding the permitted level (0.15 mg per liter of breath) in Russia is one of the highest in the world: 30,000 rubles ($977US on November 15, 2013 when this most recent regulation was adopted) or detention for up to 15 days or 100–200 h of compulsory work, in keeping with Article 12.7.2 of the Code of Administrative Offences.

In order to demonstrate the existence of a causal relationship in this case between road safety and the expected (dis)utility of being caught and punished for traffic offences, the researcher has to control for the impact of other variables affecting road safety. The level of corruption is one. In 2012, the level of perceived corruption in a country was negatively associated with the number of people killed in road accidents in this country ($r = -0.679$, $p < 0.001$, $N = 38$ [22,35]).

Rose-Ackerman [31: 301] defines corruption as “the misuse of public power for private or political gain, recognizing that ‘misuse’ must be defined in terms of some standard.” Defined in this way, corruption involves breaking a norm, legal or moral [15]. A breach of a norm by a state representative responsible for the enforcement of the traffic laws and regulations is particularly relevant. The size of a penalty is as important as the certainty of its uniform and certain administration. The more severe the law, the more its application and enforcement tend to be consequential. A selective and/or unjust application of a severe penalty distorts the motorists’ incentives: instead of attempting to drive more safely, they may hope to get preferential treatment by bribing the traffic police officer, building useful connections in their environment, offering some services in exchange or influencing their superiors.

In the case of the traffic police, departures from the prescribed conduct can take various forms. To start with, traffic policemen are expected to comply with the traffic laws and regulations themselves [30]. If they do not comply, then other motorists will tend to consider safe driving as optional and not mandatory. The traffic police may also enforce the traffic laws and regulations differently depending on the offender’s social status. A lenient standard is applied to “useful,” “well connected” individuals and those who can afford to buy “indulgences,” i.e., pay bribes. The other motorists are subjected to the full force of the law.

Bribes do not always take a monetary form: the traffic police officers may be interested in services offered by the offender or simply in maintaining their reputation as “good citizens” in a local community [41]. In some countries, including Russia, particular license plates serve to signal the privileged status of the car’s user. For instance, high–ranked state officials and individuals working in law enforcement (the police, special services, etc.) have such plates. They may also have other “signaling devices,” such as emergency warning lights. The proliferation of distinctive license plates and emergency warning lights sometimes causes irritation and eventual protests on the part of motorists with no such privileges [2,8]. Furthermore, emergency warning lights and license plates suggesting a car user’s privileged status can eventually be bought illegally from the traffic police. This practice is also a form of corruption [36].

The extant literature on corruption and road safety emphasizes the importance of uniformity in the enforcement of traffic laws and regulations. Corruption undermines road safety in both developed [38] and developing countries [27]. However, if one takes into account the indirect effect of corruption, then the picture becomes murkier. Economists know that corruption slows economic growth. Economic growth, in turn, creates conditions for the intensification of road traffic and, hence, eventually decreases road safety. Hua et al. [16] analysed both direct (via the non-uniform implementation of safety regulations) and indirect (via per capita income) effects of corruption on road safety. They found that the total effect of corruption on road safety tends to be positive in the low- and middle-income countries (per capita income levels of $38,248 and less) and negative in high-income countries. Paradoxically, corruption might make roads safer at the early stages of economic development by suppressing economic growth. The first research question addressed in this paper is whether corruption affects road safety in Russia, a middle-income country (in 2013 Russia’s adjusted net national income per capita in current US$ was $11,638 [40]), namely, whether corruption undermines or enhances road safety in this country. A formal hypothesis associated with this question ($H_1$) predicts that corruption tends to be positively associated with road safety in Russia.

An individual, who is subject to corrupt power, has two options: either to accept the existing situation or to resist. Law and economics predict that one has incentives to choose the second course of action if corruption involves significant costs, i.e., if the individual, who faces an official abusing power, incurs a net loss. “The costs of punishing any sort of victimless crime are great” [26: 187]. The use of economic thinking to explain individual or mass mobilization against corruption has a rationale under the circumstances: members of the upper middle class and the rich have better chances of owning a car. Compared to others, their behavior tends to be more calculating and utilitarian [43].

Bribery does not always contradict the interests of the people who face the officials abusing power. Several configurations are possible: the official gains and the other party loses (as predicted by the “tollbooth hypothesis” [7,21]), the official loses and the other party wins (regulatory capture theory examines this case [34]), and both parties involved win, however unequal their gains might be. Depending on the circumstances, either the motorist or the traffic police officer may
eventually initiate a bribe [1]. For instance, the saying that “corruption greases the wheels of commerce” (the wheels of cars in this case) corresponds to the second configuration. The bribe-giver hopes to secure some privileged treatment from the bribe-taker, which undermines the competitiveness of the former’s rivals.

The “win–win” situation in which both the bribe-giver and the bribe-taker gain something has not been given enough attention in the literature. The need to take into account a third party arguably explains this relative negligence. The third party, a “gatekeeper,” creates conditions favorable to the official’s rent-seeking activities. A “power triad” that includes the gatekeeper, the bribe-taker, and the bribe-giver eventually emerges [24].

For example, the legislator makes the traffic regulations more severe and increases the penalties for road traffic offenses. The legislator plays the role of a gatekeeper: he or she defines what is legal and what constitutes an offence or crime. It may well be that compliance with the traffic regulations becomes prohibitively costly to achieve, as in the case of the zero tolerance to alcohol policy declared in Russia in 2010–2013 (the motorists were heavily penalized if the quantity of alcohol per liter of breath exceeded zero). The quantity of alcohol per liter of breath can eventually exceed zero even after consumption of some non-alcoholic beverages, such as fermented drinks (kefir, kvass). The consumption of these beverages is an element of the local culture. The police officer acquires additional leverage when dealing with the motorists: many of them become offenders against their will and the everyday sense of justice. This increases the attractiveness of a bribe for both the police officer (the bribe-taker) and the motorist (the bribe-giver). The former gains extra cash income; the latter “buys” the right not to change traditional patterns of consumption. What does the legislator (the gatekeeper) win? The gatekeeper wins the police officer’s willingness to protect the legislator’s privileges on the road, ranging from distinctive license plates and emergency warning lights to excuses for road traffic offences. Such excuses can eventually be granted even if road accidents caused by the legislator involve victims [2]. In the final account, all parties “win”—at the expense of road safety and the victims, of course.

As a result, a necessary condition for fighting corruption consists in the positive costs of being subject to corrupt power. A sufficient condition refers to the relative costs and benefits associated with a particular strategy of individual or collective resistance. The institutional environment of a particular country, Russia in the case at hand, determines these costs and benefits.

The repertoire of individual strategies for fighting corruption in Russia includes the revelation and dissemination of information about corruption in the traffic police, the filing of extra-judicial complaints against the traffic police, initiating legal actions, including appeals of traffic police officers’ decisions to the courts, among others. All three strategies involve significant costs, both monetary and non-monetary (e.g., the time spent on going through all the stages of a complaint or legal action).

The first strategy requires a certain amount of freedom on the part of the mass media, which is not the case in Russia [39]. The Internet represents an alternative means for unveiling corrupt practices in the traffic police. There were several precedents with respect to attracting public attention to the corruption in the GIBDD with the help of messages posted on Youtube or in the social networks [8]. The second strategy works only if the government has a political will to reform the traffic police by increasing its transparency. This condition was present in Georgia in 2003–2007 and greatly facilitated police reforms in this post-Soviet country [18], but it is still absent in Russia. The third strategy pays off if the rule of law – broadly defined – is respected. In Russia, this condition is not met. When the court deals with an appeal from a decision made by the traffic police, the presumption of guilt prevails. The courts tend to uncritically endorse police reports as the only valid evidence. The Russian courts, including the Supreme Court, use a standard formulation: the police protocol and the account provided by the road traffic officer are found to be sufficient proof that a road offense was indeed committed.3

Documents (hard) evidence or witnesses are simply not required. Some Russian legal scholars argue in this respect that the principle of strict liability was improperly borrowed from the domain of civil law [17] and applied to the domain of administrative law—to the cases involving traffic offences [37].

As for collective strategies for fighting corruption, their availability depends on whether several additional conditions are met. First, a corruption-free system has the characteristics of a public good for its users, provided that their expected gain from transparent transactions exceeds what they expect to win by bribing state servants. This is not always the case, which eventually means that motorists have to solve the prisoner’s dilemma. A collectively preferable outcome might remain out of reach because the motorist individually hopes to win more in the corruption game. Second, the private expected benefits of overcoming corruption must exceed the associated private costs. The balance of one’s private benefits and costs depends on the technology used for fighting corruption [25,32]. Third, collective mobilization has greater chances of succeeding if people experience similar problems at the same point in time. For instance, stolen elections (elections whose results are manipulated by the power holders) play the role of a focal point for all the voters who cast their votes. Consequently, they have the potential to become a trigger for mass mobilization [6]. In contrast to stolen elections, motorists do not have a focal point in their interactions with the traffic police: they meet its representatives face-to-face and at different points in time.

The repertoire of Russian motorists’ collective actions for fighting corruption includes the exchange of information concerning the misdeeds of the traffic police, the lodging of collective petitions and complaints, coordinated actions on the road (in contrast to street protests during which the participants march by foot, the motorists protest by driving their cars), and the decoration of the cars with some symbolic objects (e.g., a blue bucket placed on the car’s roof to mimic blue emergency warning lights as a symbol of privileges on the road or white ribbons used by the protesters against the stolen parliamentary elections in 2011; see [23]). The discussion of the potential for individual and collective protests against corruption in the Russian traffic police leads to the second research question addressed in this article, namely, Do Russian motorists have incentives to fight corruption on the roads? A hypothesis associated with this question (H2) states that Russian motorists’ expectations concerning the utility of bribery exceeds what they expect to gain from the fight against corruption in the traffic police. The traffic police are not the only winners under the circumstances.

3. Data and methods

The format of a case study was used for this research. It analyzes the situation in a single country, Russia. Case study research involves using several data sources for an in-depth discussion of an individual case [12]. Two data sources provide the information for this case study: on one hand, the official statistical data generated by the Russian traffic police [10] and the Federal State Statistics Service [11] and, on the other hand, the data obtained with the help of a nationally representative survey carried out in September 2014 by the Levada Center, a leading Russian independent pollster. One advantage of using the data collected in a single country is its homogeneity and comparability: unlike data collected in several countries, national data are arguably characterized by similar biases and omissions.

There are two reasons for using official data to test H1. First, as a result of its duty to compile relevant statistics, the GIBDD data on road

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3 See, for instance, the Supreme Court’s rulings 5-AD09-6 (from 29.7.2009), 49-AD10-2 (from 19.2.2010), 18-AD10-12 (from 15.10.2010), 67-AD11-1 (from 25.3.2011), 78-AD12-2 (from 1.3.2012), among others.

4 The author thanks Professor Lev Gudkov, head of the Levada Center, for his kind assistance in obtaining the dataset for this survey.
safety are unique: there is no alternative data set covering all the Russian regions. Second, the GIBDD data are easily and publicly accessible (one possible explanation, as will be discussed in the next section, involves the declining relative number of road accidents: the GIBDD showcases its “success”). As for the decision to use secondary data for testing H2, there is a weaker explanation. Due to resource limitations, it was impossible to conduct a mass survey on a representative sample using a specifically designed instrument. The Levada Center data turned out to be a close, yet imperfect, alternative to what had been sought.

The region (as of the start of 2014, 83 regions made up the Russian Federation5) was the unit of observation and analysis in the first data set; the individual was the unit of analysis in the second. The first data set covers the period from 2010 through 2013 (the average values for the variables of interest were used in order to eliminate chance fluctuations). Due to the limitations of the available data, the second hypothesis was not tested in a comprehensive manner.

The key dependent variable for H1, road safety, was operationalized through the number of road accidents reported per 10,000 vehicles. The alternative operationalization, motor vehicle crash (MVC) victims – the number of people who were injured and killed – per 100,000 inhabitants (a version of this indicator, MVC deaths, was used, for example, in [16,38]), was also used to increase the robustness of the reported results. The principal dependent variable for H2, the perceived corruption of the traffic police, was operationalized with the help of the question “How widespread is corruption in the traffic police?”

The selection of the indicators of the independent variables (corruption in the traffic police for H1 and the willingness to pay bribes for H2) and controls for the instrumental variables analysis using the ordinary least squares (OLS) method of multiple regression modelling was guided, on one hand, by the availability of the data and, on the other hand, by the relevant precedents. Hua et al. [16] and Vereeck and Vrolix [38] included GDP per capita, the relative number of vehicles, the relative number of doctors, the relative proportion of youth, and the physical capital stock per worker in their lists of controls per capita. In both studies cited, the level of corruption was operationalized through the corruption perception index (CPI) by Transparency International. The major limitation of the CPI is the eventual disconnection between one’s personal experience of corruption and his or her perception of how widespread corruption is.6 The latter may be influenced by media reports [29]. However, in some other studies, perceived corruption and personally experienced corruption turned out to be closely associated [4]. This was also the case of corruption in the everyday interactions of Russians: the value of Pearson’s coefficient of correlation between the 2010 Corruption Perception Index for the Russian regions [13] and the experience of a bribe solicited by government officials during past 1–2 years per region [14] was moderately high and statistically significant: \( r = 0.698, p < 0.001, N = 65 \). The latter indicator (corruption experienced by ordinary Russians) was entered into the regression when testing H1.

4. Results and discussion

During the past decade (2004–2013), there was a decline in the relative number of road accidents (Fig. 1). At the same time, the Russian roads are still far from safe. The relative number of motor vehicle crash deaths remains high by international standards and does not decrease significantly.

The level of the perceived corruption in Russia also remains high. There has been almost no variation in the CPI for this country over the past two decades: 2.6 out of 10 in 1996, 2.8 in 2004, and 27 out of 100 in 2014. The corruption of the traffic police exceeds the high bar of what is considered as “normal” in the country with the highest level of perceived corruption overall. The traffic police are consistently considered to be the most corrupt government body. Answering a question asked by the Levada Center as to how common corruption and bribery are in various government bodies, 36% of the respondents replied that corruption is “widespread” among the road police. The corresponding figures for the police, the customs, and the federal ministries are 25.4%, 17.6%, and 12.7%, respectively.

Both personally experienced corruption and road safety vary across the regions of the Russian Federation. This paves the way for testing H1 in a formal manner. The controls for the instrumental variable analysis were classified in four groups: intensity of road use (number of private cars per 1000 population, number of public buses per 100,000 population, and road density), economic development (income per capita, gross regional product per capita, retail trade turnover per capita, and investments in capital assets per capita), deviance (number of registered crimes per 100,000 population), and human development (proportion of youth, population per doctor and number of university students per 10,000 population). Following a correlational analysis, four variables were dropped due to correlations that were either too low (road density and number of university students per 10,000) or too high (GRP per capita and retail trade turnover per capita). High correlations, for instance, cause the problem of multicollinearity.7 Weakly correlated variables are thought to have weak effects on the dependent variable and might be excluded if better predictors are available [44: 11]. The independent variable (personally experienced corruption) and the controls were entered by groups, which produced seven models (Table 1).

5 Out of 83 subjects only 79 were retained for the analysis. Chechnya was excluded due to low data reliability. Out of four autonomous districts only one, Chukotka, is the subject of the Russian Federation in its own right, whereas the Yamalo-Nenets, Nenets and Khanty-Mansi districts are administratively subordinate to the other regions.

6 The CPI also reflects experts’ perceptions of corruption that does not necessarily coincide with ordinary people’s opinions.

7 A tolerance of less than 0.20 or 0.10 and/or a variance inflation factor (VIF) of 5 or 10 and above indicates a multicollinearity problem. When entered into the regression model, both variables with high correlation coefficients produce a VIF and tolerance that exceeds these critical values.

Fig. 1. “The number of road accidents per 10,000 vehicles registered by the traffic police and the number of motor vehicle crash deaths per 100,000 population in Russia, 2004–2013.” Source: GIBDD [10]. Note: Section 1.2 of the Rules of the Road of the Russian Federation provides the following definition of a road accident: “An accident that occurred on the road with the involvement of a vehicle that produced victims and/or some material damage.” The traffic police are responsible for collecting data on road accidents. Changes in the procedures for recording road accidents affect their number. For instance, since March 1, 2005, victimless road accidents may eventually be documented without the involvement of the traffic police. This change must be taken into consideration when interpreting an unusually sharp decrease in the number of road accidents recorded by the traffic police between 2007 and 2009 (Fig. 1). For this reason, the period considered in the regression analysis below starts in 2010.
Table 1

*Results of statistical (Method = Enter) multiple regression for predicting the number of road accidents and the number of motor vehicle crash victims (Y) from personally experienced corruption and the control variables: number of cars per 1000 population, number of public buses per 100,000 population (Lg10), income per capita (Lg10), investments in capital assets per capita, number of registered crimes per 100,000 population, proportion of youth (15 years old and younger) in the population, and population per doctor, standardized (beta) coefficients, 2010–2013, Russia.*

<table>
<thead>
<tr>
<th>Model</th>
<th>Dependent variable</th>
<th>Road accidents</th>
<th>MVC victims</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of private cars per 1000 population</td>
<td>-.15 (1.36)</td>
<td>-.19 (1.49)</td>
<td>.29 (2.13)*</td>
</tr>
<tr>
<td>N of public buses per 100,000 population (Lg10)</td>
<td>-.27 (2.51)*</td>
<td>-.20 (1.29)</td>
<td>-.33 (2.04)*</td>
</tr>
<tr>
<td>Income per capita (Lg10)</td>
<td>-1.4 (1.23)</td>
<td>1.4 (1.44)</td>
<td>.07 (5.99)</td>
</tr>
<tr>
<td>Investments in capital assets per capita (Lg10)</td>
<td>-.39 (3.58)**</td>
<td>-.20 (1.29)</td>
<td>-.33 (2.04)*</td>
</tr>
<tr>
<td>Bribe experienced</td>
<td>-2.37 (1.23)**</td>
<td>-2.76 (2.28)**</td>
<td>-.27 (2.32)*</td>
</tr>
<tr>
<td>Crime rate</td>
<td>.09 (.77)</td>
<td>-.17 (1.45)</td>
<td>.24 (2.2)*</td>
</tr>
<tr>
<td>Proportion of youth</td>
<td>-.23 (1.98)**</td>
<td>-.19 (1.62)</td>
<td>.26 (.98)</td>
</tr>
<tr>
<td>People per doctor</td>
<td>.28 (2.53)**</td>
<td>.26 (2.42)**</td>
<td>.29 (2.66)**</td>
</tr>
<tr>
<td>Bribe experienced × income per capita (Lg10)</td>
<td>89.75 (6.33)***</td>
<td>89.83 (1.54)</td>
<td>328.94 (1.27)</td>
</tr>
<tr>
<td>C (unstandardized coefficient)</td>
<td>82.09 (4.38)**</td>
<td>87.77 (1.51)</td>
<td>-.19 (1.62)</td>
</tr>
<tr>
<td>R²</td>
<td>.09</td>
<td>.41</td>
<td>.32</td>
</tr>
<tr>
<td>R² (adj)</td>
<td>.07</td>
<td>.31</td>
<td>.36</td>
</tr>
<tr>
<td>F-statistic</td>
<td>3.95***</td>
<td>4.88***</td>
<td>5.08***</td>
</tr>
<tr>
<td>Obs.</td>
<td>78</td>
<td>78</td>
<td>71</td>
</tr>
</tbody>
</table>

† Significant at α = .1.
* Significant at α = .05.
** Significant at α = .01.
*** Significant at α = .001.

Model 1 shows that the more developed public transportation is, the fewer road accidents occur. However, this relationship becomes statistically insignificant after controlling for the economic development indicators (Model 2). Income per capita turned out to be negatively associated with road safety, whereas investments in capital assets per capita were associated positively. Industrial growth seems to produce less safe roads as a result of the increased intensity of their use. As for the negative effect of Income per capita, one possible explanation could be the more advanced cars that wealthy people can buy. Technically more sophisticated cars can be driven more safely. Corruption enhances road safety: the personal experience of paying a bribe is associated with fewer road accidents (Model 3). Income per capita loses its statistical significance after Personally experienced corruption is entered. The positive relationship between corruption and road safety in Russia does not disappear after the human development indicators are entered (Models 4 and 5). The relative number of cars becomes significantly different when the stage only after accounting for personally experienced corruption, the state of the health system, and income per capita. Advanced cars, even in growing numbers, do not always decrease road safety.

The existence of a link between corruption and road safety is further validated after the MVC victims indicator is substituted for Number of road accidents as the dependent variable (Model 7). This finding corroborates that reported by Hua et al. [16]: in the low- and middle-income countries, corruption depresses economic development and, consequently, keeps roads safer than they would otherwise be. The addition of an interaction term between income per capita and personally experienced corruption to the model (Model 6) does not undermine this conclusion.* The interaction term has a positive impact on road safety, even if more variance in the dependent variable can be explained by considering the impact of corruption separately. The quality of the models can be deemed satisfactory: Model 5, for instance, explains 33.4% of the variance in the relative number of road accidents.

As a result of this study, H1 can be accepted. The bottom line is that the existence of a positive connection between corruption and road safety is confirmed for Russia, a middle-income country. The next question is how to break this link: corruption enhances road safety in a way that undermines social and economic development. The discussion of H2 serves to address this issue: the link will continue to exist as long as Russian motorists do not have incentives to fight corruption on the roads.

The use of secondary data limited the range of available options and prevented the researcher from testing H2 in a comprehensive manner. The most relevant questions from the Levada Center survey had nominal-level formulations, which necessitated their transformation into dummy variables. The dependent variable was the respondent’s assessment of how widespread corruption is in the traffic police. The assessment of how common a particular form of corruption is in Russia represented the key independent variable. Namely, principal emphasis was placed on whether the respondents consider bribes offered by the bribe-giver (the motorist under the circumstances) and bribes solicited by the bribe-taker (the road police officer under the circumstances) to be typical. Three Russian terms appear relevant: vzyatochnistvo (bribery broadly defined), vymogatel’stvo (extortion), and podkup (bribes offered to a government official). If extortion is believed to prevail in Russia, then the motorists do not necessarily consider themselves to be a winning party. If the two other forms reportedly prevail, then the motorist wins something from the corrupt practices and he or she has no incentives for changing the situation. As long as the motorist receives a positive pay-off from corruption, he or she arguably has no interest in unchanging social and economic development. The discussion of H2 serves to address this issue: the link will continue to exist as long as Russian motorists do not have incentives to fight corruption on the roads.
victims of corruption. For the dummy variables, Levene’s test for the
equality of variances was run. In all cases but one (the group of Putin
voters vs. the respondents who cast their votes for the other candi-
dates), the equality of variances was observed.\footnote{The table below contains the outcomes of Levene’s test for the equality of variances:}

At the first stage of the multiple regression analysis carried out using
the forward method, the dummy variable for inhabitants of large urban
agglomerations was entered (Table 2). At the second stage, the dummy
variable for vzyatochnichestvo as a prevailing form of corruption in
Russia was entered. It should be noted that the contribution of the
agglomerations was entered (Table 2). At the second stage, the dummy
variable for inhabitants of large urban
enforcement of the traffic laws and regulations, however severe they
have to be attributed to the spread of corruption as an intervening vari-
A vicious circle emerges as a result. The corruption of the traffic pol-
ce is self-replicating through rational choices under particular circum-
cumstances. Russian motorists’ rational considerations lead them to accept
bribery instead of fighting corruption. Attempts to enhance compliance
with the traffic laws and regulations by increasing their severity turn
out to be counter-productive: they contribute to the spread of corruption
instead. The observed decrease in the number of road accidents has
to be attributed to the spread of corruption as an intervening vari-
Table 2

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large city (Moscow and 500,000+ cities)</td>
<td>.17 (5.87)***</td>
</tr>
<tr>
<td>Bribes as a common form of corruption</td>
<td>.13 (4.49)***</td>
</tr>
<tr>
<td>Not entered (t values)</td>
<td></td>
</tr>
<tr>
<td>Gender (1 = male)</td>
<td>1.46</td>
</tr>
<tr>
<td>Education (1 = some higher education)</td>
<td>.66</td>
</tr>
<tr>
<td>Putin voter (1 = yes)</td>
<td>.67</td>
</tr>
<tr>
<td>Income per capita (1g10)</td>
<td>1.11</td>
</tr>
<tr>
<td>Age</td>
<td>.84</td>
</tr>
<tr>
<td>Status (ordinal: poor–lower middle–middle–upper middle–rich)</td>
<td></td>
</tr>
<tr>
<td>Extortion as a common form of corruption (1 = yes)</td>
<td>- .43</td>
</tr>
<tr>
<td>Bribes as a common form of corruption (1 = yes)</td>
<td>4.49 ***</td>
</tr>
<tr>
<td>Podkup as a common form of corruption (1 = yes)</td>
<td>- .11</td>
</tr>
<tr>
<td>C (unstandardized coefficient)</td>
<td>3.21</td>
</tr>
<tr>
<td>R²</td>
<td>.03</td>
</tr>
<tr>
<td>F-statistic</td>
<td>34.48 ***</td>
</tr>
</tbody>
</table>

Source: Levada Center data.
Note: In order to enhance representativeness, the data were weighted by the respondent’s
gender, education, and vote in the 2012 presidential elections.
† Significant at \( \alpha = .1 \).
*** Significant at \( \alpha = .001 \).

5. Conclusion

This study confirmed that, under some circumstances, namely, at the
early stages of economic development, corruption contributes to
enhancing road safety. This outcome is counter-intuitive: the negative
effects of corruption are believed to prevail. In order to detect the posi-
tive effect of corruption on road safety in Russia, two links between
these two variables were differentiated and assessed empirically. The
indirect effect of corruption on road safety is positive. Corruption
suppresses economic growth and, thus, reduces the intensity of road
use [16]. This indirect effect seems to prevail in the case of Russia, a
middle-income country. Investments in capital assets per capita were
associated positively with the indicator of road unsafety in all models
in which the latter variable was entered (Models 2–7).

The direct effect of corruption on road safety is negative: it works in
the opposite direction. The impact of experienced corruption on the de-
pendent variable was always found to be negative. In Models 3–5 and 7,
it was assessed controlling for the positive effect of investments as an
engine of economic growth. Corruption undermines uniformity in the
enforcement of the traffic laws and regulations, however severe they
might be. The direct effect reportedly prevails in developed countries.
The more uniform compliance with the traffic regulations, the safer
the roads. Vereeck and Vrolix observed that uniform compliance in
the EU member-countries with some rules matters more than their con-
tent, for instance, their severity. “What is irrelevant, though, is not the
absence, but the specific content of the legal rules” [38: 401].

In Russia, the connection between corruption and road safety has a
sustainable character since all the parties involved win something. The
Russian motorists are not only victims of extortion but also take the ini-
tiative in terms of bribery. This would be impossible if they gained noth-
ing from a bribe. Under the present circumstances – the enactment of
the increasingly severe traffic laws and regulations, the application of
increasing fines and penalties, and the high costs of fighting corruption

\footnote{The table below contains the outcomes of Levene’s test for the equality of variances:}

<table>
<thead>
<tr>
<th>Dummies</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0.081</td>
<td>0.776</td>
</tr>
<tr>
<td>Large city</td>
<td>2.479</td>
<td>0.116</td>
</tr>
<tr>
<td>Higher education</td>
<td>0.003</td>
<td>0.996</td>
</tr>
<tr>
<td>Putin voter</td>
<td>5.873</td>
<td>0.015</td>
</tr>
<tr>
<td>Vzyatochnichestvo as a common form of corruption</td>
<td>0.289</td>
<td>0.591</td>
</tr>
<tr>
<td>Extortion as a common form of corruption</td>
<td>0.132</td>
<td>0.717</td>
</tr>
<tr>
<td>Podkup of state officials as a common form of corruption</td>
<td>0.411</td>
<td>0.522</td>
</tr>
</tbody>
</table>

– it is cheaper to pay a bribe than to attempt to change the system by ei-
er individual or collective efforts. For example, neither the corruption
perception index nor the personal experience of giving bribes turned
out to be correlated with an index of protest potential in the Russian
regions [42]. Protest potential refers to the respondent’s willingness to
join mass protests and his or her assessments of other people’s level of
dissatisfaction with life conditions. The corresponding correlation
coefficients were \(- 0.087 (N = 65)\) and \(- 0.075 (N = 72)\).

A vicious circle emerges as a result. The corruption of the traffic pol-
ce is self-replicating through rational choices under particular circum-
cumstances. Russian motorists’ rational considerations lead them to accept
bribery instead of fighting corruption. Attempts to enhance compliance
with the traffic laws and regulations by increasing their severity turn
out to be counter-productive: they contribute to the spread of corruption
instead. The observed decrease in the number of road accidents has
to be attributed to the spread of corruption as an intervening vari-
able between the expected (dis)utility of punishment and road safety,
even if some government officials may consider it as a validation for
their insistence on the “law and order” approach toward road safety.

The present study has several limitations that call for further re-
search. First, the available data do not suffice for testing \( H_2 \): the reported
results only warrant additional studies. Namely, in order to confirm or
reject the assumption that a power triad involving the legislators, the
traffic police and the motorists has emerged in Russia, one needs to col-
collect data on the legislators’ (gatekeepers’) interests – their voting
on bills regarding road safety and their record of committing traffic of-
fences. Second, more data are needed to more carefully differentiate
the impact on road safety of, on one hand, changes in the traffic laws and regulations and, on the other hand, the variation in the scope of
the corruption of the traffic police (personally experienced corruption
at the regional level is measured irregularly in Russia). Third, the col-
lection and inclusion in the model of data on the number of traffic enforce-
ment cameras per region would allow us to better assess the effect of
more severe penalties on road safety. In the case of violations of traffic
regulations automatically detected with the help of video-recording
devices, the traffic police have less room for abuses of power.
Acknowledgments

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