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THE ROADS WE TAKE AND GOVERNMENTS WE ELECT: EVIDENCE FROM THE USA

Introduction

A high number of researchers tend to view traffic jams and accidents as a result of, among other causes, collective action failure, when agents are reluctant to cooperate instead of coming to a win-win solution. At the same time we can view the state of infrastructure as a public good that is provided by the government or by cooperated agents.

A lot of empirical and theoretical works tend to agree on a crucial influence of the concept of social capital on the public goods provision. Moreover, social capital is often defined as a pool of norms, networks and values that helps individuals to overcome the free-rider problem «in the pursuit of socially valuable activities» [Guiso et al., 2010]. Our main goal is to examine the hypothesis mentioned above, but in a narrow form: whether the amount of social capital is positively correlated with the public goods provision. The example that we take is the problems of congestion and traffic accidents that is in our hypothesis partly determined by social capital through vertical channel. This influence is very indirect, so it is of our interest to check whether this hypothesis can be left alive. Zubareva (2011) has not found any signs of vertical channel influence of social capital on the traffic outcomes, but Russian society may not be politically developed enough to have this relationship at work. What we are trying to do in this paper is to test these hypothesis for the country with developed political traditions We look at the US data providing some information about the state of affairs on the US roads and about the social capital parameters among the US metropolitan areas.

Hypotheses

We posit that social capital affects traffic outcomes, such as traffic congestion and accidents in the US metropolitan areas. We consider two possible mechanisms for the link between social capital and traffic outcomes, a horizontal channel and a

vertical one. Through the horizontal channel social capital affects motorists' behavior (the «drivers» aspect); examples of pro-social behavior on the roads include courtesy, mutual respect and awareness of each other's needs; joint efforts to avoid problems on the roads, and if such problems should occur – deal with them cooperatively. The role of the vertical channel is to improve municipal governance and hence the supply and maintenance of road networks (the «citizens» aspect).

There is clear evidence from the works of Zubareva (2011), Nagler (2011) and Helliwell (2011), that general social capital can influence the number of traffic accidents and fatalities. Zubareva (2011) conducted a research project for 20 Russian cities that discovered a very strong positive relationship between the prices of voluntary automobile insurance policy and the stock of «free-riding» motorists' norms. Nagler (2011) found that among the US states the amount of trust affects negatively the number of road fatalities. The author proves causality of this link by using an elegant instrument – the height of snow covering. Helliwell (2011) notes the same relationship for the provinces of Canada. However, these research papers didn't found any indications of vertical channel. The aim of our paper is to illustrate its existence on the US data.

The conclusion that part of the social capital influence on roads may be indirect and really be implemented through the government (or vertical channel) can also be drawn from the recent literature. As we know from [Knack, 2002] social capital influences the quality of municipal governance. Civic culture, activism and electoral behavior address the quality of bureaucracy since they make the government more accountable. When the government is more accountable it has the incentives to provide a better supply of public goods (for example our case it is supply and maintenance of traffic networks). The studies of urban experts (e.g. [Downs, 2004]) have shown that better traffic networks mean lower congestion on average. Connecting these two links, social capital indeed might be important for traffic outcomes through government decisions.

Data on traffic outcomes

Data on congestion is taken from an open access database which is constructed by Texas Transportation Institute. It is available for 101 metropolitan areas for the period from 1982 to 2009. The data used in this database is combined primarily from the traffic volume data from the Federal Highway Administration (FHWA) and from other sources. The dataset presents a large amount of available indices, such as: travel speed, travel delay, wasted fuel, percent of congested travel, and so forth. But we farther rely on the Roadway Congestion Index (RCI) which is the most representative due to leveling the differences between areas with different roads length.

Generally speaking, the RCI reflects the balance between road construction and vehicle travel. However, Methodology for the 2010 Urban Mobility Report skeptically says that the RCI has been displaced by other indices, which define congestion as a travel time and delay, though RCI is still a useful measure. In order to examine whether our results are robust in terms of congestion indices we also estimate our model for another popular indices: Travel Time Index (TTI), Commuter Stress Index (CSI) and Travel Congested, as a percentage of vehicle-miles of travel (TC).

Data on traffic fatalities is limited because it is largely presented for states or cities, but not for metropolitan areas. The only relevant source we could find is bulletin of the organization «Transportation for America», which calculate an index called Pedestrian Danger Index for the US metropolitan areas. In fact, it is pedestrian fatalities rate averaged for 10 years and weighed by the percent of people walking from home to work on a daily basis.

We present a brief description of the indices in Table 1 below and the descriptive statistics in Table 2 right after the first table. It is noteworthy that they measure different features of congestion in different ways (the closest two are CSI and TTI, but in fact they have different semantic load), so we can use them all to assess the robustness of the relations discovered.

Table 1. Description of the traffic outcome indices

Road Congestion Index (RCI)	RCI is based on the ratio of the percentage of additional vehicle miles traveled throughout a region in any given period to the percentage of additional lane miles constructed throughout the region's road system during the same period [Shrank, Lomax, 2002]
Travel Time Index (TTI)	TTI compares Peak Period Travel Time to Free-Flow Travel Time. As Peak Period Travel Time consists of Delay Time and Free-Flow Travel Time, TTI represents the delay in traffic. [Methodology for the 2010 Urban Mobility Report]
Travel Congested (TC)	TC represents the amount of travel congested as a percentage of peak vehicle-miles of travel
Commuter Stress Index (CSI)	CSI is very similar to TTI, the main difference between them is that CSI includes only the travel in the peak directions during the peak periods while TTI includes travel in all directions during the peak period. Thus, the CSI is more indicative of the work trip experienced on a daily basis. [Methodology for the 2010 Urban Mobility Report]
Pedestrian Danger Index (PDI)	Pedestrian fatalities rate averaged for 10 years and weighed by the percent of people walking from home to work on a daily basis [Dangerous by Design, 2011]

Table 2. Descriptive statistics of the traffic outcome indices

Variable	Obs	Mean	Std. Dev.	Min	Max
RCI	51	1.086	.186	.74	1.56
TTI	51	1.182	.067	1.06	1.35
TC	51	54.882	19.034	18	86
CSI	51	1.261	.098	1.08	1.52
PDI	51	84.608	49.623	21.6	255.4

Measuring social capital

Metropolitan statistical areas are much harder to analyze when it comes to social capital variables, because of the lack of data. Social capital concept is measured in our research by indicators from the source «Civic Life in America», which collects it from different sources, but mainly from CPS[1] supplements, such as CPS Civic Engagement Supplement or Voting and Registration Supplement. Data is available for the year of 2008 for 51 metropolitan areas. In fact about 100 indicators are represented in the dataset which are divided into 5 groups: political action, service, belonging to a group, social connectedness and information activity. We have chosen 9 indicators of social capital, which we consider to reflect the vertical channel best: actual voting rate, any nonelectoral participation, volunteer rate, percent of adults who work with neighbors, any group involvement, involvement in service or civic associations, percent of adults who are the group officers or committee members, percent of adults who frequently dine with HH members and discuss politics. More detailed explanation is skipped for space saving reasons, but is available on request.

In Table 3 you can see descriptive statistics of social capital variables, all measured as a percent of adults. As can be seen, the variation is rather high, so we can try to use them as determinants of congestion and pedestrian fatalities.

[1] The Current Population Survey (CPS) is a monthly survey of about 60000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. Here and further the explanation of social capital variables is taken from the Civic Life In America Technical Note.

Table 3. Descriptive statistics of the congestion indices social capital variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Actual voting rate	51	59.282	7.489	42.9	75.9
Any political action	51	26.986	6.577	10.9	46.9
Volunteer rate	51	26.729	5.345	15.9	38.9
Work with neighbors	51	8.639	2.637	4.1	14.5
Any group involvement	51	35.608	6.136	21.5	46.8
Civic group involvement	51	6.267	2.349	1.9	13.5
Officers or committee	51	9.588	2.982	4	16.4
Dinner with HH members	51	88.91	3.342	80.2	95.7
Discuss politics	51	39.81	5.503	23.8	49.2

Other factors determining traffic outcomes

As control variables, we have used various indices that could increase traffic itself or could complicate or simplify the collective action and self-organization of the society. Our controls include (the log of) population[2], (the log of) per capita income[3], unemployment rate[4], percent of adults with a bachelor's diploma[5], measures of ethnic and income polarization and the density of population in this very metropolitan area. Again, for space saving reasons we don't include the explanation why they are selected and through what channels do we think they can distort the link between social capital and traffic outcomes and create endogeneity. However, the author can send this part of the paper on request.

Model estimating

We have estimated the standard model with control variables, where the dependent variable was CI, and the explanatory variable: one social capital variable per one regression, and control variables. We include only one social capital variable per regression because of high correlation between them.

$$CI = a + \beta_1 SC + \gamma_i Control_i + \varepsilon_i .$$

[2] Data are for 2008 and are from open Texas Transportation Institute database for MSAs.
[3] Data are for 2006 and are from the U.S. Bureau of the Census, State and Metropolitan Area Data Book, «Metropolitan areas» Table B-8.
[4] Data are for 2006 and are from the U.S. Bureau of the Census, State and Metropolitan Area Data Book, «Metropolitan areas» Table B-9.
[5] Data are for 2006 and are from the U.S. Bureau of the Census, State and Metropolitan Area Data Book, «Metropolitan areas» Table B-4.

In Table 4 we present our approach to estimation of social capital influence on the congestion and pedestrian road fatalities indices. As can be seen from this table the coefficients and the standard deviations do not fluctuate much. In other tables only the last column with all the control variables will be shown for space reasons[6].

Table 4. Estimation strategy example. Social capital variable is civic association involvement

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	RCI	RCI	RCI	RCI	RCI	RCI	RCI
Civic association involvement	-0.025***	-0.023**	-0.026***	-0.024**	-0.024**	-0.024**	-0.024**
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Peak time travelers (the log of)	0.128***	0.162***	0.147***	0.154***	0.157***	0.157***	0.156***
	(0.03)	(0.035)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
Population density (the log of)		-0.06*	-0.077**	-0.073**	-0.07**	-0.07*	-0.069*
		(0.033)	(0.035)	(0.034)	(0.034)	(0.035)	(0.036)
Income per capita (the log of)			0.250	0.201	0.110	0.109	0.035
			(0.178)	(0.178)	(0.203)	(0.249)	(0.263)
Unemployment rate, %				-3.937	-2.982	-2.979	-2.701
				(2.424)	(2.637)	(2.694)	(2.717)
Persons below povetry level, %					-0.011	-0.011	-0.013
					(0.012)	(0.013)	(0.013)
Bachelor's degree or higher, %						3.54e-05	0.0004
						(0.006)	(0.006)
Ethnic fractionalization index							0.192
							(0.211)
Constant	0.348	0.470*	-1.931	-1.344	-0.321	-0.313	0.399
	(0.231)	(0.236)	(1.733)	(1.741)	(2.062)	(2.437)	(2.566)
Observations	51	51	51	51	51	51	51
R-squared	0.444	0.481	0.502	0.530	0.539	0.539	0.548

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Results

The results are encouraging. Despite the long-distant mechanism of the influence, some variables of social capital are highly significant even after controlling for population and its density, employment rate, income, inequality and educational attainments that might increase or decrease the society's capacity for self-organizing in making the authorities accountable. Vote enrollment, any group involvement, the percentage of adults who are the officers in any group and civic group involvement are among such significant social capital variables. It is really surprising that the vertical channel (here it is vote enrollment influence) is represented so strongly in metro-

[6] These results are available on request.

politan areas' dimension, not only because the mechanism of influence is indirect and ambiguous, but also because the influence should have decreased while moving away from counties' level.

As you can see in Table 5 in our ultimate estimates vote enrollment is the most significant indicator, though participation in nonelectional political action doesn't matter for congestion. We predicted this result in our data decription, partly because of the direct influence of the vote on the government accountability, partly because of the indirect influence by revealing the hunger for political actions among population, which then results in better governance through other channels.To illustrate the strength of this result we provide you with an added variable plot in Fig 1. However, the other vertical channel variable didn't appear to work properly in terms of decreasing the congestion – any nonelectoral political action participation's influence on RCI is insignificant in our model. Regarding the economic significance of vote enrollment variable, it can be calculated that an increase of actual voting rate on one standard deviation causes an increase of RCI on 43% of standard deviation. That again shows us the strength of the found link.

Table 5. Determinants of Road Congestion Index (RCI)

Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Social capital variables	Actual voting rate	Any Nonelectoral Political Action	Volunteer rate	Work with Neighbors	Any Group Involvement	Group Officer or Committee Member	Dinner with HH Members	Discuss Politics	Civic association involvement
Independent variables									
Social capital variable	-0.011***	-0.0003	0.001	0.012	-0.007*	-0.015*	-0.002	-0.004	-0.024**
	(0.003)	(0.004)	(0.005)	(0.009)	(0.004)	(0.008)	(0.007)	(0.004)	(0.009)
Unemployment rate	-1.256	-4.028	-4.274	-4.763	-2.674	-2.785	-3.953	-3.988	-2.701
	(2.580)	(3.006)	(2.935)	(2.857)	(2.860)	(2.822)	(2.949)	(2.839)	(2.717)
Income per capita	-0.149	-0.061	-0.0629	-0.002	-0.099	0.046	-0.057	-0.128	0.035
(the log of)	(0.242)	(0.281)	(0.279)	(0.279)	(0.270)	(0.273)	(0.281)	(0.286)	(0.263)
Peak time travelers	0.137***	0.191***	0.194***	0.201***	0.178***	0.167***	0.189***	0.191***	0.156***
(the log of)	(0.035)	(0.037)	(0.038)	(0.036)	(0.036)	(0.037)	(0.038)	(0.036)	(0.036)
Bachelor's degree or	0.001	-8.62e-05	-0.001	-0.004	0.002	0.001	-0.001	0.001	0.0004
higher, %	(0.006)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)
Ethnic fractionalization	0.307	0.220	0.237	0.216	0.250	0.157	0.214	0.257	0.192
index	(0.197)	(0.231)	(0.233)	(0.223)	(0.219)	(0.220)	(0.232)	(0.228)	(0.211)
Persons below	-0.027**	-0.011	-0.01	-0.009	-0.016	-0.01	-0.012	-0.012	-0.013
povetry level, %	(0.013)	(0.014)	(0.015)	(0.014)	(0.014)	(0.014)	(0.015)	(0.014)	(0.013)
Population density	-0.04	-0.071*	-0.071*	-0.069*	-0.07*	-0.072*	-0.069*	-0.065*	-0.069*
(the log of)	(0.034)	(0.038)	(0.038)	(0.038)	(0.037)	(0.037)	(0.039)	(0.038)	(0.036)
Constant	2.836	1.072	1.037	0.390	1.712	0.181	1.181	1.845	0.399
	(2.410)	(2.753)	(2.750)	(2.749)	(2.661)	(2.667)	(2.776)	(2.844)	(2.566)
Observations	51	51	51	51	51	51	51	51	51
R-squared	0.611	0.477	0.478	0.496	0.516	0.521	0.477	0.487	0.548
Standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

The other three significant coefficients stand before the indicators which are related one way or another to group involvement. Any group involvement and the percentage of group officers or committee members among adults has their coefficients significant at 10% alpha level, while service or civic associations invol-

vement's influence significance is stronger. This result is of great importance for us, because it proves the correctness of our suggestion about the vertical channel mechanism – civic group involvement matters more than any group involvement on average. This result is reconciled with Knack's finding that «good governance groups» affect governance effectiveness with greater significance. So we can draw a conclusion that the influence «goes» this very way.

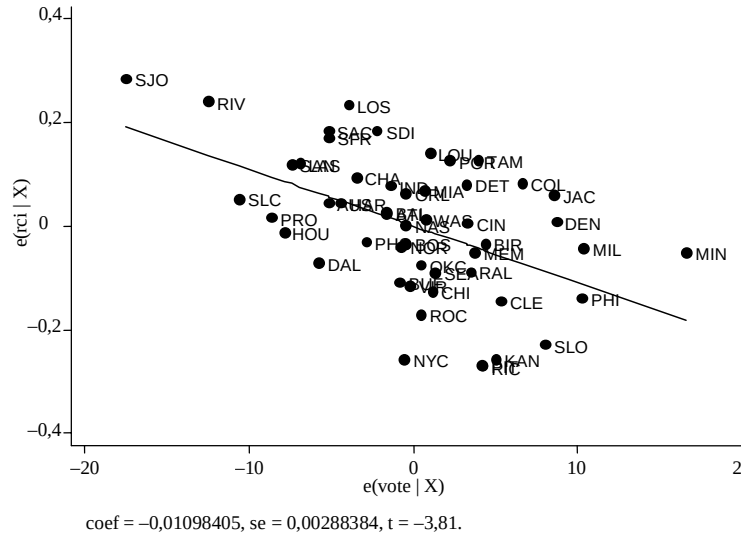

Fig. 1. Added variable plot RCI-VOTE

It is noteworthy that the volunteer rate and the percentage of adults who work with their neighbors on improving their communities have insignificant coefficients. It is expected and sudden result simultaneously, as volunteer rate was the main determinant of government quality in many times above mentioned Knack (2002). The influence of the indicators «percent of adults who dine with household members frequently» and «who discuss politics frequently» is expectedly insignificant, and it is the proof of their vague influence on government quality.

We also argue that the derived result is robust to changes in congestion indices. In Table 6 the proof is represented for two significant variables out of four. It can be seen that the found relations between congestion and vote enrollment are strongly robust for any index we choose. It is important to remember that almost all the congestion indices are derived from different data and are to show different features of congestion, so such a robust result can be viewed as a bright illustration of vertical

channel mechanism afoot. The coefficients before other significant variables after congestion index change are not so steady. Civic association involvement matters for three indices out of four; while any group involvement and percentage of officers or committee members have their coefficients significant only for two indices out of four.

Table 6. Congestion indices robustness check

VARIABLES	(1) RCI	(2) TTI	(3) CSI	(4) TC	(5) RCI	(6) TTI	(7) CSI	(8) TC
Actual voting rate, %	-0.011***	-0.003***	-0.005***	-1.071***				
	(0.003)	(0.001)	(0.002)	(0.284)				
Civic association involvement					-0.024**	-0.006*	-0.007	-2.355**
					(0.009)	(0.003)	(0.005)	(0.906)
Peak time travelers (the log of)	0.137***	0.051***	0.063***	14.75***	0.156***	0.057***	0.075***	16.53***
	(0.034)	(0.011)	(0.017)	(3.389)	(0.036)	(0.012)	(0.019)	(3.578)
Population density (the log of)	-0.04	-0.0198*	-0.0337*	-2.856	-0.0694*	-0.0273**	-0.0458**	-5.681
	(0.034)	(0.011)	(0.017)	(3.341)	(0.036)	(0.011)	(0.018)	(3.486)
Income per capita (the log of)	-0.149	0.123	0.197	-22.05	0.035	0.168*	0.260*	-3.958
	(0.242)	(0.079)	(0.122)	(23.88)	(0.263)	(0.084)	(0.133)	(25.79)
Unemployment rate, %	-1.256	-0.034	1.066	-151.1	-2.701	-0.438	0.292	-289.6
	(2.580)	(0.837)	(1.304)	(254.4)	(2.717)	(0.866)	(1.379)	(266.8)
Persons below povetry level, %	-0.027**	-0.001	-0.003	-2.525*	-0.013	0.003	0.003	-1.114
	(0.013)	(0.004)	(0.007)	(1.285)	(0.013)	(0.004)	(0.007)	(1.303)
Bachelor's degree or higher, %	0.001	0.002	0.004	0.460	0.0004	0.002	0.003	0.376
	(0.005)	(0.002)	(0.003)	(0.544)	(0.006)	(0.002)	(0.003)	(0.583)
Ethnic fractionalization index	0.307	0.0305	0.062	28.56	0.192	0.002	0.019	17.28
	(0.197)	(0.0639)	(0.1)	(19.42)	(0.211)	(0.067)	(0.107)	(20.76)
Constant	2.836	-0.243	-0.925	278.7	0.399	-0.855	-1.838	39.87
	(2.410)	(0.782)	(1.218)	(237.7)	(2.566)	(0.818)	(1.302)	(251.9)
Observations	51	51	51	51	51	51	51	51
R-squared	0.611	0.688	0.644	0.640	0.548	0.650	0.583	0.586

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As for the determinants of the PDI, it can be seen from the Table 7 that the indicators of group involvement have the most significant influence on the number of pedestrian fatalities, and they are with the «right» negative signs. Surprisingly, for the level of the PDI volunteer rate does matter while vote enrollment affects PDI only insignificantly. So we managed to find a bright illustration of social capital influence on the PDI, but we couldn't find it for vertical channel variables.

The final step of our analysis is to pose a question whether the following conclusion is right: congestion is affected mostly through the vertical channel while fatalities and accidents are determined by the general stock of social capital with higher probability. To make a first step in investigating this hypothesis, we select two variables which represent sooner one channel than another. We think that actual voting rate can be a good proxy for vertical channel influence while any group involvement is traditionally a horizontal channel variable determining general morals.

Then we include both of them into a regression determining congestion (RCI) and fatalities (PDI). Surprisingly, we see that horizontal channel loses its significance when included into the model for RCI while the same happens with vertical channel when included into the model for PDI. At a first approximation, our intuitive logic was right: the vertical channel matters for congestion in a greater way than the horizontal one while the latter one is more significant for fatalities.

Table 7. Determinants of Pedestrian Danger Index (PDI)

Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Social capital variables	Actual voting rate	Any Nonelectoral Political Action	Volunteer rate	Work with Neighbors	Any Group Involvement	Group Officer or Committee Member	Dinner with HH Members	Discuss Politics	Civic association involvement
Independent variables									
Social capital variable	-0.811	-0.870	-2.174*	3.324	-2.155***	-5.462***	-1.041	-0.378	-6.792***
	(-1.156)	(-1.055)	(-1.926)	(1.304)	(-2.960)	(-2.909)	(-0.765)	(-0.307)	(-3.397)
Population density	-12.23	-15.21	-14.59	-13.89	-14.13	-14.96	-13.06	-13.93	-14.05
(the log of)	(-1.189)	(-1.466)	(-1.467)	(-1.400)	(-1.261)	(-1.464)	(-1.307)	(-1.349)	(-1.261)
Peak time travelers	7.763	10.37	7.078	14.55*	7.519	2.736	10.17	11.72	1.528
(the log of)	(0.893)	(1.301)	(0.858)	(1.797)	(0.944)	(0.330)	(1.314)	(1.427)	(0.190)
Income per capita	-103.2	-89.82	-97.37	-79.56	-108.0	-56.88	-92.68	-103.6	-68.49
(the log of)	(-1.244)	(-1.073)	(-1.237)	(-0.946)	(-1.366)	(-0.724)	(-1.120)	(-1.118)	(-0.897)
Persons below	3.310	4.267	2.655	4.902	2.921	4.759	3.745	4.370	3.963
povetry level, %	(0.823)	(1.093)	(0.686)	(1.264)	(0.802)	(1.318)	(0.891)	(1.075)	(1.070)
Ethnic fractionalization	129.5*	113.0	100.2	121.5*	130.7**	98.43*	117.2*	127.1*	113.1*
index	(1.968)	(1.674)	(1.537)	(1.918)	(2.141)	(1.687)	(1.805)	(1.907)	(1.807)
Bachelor's degree or	-1.449	-1.187	-0.854	-2.594	-0.892	-1.111	-1.728	-1.391	-1.377
higher, %	(-0.930)	(-0.743)	(-0.564)	(-1.419)	(-0.622)	(-0.838)	(-1.136)	(-0.788)	(-0.961)
Unemployment rate	-1.989	-1.986	-1.909	-2.387*	-1.736	-1.719	-2.098*	-2.187*	-1.800
	(-1.549)	(-1.535)	(-1.611)	(-1.979)	(-1.418)	(-1.497)	(-1.688)	(-1.786)	(-1.537)
Constant	1.293	1.114	1.257	964.9	1.362	831.4	1.227	1.242	962.9
	(1.485)	(1.273)	(1.507)	(1.100)	(1.666)	(1.029)	(1.399)	(1.261)	(1.210)
Observations	51	51	51	51	51	51	51	51	51
R-squared	0.415	0.414	0.439	0.427	0.463	0.487	0.408	0.406	0.486

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8. Different outcomes – different channels?

Outcomes	Traffic Congestion	Pedestrian Fatalities
Independent variables		
Actual voting rate, %	**-0.0100*** (0.00308)**	0.122 (0.820)
Any group involvement, %	-0.002 (0.004)	**-2.181** (0.825)**
Population density	-0.044	-15.13
(the log of)	(0.027)	(11.14)
Peak time travelers	0.149***	10.22
(the log of)	(0.033)	(9.054)
Income per capita	-0.149	-109.9
(the log of)	(0.193)	(80.63)
Persons below	-0.027***	3.050
povetry level, %	(0.01)	(3.763)
Ethnic fractionalization	0.309*	129.7**
index	(0.182)	(61.41)
Bachelor's degree or	0.002	-0.876
higher, %	(0.004)	(1.444)
Unemployment rate	-1.215	-1.768
	(2.622)	(1.223)
Constant	2.836	1.712
	(2.410)	(2.661)
Observations	51	51
R-squared	0.611	0.516

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Conclusion

We found a strong and robust relationship between traffic jams in US's major metropolitan areas and political activity and mobilization of local population measured by election turnout. The latter exhibits strong statistically significant negative association with incidence and severity of traffic jams, even after controlling for population, employment rates, income, inequality and educational attainments[7]. The result is robust for different congestion indices. On the other hand, we see strong relationship between association activity and the number of pedestrian fatalities, consistent with the previous empirical findings. We can conclude that vibrant democracy indeed converts higher stocks of civic culture into better road conditions, but the influence is much greater for congestion than for the number of accidents or road fatalities.

This result is a part of a bigger project on social capital and traffic outcomes in Russia and the US. The vertical channel is not manifesting itself in the sample of Russian cities, but we found a strong evidence of its presence in a sample of the US cities. The observed difference may be ascribed to different levels of civic culture and democratic performance in the two countries.

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[7] Source: US Census Bureau.