

Online Appendix

Pour (Tear) Gas on Fire? Violent Confrontations and Anti-Government Backlash in Hong Kong

A Descriptive Statistics and Variable Construction

We obtained a raw data-set of geocoded tear gas release directly from the administrators of HKMap. We were only able to obtain reports of tear gas release but not other reports, as they contain sensitive data of protester presence. While the HKMap record certainly did not record every single release of tear gas, it was extremely effective in tracking police action. Moreover, we obtained the geodata of Yoshinoya outlets from Google's Geocoding API. Both of these geocoded data sets were merged into a constituency shapefile released by the Electoral Affairs Commission of Hong Kong, which is also the source of the electoral data. The demographic control variables are compiled from the 2016 by-census released by the Hong Kong Census and Statistics Department. In table [A.1](#), we display the summary statistics of the variables in the dataset. We then standardise all of the variables which are non-binary. Graphically, we show the geographical regions of the constituencies and the presence of Yoshinoya outlets in Figures [A.1](#) and [A.2](#) respectively.

Table A.1: Summary Statistics

	Observations	Mean	S.D.	Min	Max
Pro-Democracy vote share	452	0.565	0.072	0.09	0.89
Tear Gas (<i>binary</i>)	452	0.316	0.466	0	1
Tear Gas (<i>log</i>)	452	0.591	1.069	0	5.165
Tear Gas (<i>log +.1</i>)	452	-1.068	1.959	-2.303	5.160
Tear Gas (<i>4 rank</i>)	452	0.613	1.139	0	4
Distance to nearest tear gas exposure (<i>log</i>)	452	6.267	1.143	2.723	9.421
Tear gas exposure \leq 1km	452	0.708	0.455	0	1
Tear gas exposure $>$ 1km	452	0.292	0.455	0	1
Tear gas exposure $>$ 2km	452	0.100	0.300	0	1
Tear gas exposure $>$ 3km	452	0.062	0.241	0	1
Tear gas exposure $>$ 4km	452	0.042	0.201	0	1
Yoshinoya	452	0.122	0.327	0	1
Pro-Beijing incumbency	452	0.538	0.499	0	1
Turnout	452	0.708	0.041	0.564	0.842
Newly registered voters %	452	0.111	0.043	0.05	0.35
Degree holders %	420	0.224	0.117	0.065	0.569
Median age	420	44.023	3.379	33.9	55.5
Median income	420	18096.740	8389.924	11000	75000
Private housing %	420	0.528	0.405	0	1
Population Density	452	41688.77	35258.58	65.032	158656.1
Mobilization events (<i>binary</i>)	452	0.584	0.493	0	1
Mobilization events frequency (<i>log</i>)	452	0.052	2.191	-2.303	6.024

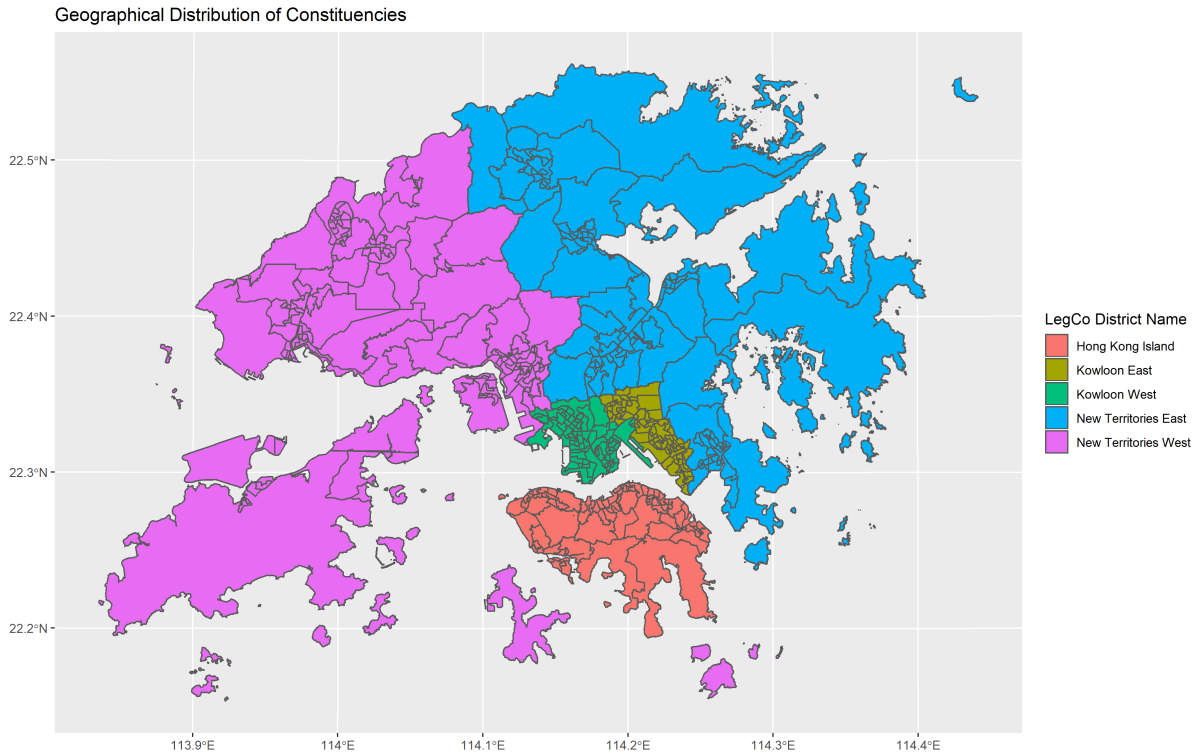


Figure A.1: Geographical distribution of constituencies

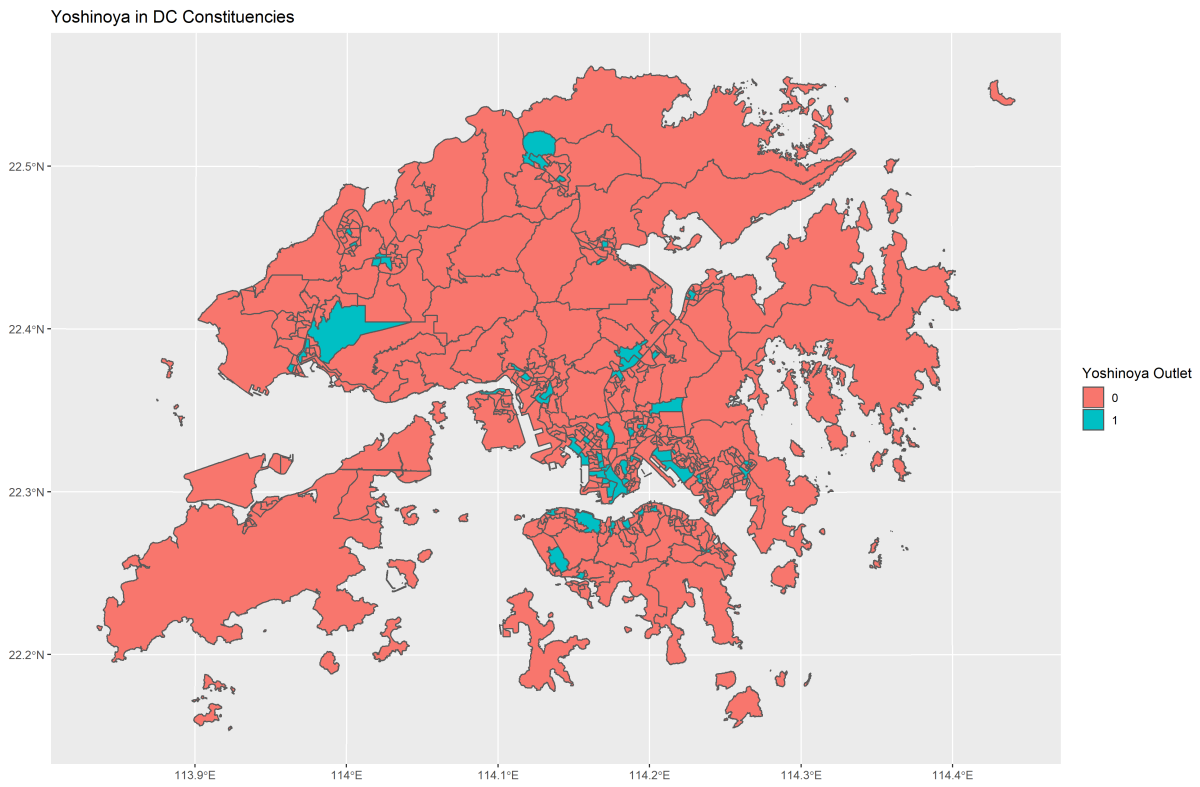


Figure A.2: Geographical distribution of Yoshinoya outlets

B Additional Models

B.1 Full Models with Controls

Table A.2: Presence of Tear Gas Reports Leads to Higher Pro-Democracy Support (*Binary Measure*)

	DV: Pro-Democracy Vote Share (2019)					
	OLS		2SLS		S-2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)
Tear gas (<i>binary</i>)	0.015** (0.007)	0.010 (0.006)	0.069*** (0.017)	0.064*** (0.017)	0.065*** (0.018)	0.060*** (0.015)
Pro-Beijing incumbency	-0.042*** (0.006)	-0.058*** (0.009)	-0.045*** (0.006)	-0.059*** (0.009)	-0.045*** (0.007)	-0.059*** (0.007)
Newly registered voters%		-0.027*** (0.007)		-0.027*** (0.007)		-0.028*** (0.006)
Degree holders%		0.019 (0.012)		0.015 (0.011)		0.013 (0.009)
Median age		-0.010*** (0.003)		-0.009** (0.004)		-0.010** (0.004)
Median income		-0.020** (0.010)		-0.016* (0.008)		-0.014** (0.007)
Private housing%		-0.005 (0.009)		-0.006 (0.009)		-0.004 (0.006)
Spatial ρ_y					-0.045** (0.017)	-0.034** (0.016)
Excl.-instruments F-stat.			42.2	34.8		
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	452	420	452	420	452	420

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.3: Higher Intensity of Tear Gas Reports Leads to Higher Pro-Democracy Support
(*Log Measure*)

	DV: Pro-Democracy Vote Share (2019)					
	OLS		2SLS		S-2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)
Tear gas (<i>log</i>)	0.006* (0.003)	0.005* (0.003)	0.025*** (0.008)	0.023*** (0.008)	0.029*** (0.007)	0.025*** (0.006)
Pro-Beijing incumbency	-0.042*** (0.006)	-0.058*** (0.009)	-0.043*** (0.006)	-0.058*** (0.009)	-0.044*** (0.007)	-0.058*** (0.006)
Newly registered voters%		-0.027*** (0.007)		-0.029*** (0.007)		-0.030*** (0.006)
Degree holders%		0.019 (0.013)		0.017 (0.013)		0.014* (0.009)
Median age		-0.010*** (0.003)		-0.011*** (0.003)		-0.011*** (0.004)
Median income		-0.020* (0.010)		-0.016 (0.009)		-0.014** (0.007)
Private housing%		-0.006 (0.010)		-0.009 (0.010)		-0.007 (0.006)
Spatial ρ_y					-0.048*** (0.017)	-0.037** (0.016)
Excl.-instruments F-stat.			60.0	59.4		
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	452	420	452	420	452	420

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

B.2 Alternative Coding of Tear Gas Report Frequencies

In table A.4, we show that by using alternative measures of tear gas reports, our results largely hold. The two alternative measures are: a four rank system that divides the raw variable into three equally sized bands with a ceiling at 4 (0 = 0, 1 to 5 = 1, 6 to 10 = 2, 11 to 15 = 3, 16 to 184 = 4), and the variable constructed by standardising the log of the raw number of reports plus 0.1.

Table A.4: Using Alternative Measures

	DV: Pro-Democracy Vote Share (2019)					
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	2SLS	S-2SLS	OLS	2SLS	S-2SLS
Tear Gas: 4 Rank	0.004* (0.002)	0.020** (0.007)	0.022*** (0.005)			
Tear Gas $\log+.1$				0.005* (0.003)	0.024*** (0.007)	0.026*** (0.006)
Spatial ρ_y			-0.037** (0.016)			-0.036** (0.016)
Excl.-instruments F-stat.		62.2			59.0	
Pro-Est. Incumbency	✓	✓	✓	✓	✓	✓
Newly Registered Voters %	✓	✓	✓	✓	✓	✓
Demographics Controls	✓	✓	✓	✓	✓	✓
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	420	420	420	420	420	420

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

B.3 Exclusion of Extreme Values in the Independent Variable

In table A.5, we show that our empirical results hold when we exclude districts with an extreme number of tear gas reports.

Table A.5: Excluding Extreme Tear Gas Frequency Districts

	DV: Pro-Democracy Vote Share (2019)					
	TG Frequency ≤ 100			TG Frequency ≤ 50		
	(1) OLS	(2) 2SLS	(3) S-2SLS	(4) OLS	(5) 2SLS	(6) S-2SLS
Tear gas (<i>binary</i>)	0.010 (0.006)	0.071*** (0.018)	0.063*** (0.016)	0.010 (0.006)	0.072*** (0.019)	0.063*** (0.017)
Spatial ρ_y			-0.035** (0.017)			-0.035** (0.017)
Excl.-instruments F-stat.		30.7			24.7	
Pro-Est. Incumbency	✓	✓	✓	✓	✓	✓
Newly Registered Voters %	✓	✓	✓	✓	✓	✓
Demographics Controls	✓	✓	✓	✓	✓	✓
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	417	417	417	414	414	414

	DV: Pro-Democracy Vote Share (2019)					
	TG Frequency ≤ 100			TG Frequency ≤ 50		
	(7) OLS	(8) 2SLS	(9) S-2SLS	(10) OLS	(11) 2SLS	(12) S-2SLS
Tear gas (<i>log</i>)	0.006** (0.003)	0.027*** (0.009)	0.030*** (0.007)	0.006* (0.003)	0.029*** (0.010)	0.032*** (0.008)
Spatial ρ_y			-0.036** (0.016)			-0.037** (0.016)
Excl.-instruments F-stat.		53.7			34.4	
Pro-Est. Incumbency	✓	✓	✓	✓	✓	✓
Newly Registered Voters %	✓	✓	✓	✓	✓	✓
Demographics Controls	✓	✓	✓	✓	✓	✓
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	417	417	417	414	414	414

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

B.4 Effects of Confrontations on Turnout

In table A.6, we show that the number of tear gas reports do not register a significant relationship with the overall turnout. We also show in table A.7 that the aforementioned relationship remains significant when the share of pro-democracy vote, which is both a post-treatment and pre-treatment variable, is used as the mediator proxying pro-democracy support.

Table A.6: No Significant Effects for Overall Turnout

	DV: Turnout (2019)					
	(1) OLS	(2) 2SLS	(3) S-2SLS	(4) OLS	(5) 2SLS	(6) S-2SLS
Tear gas (<i>binary</i>)	-0.003 (0.006)	-0.018 (0.019)	-0.012 (0.010)			
Tear gas (<i>log</i>)				-0.005 (0.003)	-0.006 (0.006)	-0.005 (0.004)
Spatial ρ_y			-0.004 (0.008)			-0.003 (0.008)
Excl.-instruments F-stat.		42.2			60.0	
Pro-Est. Incumbency	✓	✓	✓	✓	✓	✓
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	452	452	452	452	452	452

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.7: Tear Gas, Pro-Democracy Vote Share and Turnout

	DV: Turnout (2019)			
	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Tear gas (<i>binary</i>)	-0.005 (0.006)		-0.078* (0.040)	
Tear gas (<i>log</i>)		-0.006* (0.003)		-0.039** (0.016)
Pro-Democratic vote share	0.090** (0.032)	0.096*** (0.032)	0.066 (0.039)	0.110*** (0.032)
TG (<i>binary</i>) × Pro-Democratic vote share			0.128* (0.066)	
TG (<i>log</i>) × Pro-Democratic vote share				0.058* (0.029)
Pro-Est. Incumbency	✓	✓	✓	✓
Newly Registered Voters %	✓	✓	✓	✓
LegCo District FE	✓	✓	✓	✓
Constituencies	452	452	452	452

Note: Standard errors clustered at district council level are reported in parentheses.
 * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

B.5 The Effects of Distance to Tear Gas Exposure On Pro-Democracy Vote Share

In this appendix, we present the full regression tables and an additional visualization on the effects of tear gas exposure, subsetted by the Euclidean distance between the centroid of the constituency and the nearest tear gas report, on the pro-democracy vote share in 2019.

Table A.8: The Effects of Distance to Tear Gas Exposure on Pro-Democracy Vote Share (OLS)

	DV: Pro-Democracy Vote Share (2019)					
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Distance to nearest tear gas exposure (<i>log</i>)	-0.012*** (0.003)					
Tear gas exposure \leq 1km		0.020*** (0.006)				
Tear gas exposure > 1km			-0.020*** (0.006)			
Tear gas exposure > 2km				-0.065*** (0.015)		
Tear gas exposure > 3km					-0.073*** (0.015)	
Tear gas exposure > 4km						-0.065*** (0.020)
Pro-Beijing incumbency	-0.057*** (0.009)	-0.057*** (0.009)	-0.057*** (0.009)	-0.057*** (0.008)	-0.058*** (0.009)	-0.059*** (0.009)
Newly registered voters%	-0.027*** (0.007)	-0.026*** (0.007)	-0.026*** (0.007)	-0.023*** (0.007)	-0.023*** (0.007)	-0.026*** (0.007)
Degree holders%	0.015 (0.012)	0.015 (0.012)	0.015 (0.012)	0.013 (0.010)	0.016 (0.011)	0.018 (0.012)
Median age	-0.010*** (0.003)	-0.010*** (0.003)	-0.010*** (0.003)	-0.007** (0.003)	-0.007** (0.003)	-0.008** (0.003)
Median income	-0.015 (0.009)	-0.018* (0.009)	-0.018* (0.009)	-0.016* (0.008)	-0.017* (0.008)	-0.020* (0.010)
Private housing%	-0.003 (0.008)	-0.003 (0.009)	-0.003 (0.009)	0.003 (0.007)	0.001 (0.008)	-0.001 (0.008)
LegCo District FE Constituencies	✓ 420	✓ 420	✓ 420	✓ 420	✓ 420	✓ 420

Note: Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.9: The Effects of Distance to Tear Gas Exposure on Pro-Democracy Vote Share (2SLS)

	DV: Pro-Democracy Vote Share (2019)					
	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Distance to nearest tear gas exposure (<i>log</i>)	-0.033*** (0.010)					
Tear gas exposure \leq 1km		0.137** (0.058)				
Tear gas exposure > 1km			-0.137** (0.058)			
Tear gas exposure > 2km				-0.216** (0.100)		
Tear gas exposure > 3km					-0.294** (0.135)	
Tear gas exposure > 4km						-0.392** (0.180)
Pro-Beijing incumbency	-0.056*** (0.008)	-0.051*** (0.008)	-0.051*** (0.008)	-0.055*** (0.007)	-0.059*** (0.008)	-0.065*** (0.011)
Newly registered voters%	-0.027*** (0.007)	-0.021** (0.008)	-0.021** (0.008)	-0.013* (0.007)	-0.011 (0.009)	-0.019** (0.008)
Degree holders%	0.007 (0.012)	-0.009 (0.017)	-0.009 (0.017)	-0.002 (0.012)	0.005 (0.013)	0.013 (0.013)
Median age	-0.009*** (0.003)	-0.012*** (0.004)	-0.012*** (0.004)	-0.001 (0.004)	0.001 (0.006)	0.002 (0.005)
Median income	-0.006 (0.009)	0.004 (0.013)	0.004 (0.013)	-0.003 (0.008)	-0.002 (0.007)	-0.013 (0.010)
Private housing%	-0.001 (0.008)	0.007 (0.010)	0.007 (0.010)	0.022 (0.014)	0.017 (0.012)	0.020 (0.013)
Excl.-instruments F-stat.	38.4	7.9	7.9	8.6	12.4	10.7
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	420	420	420	420	420	420

Note: Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

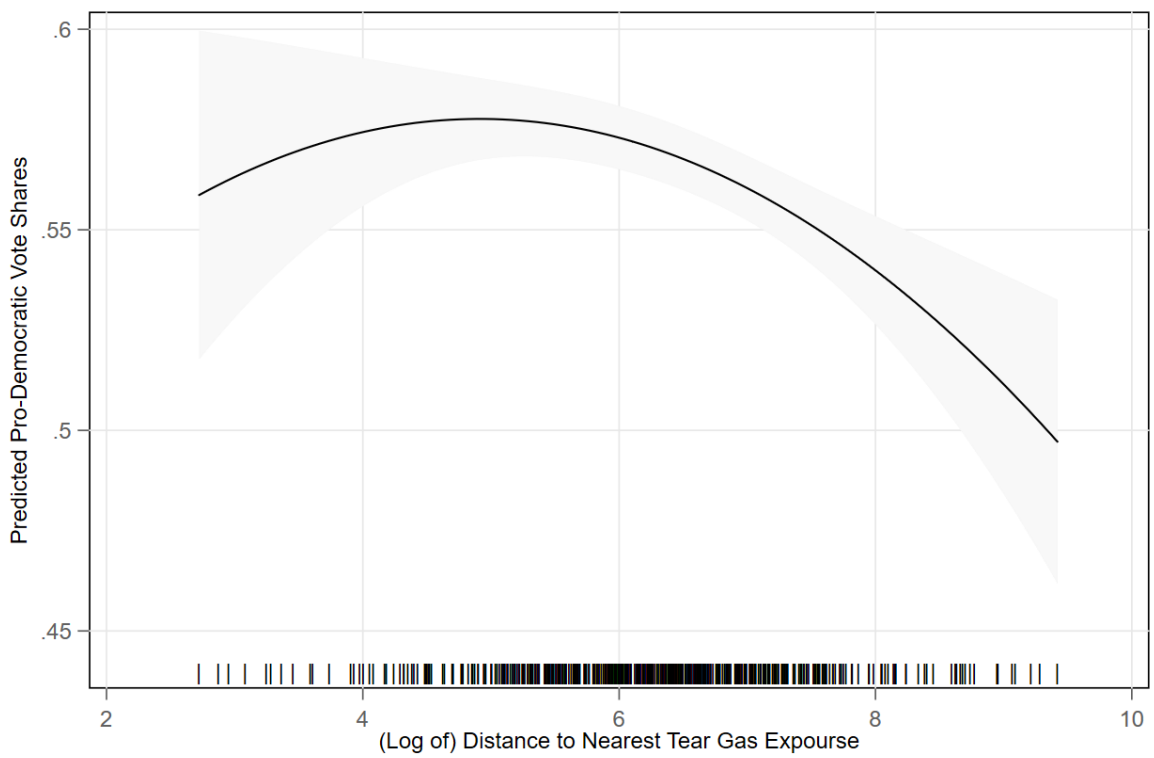


Figure A.3: Effect of tear gas reports on pro-democracy vote share decreasing in logged distance from centroid of constituency

C Alternative Explanation

C.1 Protester Mobilization

In this appendix, we test the alternative explanation that it was protester mobilization rather than police repression on protesters, peaceful or violent, that led to the increase of pro-democracy vote share. We draw protester mobilization data from the *ANTIELAB Research Data Archive* (Teo and Fu 2021). The Archive was compiled by geocoding mobilization posts from protest Telegram channels using text mining techniques. We then match the event’s location into district council districts and calculate the frequency in which protesters called for collective action in the constituency. In Table A.10, we show that even after controlling for protester mobilization, in a binary measure or the log of the number of mobilization events plus one, police repression has a positive effect on pro-democracy vote share.

Table A.10: Alternative Explanations: Protester Mobilization

	DV: Pro-Democracy Vote Share (2019)					
	OLS		2SLS		S-2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)
Tear gas (<i>binary</i>)	0.010*	0.009*	0.076***	0.088***	0.062***	0.067***
	(0.005)	(0.005)	(0.018)	(0.022)	(0.016)	(0.018)
Mobilization events (<i>binary</i>)	-0.003		-0.018**		-0.015*	
	(0.007)		(0.008)		(0.008)	
Mobilization events frequency (<i>log</i>)		0.000		-0.012**		-0.008*
		(0.003)		(0.005)		(0.004)
Spatial ρ_y					-0.033**	-0.032*
					(0.016)	(0.017)
Excl.-instruments F-stat.			23.0	15.5		
Pro-Est. Incumbency	✓	✓	✓	✓	✓	✓
New Registered Voters %	✓	✓	✓	✓	✓	✓
Demographics Controls	✓	✓	✓	✓	✓	✓
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	420	420	420	420	420	420

	DV: Pro-Democracy Vote Share (2019)					
	OLS		2SLS		S-2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)
Tear gas (<i>log</i>)	0.005**	0.005*	0.026***	0.031***	0.026***	0.029***
	(0.002)	(0.002)	(0.008)	(0.010)	(0.006)	(0.007)
Mobilization events (<i>binary</i>)	-0.003		-0.013		-0.012*	
	(0.007)		(0.008)		(0.007)	
Mobilization events frequency (<i>log</i>)		-0.000		-0.011**		-0.009**
		(0.003)		(0.005)		(0.004)
Spatial ρ_y					-0.035**	-0.035**
					(0.016)	(0.016)
Excl.-instruments F-stat.			41.1	27.1		
Pro-Est. Incumbency	✓	✓	✓	✓	✓	✓
New Registered Voters %	✓	✓	✓	✓	✓	✓
Demographics Controls	✓	✓	✓	✓	✓	✓
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	420	420	420	420	420	420

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

C.2 Population Density

In this appendix, we test the alternative explanation that it was population density driving our results. We include population density as an additional control in our main models. Density in the models is defined as the inverse of the constituency's total area in kilometers squared (km^2).

Table A.11: Alternative Explanation: Tear Gas in Higher Population Density Districts

	DV: Pro-Democracy Vote Share (2019)					
	Tear Gas (<i>binary</i>)			Tear Gas (<i>log</i>)		
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	2SLS	S-2SLS	OLS	2SLS	S-2SLS
Tear gas (<i>binary</i>)	0.009 (0.006)	0.063*** (0.017)	0.057*** (0.015)			
Tear gas (<i>log</i>)				0.005* (0.003)	0.023*** (0.008)	0.024*** (0.006)
Population density	0.009*** (0.002)	0.008*** (0.003)	0.006 (0.004)	0.009*** (0.002)	0.009*** (0.002)	0.007* (0.004)
Pro-Beijing incumbency	-0.057*** (0.009)	-0.058*** (0.009)	-0.058*** (0.007)	-0.057*** (0.009)	-0.057*** (0.009)	-0.057*** (0.006)
Newly registered voters%	-0.026*** (0.007)	-0.026*** (0.007)	-0.027*** (0.006)	-0.026*** (0.007)	-0.027*** (0.007)	-0.028*** (0.006)
Degree holders%	0.017 (0.012)	0.014 (0.011)	0.013 (0.009)	0.017 (0.012)	0.016 (0.013)	0.014* (0.008)
Median age	-0.009** (0.003)	-0.009** (0.004)	-0.009** (0.004)	-0.009*** (0.003)	-0.010*** (0.003)	-0.010*** (0.004)
Median income	-0.018* (0.010)	-0.013 (0.009)	-0.013** (0.007)	-0.018* (0.010)	-0.014 (0.010)	-0.013* (0.007)
Private housing%	-0.001 (0.008)	-0.003 (0.008)	-0.002 (0.006)	-0.002 (0.009)	-0.005 (0.009)	-0.005 (0.006)
Spatial ρ_y			-0.023 (0.018)			-0.024 (0.017)
Excl.-instruments F-stat.		35.2			59.2	
LegCo District FE	✓	✓	✓	✓	✓	✓
Constituencies	420	420	420	420	420	420

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

D Matching

D.1 Coarsened Exact Matching (CEM)

To account for potential differences on key covariates between the treated and control groups, we use coarsened exact matching (CEM) to ensure that the treated and control groups are balanced in the sense that their covariates have (approximately) equal distributional characteristics. We match treated districts which have recorded tear gas rounds, with controlled ones that have not.¹⁷ We focus on four key pre-treatment observables, *median age*, *median income*, *percentage of degree holders*, and the *percentage of private housing*, creating separate treatment and control samples post-CEM for the treatment of tear gas rounds.¹⁸ Moreover, we estimate the average treatment effects (ATE) of the binary tear gas on pro-democracy vote share with from the CEM matched samples with full controls. It is important to note that matching procedures would invariably reduce the number of observations, which presents a trade-off with statistical power. In this case, the number of observations is almost halved, and we would need to additionally assume that the observations are dropped independent of potential outcomes.

¹⁷The advantages of CEM is performing the balancing *ex ante*, and coarsening a set of observed covariates performing exact matching on the coarsened data, “pruning” observations then running estimations using the original (but pruned) uncoarsened data (Iacus, King and Porro 2012).

¹⁸Table A.13 shows that the demographic differences between treatment and control constituencies are reduced after CEM matching, suggesting balance in the two set of samples.

Table A.12: Coarsened Exact Matching (CEM)

	DV: Pro-Democracy Vote Share (2019)	
	OLS	2SLS
	(1)	(2)
Tear gas (<i>binary</i>)	0.024** (0.009)	0.108** (0.040)
Pro-Beijing incumbency	-0.052*** (0.011)	-0.053*** (0.012)
Newly registered voters%	-0.025* (0.013)	-0.022 (0.014)
Degree holders%	-0.005 (0.026)	-0.014 (0.033)
Median age	-0.006 (0.007)	-0.003 (0.008)
Median income	-0.004 (0.021)	0.004 (0.027)
Private housing%	0.012 (0.014)	0.015 (0.016)
Excl.-instruments F-stat.		11.2
CEM Matched	✓	✓
LegCo District FE	✓	✓
Constituencies	233	233

Note: *Yoshinoya* is the instrumental variable. Cluster standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

D.2 District Characteristics Before and After Coarsened Exact Matching Procedure

Table A.13: District Characteristics Before and After Coarsened Exact Matching Procedure

	Pre-CEM		Post-CEM	
	Tear Gas sample	Control sample	Tear Gas sample	Control sample
Median income	17657.14 (7455.57)	18316.54 (8824.61)	16554.29 (6429.98)	16988.19 (6379.24)
Median age	43.78 (3.12)	44.14 (3.50)	44.22 (3.17)	44.32 (3.27)
Degree holders %	0.23 (0.12)	0.22 (0.12)	0.20 (0.11)	0.20 (0.11)
Private housing %	0.57 (0.40)	0.50 (0.41)	0.46 (0.43)	0.47 (0.44)

Note: The mean and standard deviation (in parentheses) are reported. The CEM procedure involves matching on the Median income, Median age, % of Private housing, and % of Degree holders.

D.3 Alternative Matching Procedures

Table A.14 reports the estimated average treatment effect (ATE) of shooting tear gas on pro-democracy vote share in 2019 by different matching procedures.

The first three models employ a coarsened exact matching procedure (CEM) (Iacus, King and Porro 2012), the next three models employ a nearest neighbor matching procedure (NNMATCH), and the last model is estimated by propensity score matching (PSMATCH). The ATE from all matching procedures show that shooting tear gas have a positive and significant effect on pro-democracy vote share.

Table A.14: Average Treatment Effects with Different Matching Procedures

Model	ATE	N	Description
CEM	0.024**	265	Coarsened exact matching
CEM1	0.025***	265	CEM + LegCo FE
CEM2	0.126***	265	CEM + LegCo FE w/ 2SLS estimation
NNMATCH	0.014**	420	Nearest neighbor matching with four matches per treated observation exact matching on pro-establishment incumbency
NNMATCH1	0.014**	420	NNMATCH + bias adjusted
NNMATCH2	0.021**	233	NNMATCH2 + CEM sample
PSMATCH	0.012*	420	Propensity score matching + LegCo FE

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)
 Matching variables: median income, median age, and % of private housing and degree holders at constituency level.

E Instrument Validity

E.1 District Characteristics (w/ and w/o *Yoshinoya*)

Table A.15: District Characteristics (w/ and w/o *Yoshinoya*)

	<i>Yoshinoya</i> = 0	<i>Yoshinoya</i> = 1	<i>p</i> -value
Median income	18119.81 (8519.58)	17936.98 (7502.27)	0.882
Median age	44.06 (3.36)	43.75 (3.517)	0.531
Degree holders %	0.22 (0.12)	0.24 (0.12)	0.168

Note: The mean and standard deviation (in parentheses) are reported.

E.2 First Stage Estimation

In this section, we test whether the 2SLS and S-2SLS estimates are valid. The placebo tests provide a necessary but not sufficient condition for validity. We first present the first stage regression in table A.16.

Table A.16: IV: First Stage Estimates

	Tear Gas (<i>binary</i>)		Tear Gas (<i>log</i>)	
	(1) OLS	(2) OLS	(3) OLS	(4) OLS
<i>Yoshinoya</i>	0.361*** (0.057)	0.361*** (0.056)	1.011*** (0.133)	1.011*** (0.130)
Pro-Beijing incumbency		0.052 (0.056)		0.088 (0.110)
Newly registered voters%		-0.007 (0.021)		0.026 (0.050)
Constituencies	452	452	452	452

Note: Standard errors clustered at district council level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

E.3 Placebo Tests

We repeat our main models with the dependent variable replaced as the 2015 and 2011 pro-democracy vote share in constituencies contested by pro-democracy candidates, excluding constituencies with no pro-democracy candidates. The results are shown in table A.17, A.18, A.19 A.20, A.21 and A.22. All of the key terms are not significant, and their point estimates are very close to zero.

Table A.17: Placebo Test of Replicating the Main Models With 2015 Results: OLS

	DV: Pro-Democracy Vote Share t_{-1} (2015)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Tear gas (<i>binary</i>)	-0.002 (0.013)	-0.003 (0.007)	-0.002 (0.007)	-0.008 (0.007)				
Tear gas (<i>log</i>)					-0.001 (0.006)	-0.003 (0.003)	-0.003 (0.003)	-0.004 (0.004)
Pro-Beijing incumbency		-0.151*** (0.014)	-0.152*** (0.015)	-0.154*** (0.014)		-0.152*** (0.014)	-0.152*** (0.015)	-0.155*** (0.014)
Newly registered voters%			-0.004 (0.013)	0.005 (0.013)			-0.003 (0.013)	0.006 (0.013)
Degree holders%				0.049** (0.022)				0.049** (0.022)
Median age				0.014 (0.010)				0.014 (0.010)
Median income				-0.036** (0.016)				-0.036** (0.016)
Private housing%				-0.020* (0.011)				-0.019 (0.011)
LegCo District FE Constituencies	✓ 296	✓ 296	✓ 296	✓ 288	✓ 296	✓ 296	✓ 296	✓ 288

Note: Standard errors clustered at district council level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.18: Placebo Test of Replicating the Main Models With 2015 Results: 2SLS

	DV: Pro-Democracy Vote Share t_{-1} (2015)							
	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS	(7) 2SLS	(8) 2SLS
Tear gas (<i>binary</i>)	0.021 (0.061)	0.008 (0.045)	0.009 (0.046)	-0.000 (0.054)				
Tear gas (<i>log</i>)					0.007 (0.021)	0.003 (0.015)	0.003 (0.015)	-0.000 (0.019)
Pro-Beijing incumbency		-0.151*** (0.014)	-0.153*** (0.015)	-0.154*** (0.014)		-0.151*** (0.014)	-0.153*** (0.015)	-0.154*** (0.014)
Newly registered voters%			-0.005 (0.014)	0.005 (0.015)			-0.005 (0.014)	0.005 (0.015)
Degree holders%				0.049** (0.022)				0.049** (0.022)
Median age				0.014 (0.010)				0.014 (0.010)
Median income				-0.036* (0.018)				-0.036* (0.017)
Private housing%				-0.020* (0.012)				-0.020 (0.013)
Excl.-instruments F-stat.	35.3	34.4	32.5	21.9	28.4	27.8	27.4	20.5
LegCo District FE	✓	✓	✓	✓	✓	✓	✓	✓
Constituencies	296	296	296	288	296	296	296	288

Note: Standard errors clustered at district council level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.19: Placebo Test of Replicating the Main Models With 2015 Results: S-2SLS

	DV: Pro-Democracy Vote Share t_{-1} (2015)							
	(1) S-2SLS	(2) S-2SLS	(3) S-2SLS	(4) S-2SLS	(5) S-2SLS	(6) S-2SLS	(7) S-2SLS	(8) S-2SLS
Tear gas (<i>binary</i>)	-0.020 (0.053)	-0.014 (0.039)	-0.005 (0.037)	-0.005 (0.036)				
Tear gas (<i>log</i>)					-0.010 (0.020)	-0.008 (0.014)	-0.007 (0.014)	-0.006 (0.013)
Pro-Beijing incumbency		-0.151*** (0.012)	-0.152*** (0.013)	-0.154*** (0.013)		-0.151*** (0.012)	-0.152*** (0.013)	-0.154*** (0.013)
Newly registered voters%			-0.003 (0.011)	0.005 (0.013)			-0.002 (0.011)	0.007 (0.013)
Degree holders%				0.050*** (0.017)				0.050*** (0.017)
Median age				0.013* (0.008)				0.013* (0.008)
Median income				-0.037*** (0.012)				-0.038*** (0.012)
Private housing%				-0.021* (0.011)				-0.020* (0.012)
Spatial ρ_y	0.035 (0.056)	0.019 (0.044)	0.014 (0.044)	0.023 (0.043)	0.035 (0.052)	0.020 (0.042)	0.019 (0.042)	0.028 (0.042)
LegCo District FE Constituencies	✓ 296	✓ 296	✓ 296	✓ 288	✓ 296	✓ 296	✓ 296	✓ 288

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.
 * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.20: Placebo Test of Replicating the Main Models With 2011 Results: OLS

	DV: Pro-Democracy Vote Share t_{-2} (2011)							
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS
Tear gas (<i>binary</i>)	-0.018 (0.023)	-0.017 (0.018)	-0.013 (0.018)	-0.008 (0.018)				
Tear gas (<i>log</i>)					-0.014 (0.010)	-0.015* (0.008)	-0.012 (0.008)	-0.007 (0.009)
Pro-Beijing incumbency		-0.141*** (0.015)	-0.146*** (0.015)	-0.145*** (0.014)		-0.141*** (0.015)	-0.146*** (0.015)	-0.145*** (0.014)
Newly registered voters%			-0.022* (0.012)	-0.008 (0.016)			-0.020 (0.012)	-0.007 (0.016)
Degree holders%				0.024 (0.023)				0.024 (0.023)
Median age				-0.004 (0.010)				-0.004 (0.010)
Median income				-0.008 (0.018)				-0.009 (0.017)
Private housing%				-0.050** (0.021)				-0.048** (0.021)
LegCo District FE Constituencies	✓ 261	✓ 261	✓ 261	✓ 259	✓ 261	✓ 261	✓ 261	✓ 259

Note: Standard errors clustered at district council level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.21: Placebo Test of Replicating the Main Models With 2011 Results: 2SLS

	DV: Pro-Democracy Vote Share t_{-2} (2011)							
	(1) IV	(2) IV	(3) IV	(4) IV	(5) IV	(6) IV	(7) IV	(8) IV
Tear gas (<i>binary</i>)	-0.063 (0.110)	-0.090 (0.113)	-0.084 (0.114)	-0.059 (0.120)				
Tear gas (<i>log</i>)					-0.020 (0.035)	-0.029 (0.036)	-0.028 (0.036)	-0.020 (0.040)
Pro-Beijing incumbency		-0.140*** (0.018)	-0.144*** (0.018)	-0.144*** (0.016)		-0.141*** (0.016)	-0.145*** (0.016)	-0.145*** (0.015)
Newly registered voters%			-0.017 (0.012)	-0.005 (0.013)			-0.015 (0.012)	-0.004 (0.012)
Degree holders%				0.025 (0.023)				0.023 (0.023)
Median age				-0.006 (0.011)				-0.004 (0.010)
Median income				-0.010 (0.018)				-0.011 (0.018)
Private housing%				-0.048* (0.024)				-0.044 (0.030)
Excl.-instruments F-stat.	19.9	18.8	17.1	15.8	26.0	25.4	22.2	20.4
LegCo District FE	✓	✓	✓	✓	✓	✓	✓	✓
Constituencies	261	261	261	259	261	261	261	259

Note: Standard errors clustered at district council level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.22: Placebo Test of Replicating the Main Models With 2011 Results: S-2SLS

	DV: Pro-Democracy Vote Share t_{-2} (2011)							
	(1) S-2SLS	(2) S-2SLS	(3) S-2SLS	(4) S-2SLS	(5) S-2SLS	(6) S-2SLS	(7) S-2SLS	(8) S-2SLS
Tear gas (<i>binary</i>)	-0.039 (0.076)	-0.029 (0.066)	-0.007 (0.067)	-0.049 (0.054)				
Tear gas (<i>log</i>)					-0.026 (0.027)	-0.021 (0.023)	-0.018 (0.024)	-0.031 (0.020)
Pro-Beijing incumbency		-0.139*** (0.019)	-0.144*** (0.019)	-0.142*** (0.019)		-0.139*** (0.019)	-0.143*** (0.019)	-0.142*** (0.019)
Newly registered voters%			-0.022 (0.015)	-0.003 (0.016)			-0.017 (0.016)	0.000 (0.016)
Degree holders%				0.027 (0.024)				0.024 (0.024)
Median age				-0.005 (0.012)				-0.003 (0.012)
Median income				-0.013 (0.017)				-0.017 (0.017)
Private housing%				-0.048*** (0.017)				-0.041** (0.018)
Spatial ρ_y	0.088 (0.083)	0.098 (0.074)	0.082 (0.075)	0.158** (0.069)	0.096 (0.077)	0.107 (0.069)	0.101 (0.070)	0.166** (0.066)
LegCo District FE	✓	✓	✓	✓	✓	✓	✓	✓
Constituencies	261	261	261	259	261	261	261	259

Note: *Yoshinoya* is the instrumental variable. S-2SLS refers to spatial two-stage least squares estimations, and the \mathbf{W} matrix for spatial models based on contiguous neighbors. Cluster standard errors are reported in parentheses.
 * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)