Table 1: Meta-analysis of 33 studies of the effect of rainfall on voter turnout

Source	Country	Election(s)	Study level	Rainfall-turnout effect (%-points per cm)
Merrifield (1993)	US	General (1982)	Aggregate (state)	-2.36***
Knack (1994), I	US	Presidential (1984-1988)	Individual (survey, validated turnout)	No effect
Knack (1994), II	US	House (1986)	Individual (survey, validated turnout)	No effect
Shachar & Nalebuff (1999), I	US	Presidential (1948-1988)	Aggregate (state)	-1.37***
Shachar & Nalebuff (1999), II	US	Presidential (1948-1988)	Aggregate (state)	-3.17***
Gatrell & Bierly (2002)	US (Kentucky)	Presidential, state, gubernatorial (1990-2000)	Aggregate (county)	IC (negative effect)
Lakhdar & Dubois (2006)	France	Parliamentary (1986-2002)	Aggregate (département)	-1.50*
Gomez et al. (2007)	US	Presidential (1948-2000)	Aggregate (county)	-0.33**
Fraga & Hersh (2010)	US	Presidential (1948-2000)	Aggregate (county)	-0.26**
Hansford & Gomez (2010)	US	Presidential (1948-2000)	Aggregate (county)	-0.40**
Eisinga et al. (2012)	The Netherlands	Parliamentary (1971-2010)	Aggregate (municipality)	-0.41***
Steinbrecher (2013)	Germany	Parliamentary (1994-2009)	Individual (survey)	No effect
Artés (2014)	Spain	Parliamentary (1986-2011)	Aggregate (municipality)	-0.53**
Lo Prete & Revelli (2014)	Italy	Multiple (2001-2010)	Aggregate (city)	IC (positive effect of rainfall dummy)
Persson et al. (2014), I	Sweden	Parliamentary (1976-2010)	Aggregate (municipality)	No effect
Persson et al. (2014), II	Sweden	Parliamentary (1991-2006)	Individual (survey, validated turnout)	No effect
Persson et al. (2014), III	Sweden	Parliamentary (2002-2010)	Individual (survey, validated turnout)	No effect
Sforza (2014)	Italy	Parliamentary (2008-2013)	Aggregate (municipality)	IC (negative effect of rainfall dummy)
Arnold & Freier (2016)	Germany (North-Rhine Westphalia)	Municipal and state (1975-2010)	Aggregate (municipality)	-1.20***
Fujiwara et al. (2016)	US	Presidential (1952-2012)	Aggregate (county)	-0.55**
Chen (2017)	Taiwan	Parliamentary (1998-2012)	Aggregate (county)	-1.59**
Cooperman (2017)	US	Presidential (1948-2000)	Aggregate (county)	No effect
Lee & Hwang (2017)	South Korea	Parliamentary and municipal (1995-1999)	Aggregate (municipality)	-2.17*
Arnold (2018)	Germany (Bavaria)	Municipal (1946-2009)	Aggregate (municipality)	-1.00***
Horiuchi & Kang (2018)	US	Presidential (1948-2000)	Aggregate (county)	-0.44**
Stockemer & Wigginton (2018)	Canada	Parliamentary (2004-2015)	Aggregate (districts)	-1.13***
Leslie & Arı (2018)	UK	Referendum (2016)	Aggregate (constituency)	-0.9**
Kang (2019)	South Korea	Parliamentary (2000-2012)	Aggregate (districts)	IC (negative effect of rainfall dummy)
Meier et al. (2019)	Switzerland	Direct democratic votes (1958-2014)	Aggregate (municipality)	IC (negative effect of heavy rain dummy)
Rudolph (2019)	UK	Brexit referendum (2016)	Aggregate (districts)	-0.59**
Garcia-Rodriguez & Redmond (2020)	Ireland	Parliamentary (1989-2016)	Aggregate (constituency)	-0.51**
Lind (2020)	Norway	Municipal (1972-2010)	Aggregate (municipality)	0.003***
The present study	Denmark	Municipal (2013-2017)	Individual (registry, validated turnout)	-0.84***
			Average	-0.76
			Median	-0.52
			Range	[-3.17, 0.003]
			N	33 (28)

Notes: IC = incalculable. All effect sizes are expressed in centimeters. *p<0.1;**p<0.05;***p<0.01. Studies that report non-significant effects are included in the average and median as 0.00. Excluding the present study does not alter the average (median decreases to -0.51). The effective N, excluding five studies using rainfall dummies, is 28. We exclude effects of other weather variables from the table as rainfall dominates the literature. For IV-studies, we report the first-stage effect of rainfall on turnout. Studies are sorted by year of publication (oldest first). See appendix for more details about research designs (Table A8).