

Does Citizen Participation Affect Environmental Governance in China?

Mark Buntaine, Michael Greenstone, et al. (2022). **Does the Squeaky Wheel Get More Grease? The Direct and Indirect Effects of Citizen Participation on Environmental Governance in China.** National Bureau of Economic Research (NBER) working paper.

An increasingly popular tool for reducing pollution is to encourage bottom-up participation in environmental governance. China has created official channels for the public to report pollution and violations of emissions standards set by regulators, though how effective such efforts have been remains unclear. This study explores the direct and indirect impacts of public participation in the enforcement of environmental standards in China, the world's largest polluter and manufacturer.

The data. Researchers conducted a nationwide field experiment using the Ministry of Ecology and Environment's (MEE) Continuous Emissions Monitoring System (CEMS). The system automatically collects hourly emissions data from 24,620 major polluting plants around the country, which are responsible for 75% of China's total industrial emissions.

Each CEMS firm was randomly assigned to either a control group or one of several treatment groups that mirror the officially-sanctioned ways that citizens and non-governmental organizations (NGOs) in China already participate in monitoring pollution. From May to December 2020, researchers began each day by identifying all CEMS firms that violated relevant emissions standards. When a treated firm committed a violation, citizen volunteers recruited from three partnering NGOs filed an appeal through one of two channels: (1) *private appeals*, where the citizens complained to the regulator or the firm about the violation in ways that could not be observed by members of the public; and (2) *public appeals*, where the citizens complained about the violation on Weibo, a popular Chinese social media platform comparable to Twitter. For half of the public appeals, researchers hired a social media firm to increase the number of "likes" and "shares" to gauge whether public appeals with higher visibility generated more significant regulatory responses. In total, the experiment intervened against nearly 3,000 pollution violations across a period of 8 months.

INSIGHTS

■ A nationwide field experiment in China showed that public appeals on social media reduced factory emissions violations by 62% and emissions concentrations by between 3.7% and 12.2%, depending on the pollutant measured.

■ Private appeals directly to regulators caused only marginal declines in emissions violations and emissions concentrations.

Final analyses were conducted after researchers merged the MEE data on all citizen appeals against the CEMS firms in 2020, which includes appeals filed by citizens on their own volition and the ones generated by the experiment, and the Ministry of Commerce's administrative data on registered firms.

Effect of citizen appeals on emission violations and emission concentrations

	Emissions violations	Emissions concentrations	
		Sulfur dioxide (SO ₂)	Chemical oxygen demand (COD)
Private appeal to regulator	24%	No change	No change
Public appeal on social media	62%	12.2%	3.7%

Public pressure improves environmental performance. The researchers found that public appeals to the regulator through social media reduced violations by more than 60%, and decreased air and water pollutant (SO₂ and COD) concentrations by 12.2% and 3.7% relative to the control group, respectively.

INSIGHTS

■ Increased visibility of social media appeals (i.e., more “likes” and “shares”) increased the likelihood that regulators respond to emissions violations in writing by 40% and by onsite investigations by 65%.

■ The reduction in violations and emissions concentrations at firms subject to the study’s appeals was not offset by increases at firms in the control group.

In contrast, even when using essentially the same content and wording as the public appeals, private appeals caused only modest improvements in the firms’ environmental performance. Researchers noted that emissions reductions were concentrated among plants that grossly exceeded the standard prior to the experiment, rather than those just above the standard, and the violations reductions were concentrated among plants that frequently exceeded the standard prior to the experiment.

Social media visibility key to regulatory response. Researchers found that increasing the visibility of social media appeals about a violation by adding “likes” and “shares” to the Weibo post increased regulatory effort. Specifically, boosting visibility caused an increase in the probability of a regulator replying to the appeal by 40%, a doubling of the length of written replies to appeals, and the probability of an onsite investigation of a violating firm to jump by nearly 65%. Such findings suggest that increased regulatory effort following public appeals is an important source of the positive impact on firms’ environmental performance.

Public participation generates positive indirect impact. While researchers established a direct link between citizen participation and lower emission output, it is possible that indirect impacts could reduce or even completely undo any direct impacts of citizen participation. For example, if there exists a binding regulatory capacity constraint, appealing against the treatment firms might cause control firms to receive reduced regulatory oversight, leading to higher emissions from them. Alternatively, public participation in calling out violations could deter all firms from violating given a shared expectation of the costs of violating pollution standards.

Researchers found evidence of the latter: reductions among targeted plants were not undone by increased emissions from other plants, suggesting that public appeals also have a deterrent effect on untargeted firms.

Public participation meaningfully decreases pollution in China. This study provides evidence on the impacts of public pressure in environmental governance, underscoring the power of social media in facilitating citizen involvement in enforcing policies in China. Such findings suggest that social media provides strong signals of public demand for stringent enforcement, which in turn prompts regulators to recalibrate their approach to the tradeoffs involved with environmental regulation. Indeed, regulators seem to use participation to gauge the value of imposing costly regulations on firms, and particularly so when lax enforcement has the potential to generate publicity. Moreover, the failure to strictly enforce existing environmental policies is unlikely due to limited regulatory capacity, but instead largely driven by the lack of bottom-up pressure. Taken together, evidence suggests that when the public gets more involved in China’s process of environmental governance, the regulatory relationship between government and polluting firms is reshaped and that the result is increased governmental effort and lower pollution emissions by firms.

Impact of public/private appeals on firm emissions violations

