

Does the Squeaky Wheel Get More Grease? The Direct and Indirect Effects of Citizen Participation on Environmental Governance in China

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Background

Currently, 2.8 billion people worldwide face polluted air, and 1.5 billion people deal with contaminated water sources, posing severe consequences for health, productivity, and well-being. Despite standards, regulations, and initiatives to disclose emissions data, there's a common challenge in governments' inadequate enforcement of environmental standards. China, as the world's largest industrial manufacturing country and polluter, grapples with a similar issue. The Chinese Ministry of Ecology and Environment operates a vast Continuous Emissions Monitoring System (CEMS) tracking emissions from 24,620 major polluters, yet over 33% of CEMS firms violated regulations in 2019.

Why do firms still exceed pollution limits despite systematic monitoring? Even with high-quality pollution information collected and disclosed by the central government, local Environmental Protection Agency (EPA) officials require months of on-site investigations. Simultaneously, they must balance economic development and environmental protection, making it challenging to prevent large polluters from using economic leverage against local regulators.

Citizens are seen as vital in environmental governance, pressuring regulatory agencies to enhance government accountability in enforcing standards. China has established formal channels for public pollution reporting, and environmental activists use social media to urge action against polluters.

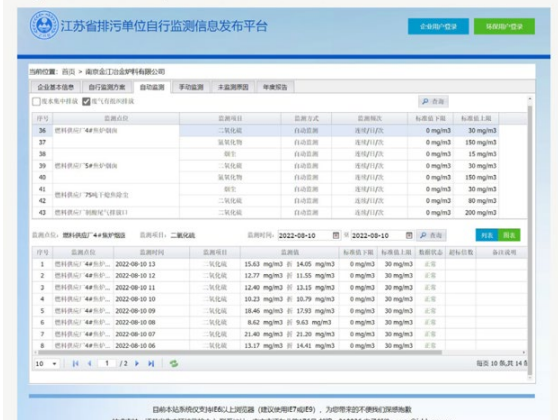
In this study, researchers explore whether citizen participation in environmental governance improves environmental quality and investigate the pathways through which this influence occurs.

Research Design

Over an eight-month on-site experiment in China, researchers observed whether bottom-up citizen

supervision affects the environment. Utilizing CEMS data to identify instances of firms exceeding emission limits, they randomly assigned firms from CEMS into control or experimental groups. When experimental group firms exceeded emission limits, volunteers filed appeals with local regulatory agencies through public (posting on Weibo) or private (such as calling government hotlines or sending text messages to government officials or firms) channels and requested corresponding actions. During the appeal process, researchers provided appeal templates to volunteers

Figure 1 · Description of a Violation



Note: This figure shows an example of a firm's real-time monitoring data from Jiangsu province. It includes information on the firm name, the monitor point, the monitor item, the monitor method, the monitor frequency, the lower and upper limits, and the monitor value. Additionally, it includes a status indication of whether the value is compliant or violated.

Figure 2 · Appealing to Regulator on Weibo



Note: A Weibo appeal, reading "The online monitoring platform shows that the average daily concentration of sulfur dioxide in Yangzi Petrochemical Co., Ltd. of Sinopec in Jiangbei New District exceeded the standard on May 12. For details, see the screenshot. @Nanjing ecological environment please pay attention and explain."

to ensure consistency in content and wording across different channels.

Key Findings

First, public appeals made on social media significantly reduced subsequent violations and emissions by firms.

Over the eight-month experiment, the treatment group with public appeals reduced violations by 60%, with air (SO₂ emissions) and water (COD emissions) decreasing by 12.2% and 3.7%, respectively, compared to the control group. Conversely, using essentially the same content and wording, private appeals only resulted in around a 25% reduction in violations in the treatment group compared to the control group. The most significant reductions in violations and emissions occurred among firms that had frequently violated and significantly exceeded the standards before the experiment.

Second, the effectiveness of public appeals arises because they shift the often competing goals of local regulators away from facilitating economic growth and toward avoiding pollution-induced public unrest. By randomly increasing the visibility of social media appeals about a violation, researchers found that regulators became significantly more responsive. The probability of replying to appeals increased by 40%, the length of written replies doubled, and the probability of an on-site investigation jumped by nearly 65%.

Third, an increase in public 1appeals did not result in higher pollution from non-appealed firms.

Researchers also explored the indirect effects of public participation in environmental governance by randomly varying the proportion of firms subjected to citizen appeals in each prefecture. They observed the impact on the environmental performance of non-appealed firms when a larger share of their prefecture peers received appeals. The results showed that expanding the number of firms in the experimental group did not raise violation rates among control group firms, suggesting that public demands do not generate significant 'crowding-out effects' on local regulatory efforts.

Figure 3 • Effects of Public and Private Appeals

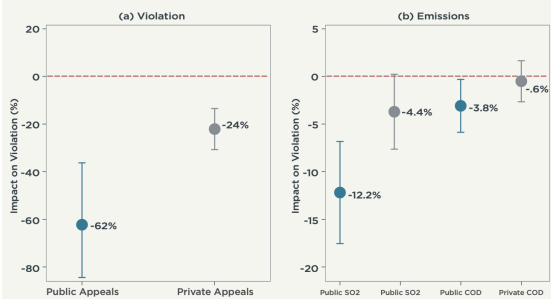
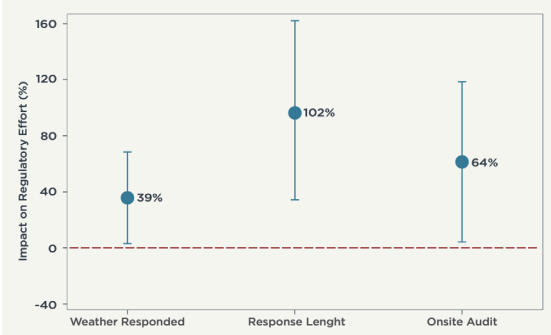


Figure 4 • Effects of Social Media Publicity



Policy Implications

This study demonstrates that public participation can significantly reduce pollution. Social media serves as an effective tool to encourage citizen engagement in policy implementation and governance, holding regulatory agencies more accountable.

The existing literature suggests that the Chinese government is willing to promote corporate development and emphasizes maintaining regional stability when dealing with citizens. This study combines these two directions, showing that when the public becomes more involved in environmental governance, the regulatory relationship between the government and polluting firms is reshaped, resulting in increased government efforts and reduced pollution emissions by firms. Understanding these interactions between government, firms, and citizens in a synthesized framework contributes to a deeper understanding of China's local governance system.

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