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## HOW CAN DIFFERENTIATED INFORMAL ENVIRONMENTAL REGULATIONS CONTRIBUTE TO POLLUTION REDUCTION IN CHINA

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### Abstract

Informal environmental regulation (IER) has provided grassroots impetus for the achievement of the “double carbon” target, and its bottom-up “voluntary nature” provides a new way to compensate for the defects of formal environmental regulations (ER). Nevertheless, empirical research in this territory is scarce and controversial, so this research strives to illuminate the depollution effects and mechanism of IER. Due to the uneven economic development of the various regions in China, probable inflection points and spillover effect of IER are considered. After a theoretical derivation, we further verify the hypothesis through a panel threshold model and a spatial Durbin model. The results show that: The results show that: ER and IER interact positively to promote emission reduction. As GDP per capita rises, the pollution reduction effect of netizens’ environmental opinion becomes progressively stronger; Effectiveness of residents’ environmental petitions goes from strong to weak; Awareness-raising activities hosted by environmental non-government organizations(ENGOS) can significantly curb pollution regardless of economy. Spatially, the participation from both netizens and ENGOS has positive spatial spillover depollution effects. However, petitions from residents only have local effects. Finally, based on the mechanisms and characteristics of different participation patterns, we make tailored policy recommendations.

**Keywords:** informal environmental regulation, public environmental participation, spatial spillover effect, threshold effect

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