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A TRIPARTITE EVOLUTIONARY GAME MODEL FOR HAZE POLLUTION CONTROL IN CHINA

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Abstract

Haze pollution in China involves multiple stakeholders with conflicting interests. This study develops a tripartite evolutionary game model to analyze the strategic interactions between local governments, enterprises, and the public in haze pollution control. The model considers bounded rationality and incorporates costs, incentives, and punishments faced by each player. Numerical simulations reveal evolutionary stable strategies under different scenarios. With incentives and punishments aligned to encourage participation, the model shows convergence to a positive equilibrium where all three parties cooperate to control haze. The findings imply that effective tripartite governance of haze pollution requires policy mechanisms that motivate joint participation.

Key words: evolutionary game, haze pollution control, tripartite subject

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