

Conforming and reactive behavior in the public goods game with institutional incentives to cooperate

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Institutional incentives in a public goods game (PGG) can be used to model mechanisms to promote cooperation among stakeholders on environmental issues. Here, we report on theoretical and empirical results of a repeated four-player PGG model where an outside agency rewards one player and/or punishes one player between rounds based on their contribution to the public good compared to that of the other three group members. Our experimental outcomes show that all the incentive schemes are effective at promoting cooperation compared to the Control experiment with no incentives, that institutional punishment (IP) is more effective than reward (IR) and that a combination of reward and punishment (IRP) is most effective. We will also show that these outcomes are consistent with the rational behavior of individuals predicted by Nash equilibrium theory applied to these games, although the outcomes do not match the theoretical results completely. We argue that the difference between theory and experiment is explained through a combination of conforming behavior (i.e. altering one's contribution in the direction of the group average) and reactive behavior by those who are chosen for the incentive.

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