Coordination and free-riding problems in blood donations

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Abstract

This article theoretically and experimentally examines the twin problems of free-riding and coordination failure faced by blood banks, by investigating the effects of information provision on the efficiency of blood donation. We augment a standard linear public goods game, incorporating the following features of blood donation: multiplicity of public goods (to reflect intertemporal coordination issues), current and upcoming upper bound demands (to incorporate the perishable nature of blood and the embargo period of consecutive donations), and semi-binary choices (to account for individual options to withhold donations or make donations and when). We analyze whether a provision of deterministic information on the potential blood demand (*full information*) would improve the efficiency of blood donation when compared to the provision of probabilistic information (*partial information*). The theory predicts that if each individual maximizes the payoff-sum of all players, then the *full information* provision would achieve donation efficiency in equilibrium. The results of laboratory experiment show that the *full information* provision does not improve the efficiency of donation, on an average. We find that *full information* improves intertemporal coordination, but it worsens the free-riding problem. Although information helps individuals to direct donations in response to the demand, it drives individuals to withhold donations to avoid potential wastage against the risk of donation over the upper bound. When the predicted total demand is relatively small, that is, when strategic uncertainty about others donation matters for achieving efficiency, the provision of information about intertemporal demand in upper bounds tends to compromise efficiency because the "donation withholding" effect becomes dominant.

JEL classification: C72, C91, C92, H41.
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