

Coordination and freeriding problems in blood donations

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Abstract

This article theoretically and experimentally analyzes the effects of information provision in overcoming the intertemporal coordination problem that exists in blood donations. We model the situation as a multiple public goods game in which each period corresponds to a different public good—donated blood—and in which each period has a unique threshold representing the demand for the blood product in that period. The donation beyond the demand has a marginal return of zero, reflecting the fact that blood products are perishable so the excess supply in each period is gone expired. We compare two regimes that differ in the information that blood donors have about the demand for blood. In one regime, every player knows the exact demand in all periods (*Full information*), and in the other regime, every player knows only the probability distribution of the demand in each period (*Partial information*). Theoretically, if each player maximizes her own payoff, she makes no donation, aiming to free-ride on the donations of the other players. If all players behave in this way, information about the demand has no effect on the equilibrium outcome. If, on the other hand, each player maximizes the payoff-sum of all players, then *Full information* results in a more efficient equilibrium than *Partial information*. Thus, we hypothesize that if at least some people are efficiency-minded, then providing potential donors with demand information about current and future needs will increase efficiency.

The results of our laboratory experiment do not support the hypothesis that *Full information* improves efficiency. What we find is that *Full information* indeed improves intertemporal coordination but it worsens the free-riding problem, which more than offsets the improved coordination. On the one hand, the demand information directs more contributions to the public good with relatively higher demand. On the other hand, demand information tends to depress subject's donations. The latter effect can be explained by strategic uncertainty which makes subjects withhold contributions for fear of making wasteful contributions.

JEL classification: C72, C91, C92, H41.

Keywords: Blood donation, Free riding, Coordination, Public goods, Laboratory experiment, Information

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