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Behavioral mechanism design for transportation services

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Abstract:

Mechanism design for transportation services is a promising approach for implementing good transportation services such as car-sharing, mobility on demand, autonomous vehicles. However, there are a bunch of problems to be solved. The most difficult point of the mechanism design is preference elicitation of each user. For example, it is not easy for users to bid their preferable slot of transportation service in auction mechanism. As a result, the auction mechanism may not work well. In this study, we study the effects of preference elicitation mechanisms on the efficiency of auctions by laboratory experiments approach. Transportation and reservation service providers need to know the potential user demand. However, the preference-elicitation method of the service can impact the elicitation results. we experimentally analyze the effects of preference-elicitation mechanisms on users' eliciting behaviors and on the efficiency of auction results. In addition, we show that our preference prediction mechanism can reduce users' bidding cost and improve the efficiency of auction results. Finally, we examine users' behaviors in laboratory experiments to estimate their preference elicitation costs.

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