Multi-dimensional procurement auction under uncertain and asymmetric information

This article addresses two important issues in public procurement: ex ante uncertainty about the participating agents’ qualities and costs and their strategic behaviour. We present a novel multi-dimensional auction that incentivises agents to make a partial inquiry into the procured task and to honestly report quality-cost probabilistic estimates based on which the principal can choose the agent that offers the best value for money. The mechanism extends second score auction design to settings where the quality is uncertain and it provides incentives to both collect information and deliver desired qualities.

Publication information

Journal: European Journal of Operational Research
Volume: 258
Issue number: 3
ISSN (Print): 0377-2217
Ratings:
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 4.08 SJR 2.437 SNIP 2.442
Web of Science (2017): Indexed yes
Original language: English
Keywords: Auctions/bidding, Information asymmetry, Uncertainty modelling, Quality and cost uncertainty, Strictly proper scoring rules

Electronic versions:
ap_pb_asymmetry_uncertainty_preproduction.pdf
DOI:
10.1016/j.ejor.2016.09.060
Source: PublicationPreSubmission
Source ID: 127313300
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review