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Optimal Contest Design under Reverse-Lottery Technology*

Jingfeng Lu† Bo Shen‡ Zhewei Wang§

June 2017

Abstract

In this paper, we study effort-maximizing contest design under the "reverse" nested lottery contest model of Fu, Lu and Wang (2014) – which is the "mirror image" of the conventional nested lottery contest of Clark and Riis (1996). We show that under the reverse-lottery technology, a single-stage winner-take-all grand contest dominates all other feasible designs when the contest is sufficiently noisy. This result is in dramatic contrast to the conventional wisdom on the optimality of multistage elimination contests that is grounded under the conventional nested lottery contest technology in the literature. In the framework of a noisy-performance ranking model, the conventional and reverse models differ only in the noise on players' performance. Our study therefore reveals the important role that the noise term plays in modeling imperfectly discriminatory contests.

JEL Nos: C72; D72; D74.

Keywords: Reverse Nested Lottery Contest; Multistage Contest; Effort Maximization; Optimal Contest Design.

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