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How many winners are good to have? On tournaments with sabotage

Christine Harbring [a,*], Bernd Irlenbusch [b,1]

[a] *University of Cologne, Department of Personnel Economics and Human Resource Management, Herbert-Lewin-Str. 2, D-50931 Köln, Germany*
[b] *London School of Economics and Political Science, Department of Management, Houghton Street, WC2A 2AE London, UK*

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Abstract

From an employer's perspective, a tournament should induce agents to exert productive activities but refrain from destructive ones. We experimentally test the predictive power of a tournament model which suggests that (within a reasonable framework) productive and destructive activities are influenced neither by the number of agents taking part in the tournament nor by the fraction of the winner prizes. Our results clearly confirm that sabotage in tournaments indeed occurs. While tournament size has virtually no effect on behavior, a balanced fraction of winner and loser prizes appears to enhance productive activities.

JEL classification: D23; J33; L23; C72

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1. Introduction

Incentive schemes that are based on a relative evaluation of agents are analyzed by economists within the framework of tournament theory (for an overview see, e.g. Gibbons, 1998; Lazear, 1999; Prendergast, 1999). While such reward mechanisms may yield many advantages, for example, mitigation of hidden action and hidden information problems (see, e.g. Malcolmson, 1984,

* Corresponding author. Tel.: +49 221 470 7955; fax: +49 221 470 5078.
E-mail addresses: christine.harbring@uni-koeln.de (C. Harbring), b.irlenbusch@lse.ac.uk (B. Irlenbusch).
[1] Tel.: +44 20 7955 7840; fax: +44 20 7955 6887.

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1986), severe drawbacks also have been identified. The most prominent are collusion and sabotage between agents. While economists usually agree that cooperation between members of an organization is desirable for the institution as a whole, in tournaments cooperation among agents is called "collusion" and regarded as a major danger to pay based on relative performance. Furthermore, if agents do not cooperate but intensely compete against each other, sabotage between agents may arise. Although competition is the intended driving force of tournaments, competition at the expense of the employer in the form of destructive activities is, of course, highly undesirable. The problem of sabotage results from the fact that agents can choose between at least two dimensions of activities in order to improve their relative position; they can intensify their productive effort and deteriorate their competitors' performance by means of destructive activities.[2] Since there are several degrees of freedom regarding the implementation of relative reward schemes from the employer's point of view the important question arises of whether and how different tournament designs may affect the level of productive and destructive activities among employees.

In recent times, interest in the potential advantages and drawbacks of competitive incentive schemes within organizations have dramatically increased in the course of the controversial debate on *forced rankings*.[3] If employees are rated according to a *forced ranking* they compete for a good evaluation as the absolute number of good ratings is fixed ex ante via a forced distribution of performance evaluations. The relative performance evaluation is often directly linked to a bonus pay system, the decision on promotion of high performers, or advising low performers to leave the company. Particularly, the latter management practice has been heavily criticized, as it is feared that cooperation between employees within an organization is put at risk, or even worse, that agents exert destructive activities. Another pervasive example for a tournament among individuals whose cooperation seems essential for the company's business performance is the competition for top leadership jobs. In organizations a sabotage activity can take any form of blocking cooperation, such as actively withholding viable information, passing on false information or damaging work tools used by others.

In this study, we experimentally test the predictive power of an economic model that suggests that, within certain tournament design limits, productive and destructive activities are influenced neither by the size of the tournament nor by the fraction of the winner prizes. We find that although it severely harms the employer, sabotage nevertheless happens where the opportunity for this activity exists. Furthermore, as predicted by the model, the level of effort and sabotage is not affected by the size of the tournament. However, contrary to the predictions, activity levels are influenced by the share of winners. In fact, the tournament structure that elicits the highest levels of productivity also tends to lead to higher-than-predicted levels of sabotage. We vary two parameters of tournament design: the number of agents and the number of winner prizes. We analyze repeated tournaments with two, four and eight agents. The tournament model we aim to investigate is close to the classical model of Lazear (1989).

[2] In reality, sabotage is pervasive whenever relative performance pay is encountered. For a prominent example from sports recall the Tonya Harding-Nancy Kerrigan case where Harding's rival Kerrigan was injured in an attack hatched by Harding's ex-husband to keep Kerrigan off the Olympic ice skating team in 1994.

[3] Forced rankings are usually implemented to force evaluating managers to differentiate their ratings; that is to use the whole range of grades (see, e.g., Murphy, 1992). According to estimates, a quarter of the Fortune 500 companies (e.g., General Electric, Cisco, Intel, Hewlett Packard, etc.) link part of individual benefits to a relative performance evaluation (see Boyle, 2001). Recently, a statement made by Infineon's former CEO Schumacher was extensively discussed in Germany; Schumacher announced that the 5% of low performers within Infineon had to leave the company. This is why forced rankings are also known as "rank and yank". For a critical discussion on forced ranking systems, see Pfeffer and Sutton (1999).