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研究課題名(和文) How Does Goal Setting Incentivize Workers in the Tournament Reward Scheme with Sabotage? Theory and Evidence

研究課題名(英文) How Does Goal Setting Incentivize Workers in the Tournament Reward Scheme with Sabotage? Theory and Evidence

研究代表者

Tang Cheng-Tao (Tang, Cheng-Tao)

国際大学・国際関係学研究科・講師(移行)

研究者番号：00799330

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研究成果の概要(和文)：このペーパーでは、エージェントが2つの活動を行うトーナメント報酬スキームにおける目標設定の効果を検査します：努力と妨害。私たちの理論モデルは、トーナメントのゴール設定がポジティブな役割を果たすことができると予測しています：努力を増やし、妨害行為を減らします。理論と一致して、実験室実験の結果は、トーナメントでの目標設定のプラスの効果を確認します。ただし、理論とは逆に、金銭的インセンティブが増加すると、目標設定の効果が減少することがわかります。高い目標が実行されると、金銭的インセンティブが機能しなくなります。全体として、高い目標は、より高い経済的インセンティブよりもパフォーマンスを向上させます。

研究成果の学術的意義や社会的意義

The theoretical analyses in this project help to explain the commonly observed coexistence of goal setting and tournament schemes. The empirical results provides empirical evidence that, implementing goal setting in the tournament can be effective if organizations suffer from sabotage behavior.

研究成果の概要(英文)：This paper investigates the effects of goal setting in the tournament-like reward scheme where agents have two-dimension activities: productive effort and sabotage activities. Our theoretical model predicts that goal setting (within an appropriate range) in tournament can play a positive role: both increase productive effort and decrease sabotage activities. Consistent with theory, the results from our laboratory experiment confirm the positive effects of goal setting in tournament. However, contrary to the theory, we find the effect of goal setting diminishes as the financial incentives (bonus) increases. Financial incentives become dysfunctional when high goals are implemented. Overall, high goals increase performances more than higher financial incentives.

研究分野：Organizational Economics

キーワード：Tournament Goal setting Sabotage

1. 研究開始当初の背景

In modern organizations, tournament-like reward schemes where workers compete for given prizes based on their relative rather than absolute performance, are recognized as an essential incentive device to motivate effort. In real-world compensation practices, what is commonly observed for tournament scheme is to implement it jointly with performance goal or target system (hereafter referred to as goal setting). For example, a salesperson has to meet a pre-specified sale target so that he can receive, depending on his ranking over the target, variable bonus payment. The existing explanation for the usage of goal setting in tournament focuses on its psychological role in response to give-up problem provided that contestants' abilities are heterogeneous. Because a worker with relatively low ability may lose motivation due to his lower winning chance, and thus exerts zero effort. That is, goal setting in tournament is not to provide incentive for workers. If anything, a pre-specified goal in tournament decreases the winning chance and, in turn, reduces workers' incentive to exert effort. Therefore, this strand of literature is considered as trading off psychological need in maintaining "good horse race" with workers' incentives in exerting effort.

2. 研究の目的

One aim of this project is to provide an alternative explanation for the coexistence of goal setting and tournament schemes that is purely based on incentive ground. As it will be clear in the literature review (please refer to our working paper for more details; URL of the working paper is at the end of 研究の方法 section), the lack of considering sabotage is an important missing piece in the prior research on goal setting in tournament. By applying experimental design in laboratory, this project also aims to empirically explore how goal setting can play a positive function in the tournament with sabotage.

3. 研究の方法

In the theoretical part, investigate a simple model with two workers in the same division of an organization in which workers compete for a monetary reward (M) based on their outputs. A worker i 's output is influenced by two kinds of activities: productive effort ($e_i \geq 0$) and sabotage ($s_i \geq 0$), where productive effort can increase the outputs of the workers, and the sabotage does not increase workers' outputs but is used to decrease their opponents' outputs (Lazear 1989). As for the empirical part, we implemented a $2 * 3$ factor design controlled experiments for six treatments: No Goal and Low Prize (NGLP), Low Goal and Low Prize (LGLP), High Goal and Low Prize (HGLP), No Goal and High Prize (NGHP), Low Goal and High Prize (LGHP), High Goal and High Prize (HGHP). Model parameters will be chosen such that the equilibrium choices are interior and the participation condition is met. The experiment sessions took place at the BizLab of the University of New South Wales. Using ORSEE (Greiner, 2015), we recruited 340 participants in total (56, 60 and 54 for No goal, low goal and high goal treatments when the winning prize is low; and 54, 56 and 60 for No goal, low goal and high goal treatments when the winning prize is high). No participant participated in more than one session. Throughout the sessions, no communication between participants were allowed and all choices were transmitted through computer terminals in z-Tree (Fischbacher, 2007). The experiment lasted around 80 minutes on average, and the average earnings were around \$27.3 per person (StdDev \$8.6). We implemented a neutral framing for this experiment, because value-laden terms

affects sabotage behaviour (Harbring and Irlenbusch, 2011) Productive effort and sabotage activity are framed as decision A and B. In each session, participants were randomly assigned to a computer terminal and given the instructions. At the beginning of each session, participants read and signed their consent forms. Then the experimenter read aloud instructions to make sure it was common knowledge that everyone would face the same decision scenarios. The experiment started immediately when all participants in the same session correctly answered comprehension questions. Participants were asked to make costly decisions (of both productive effort and sabotage activity) over 30 rounds. In each round, they were randomly matched to a group of two participants and the computer randomly drew a number for each participant.

Please also refer to our working paper for more details as downloaded in the weblink below: https://www.dropbox.com/s/knewzi8enlcadgu/Tang_Zhang_2020.pdf?dl=0

4. 研究成果

In this study, we firstly set up a theoretical model to examine the effect of goal setting in tournament. On the one hand, setting up an “external” goal reduce employees’ winning probability. On the other hand, it increases performance because employee need to substitute productive effort for sabotage to achieve the goal and hence win the prize. We test the theoretical predictions in the laboratory experiment. we find that implementation of high goals is an efficient tool to increase organisation performance. High financial incentives (bonus) increase productive effort at the cost of more sabotage, when goals are not implemented. It also brings dysfunctional consequences when high goals are implemented. Although employee reduce sabotage behaviour, they also exert less productive effort when high financial incentives are implemented in the high goal setting tournaments. That is, the theoretical predictions are partially supported by experiment results. The potential explanation is that participants tend to give up in the effort choice, or there may exist trade-off between external incentive (i.e. financial incentive) and intrinsic incentive (i.e. other-regarding). It is thus important to explore the potential mechanisms in the future research.

5 . 主な発表論文等

〔雑誌論文〕 計0件

〔学会発表〕 計0件

〔図書〕 計0件

〔産業財産権〕

〔その他〕

The working paper is expected to presented at the Taiwan Economic Research workshop 2020.

6 . 研究組織

	氏名 (ローマ字氏名) (研究者番号)	所属研究機関・部局・職 (機関番号)	備考
研究協力者	Z H A N G ・ L E (Zhang, Le)	Macquarie Graduate School of Management・Senior Lecture	