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ZEW policy brief

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Incentives and Creativity

Essential Issues

Research Question and Relevance

In knowledge-intensive economies, ideas and innovation are key drivers of a company's competitiveness and success. In such a climate a company must strategise methods designed to incentivize the generation of new ideas and build a culture that rewards the production of knowledge. Many scholars have suggested that motivating creative performance is fundamentally different from motivating performance in simple and routine tasks. Nevertheless, economic studies investigated the effect of financial incentives on employees' performance mainly by observing employees performing simple and routine tasks while effects on creative performance have received little scientific attention so far. For routine tasks, a myriad of studies confirm that financial incentives have a positive effect on performance because employees increase their effort insofar as their potential benefit from additional output exceeds the cost of that effort. Moreover, a substantial number of studies document that employees' performance is not only triggered by rewards contingent on performance but employees do also reciprocate financial rewards that are allocated independently of individual performance, such as wage premia, with an increase in their performance. However, it remains unclear to which extent previous results can be transferred to creative tasks. The present research covers two empirical studies that investigate whether financial rewards such as performance independent bonuses and performance rewards foster creativity and idea generation among employees and to what extent the effect of incentives differs depending on the type of reward that is offered.

Key Messages

The first study, a laboratory-based experiment, shows that competition for a financial reward significantly increases performance in both a routine and a creative task. By contrast, a wage premium not contingent on performance will result in an increase in performance that is driven by reciprocity of experimental subjects only when the task is a simple, routine one, while performance of a creative task is otherwise unaffected. Accordingly, a positive reciprocal performance effect of performance non-contingent wage premia appears to be highly dependent on the nature of the task. The second study, an empirical analysis of personnel data from a large software company, looks at the impact of an incentive scheme designed to reward employees for coming up with novel ideas intended to add value for the customer. The findings suggest that the rewards have the intended consequence and increase employee participation in idea generation as well as improve the quality of the ideas submitted.

Key Messages

Performance Rewards Encourage Creativity

We have conducted two studies addressing the question as to whether financial rewards foster employees' creativity and the generation of new ideas.
In the first study, we compare the efficiency of two financial reward types on performance in a creative and a routine task in a laboratory experiment. A controlled experiment allows us to hold constant certain factors that might otherwise influence the extent of the difference in effect between tasks and rewards. Our results show that performance-contingent rewards for good relative performance, in this case tournament prizes, significantly increase performance in both routine and creative tasks. Performance non-contingent rewards, such as a wage premium, also positively affected performance to a significant degree in the simple task, as previous studies have also found. The results of the present study, however, indicate that reciprocal responses to a performance non-contingent wage premium cannot be discerned when the task is a creative one. Accordingly, the effect of wage premia on work motivation seems to depend on the type of task. Given that the creative task involves a significantly higher level of intrinsic motivation, we suggest that intrinsic motivation is an important determinant and must therefore be taken into account when designing incentive schemes. Our results suggest that performance-contingent rewards like those offered in a financial tournament can be a cost-effective tool to incentivize innovation whereas performance non-contingent rewards do not pay off for the company.
Our second study complements the experimental analysis by examining personnel data from a large software company that introduced an incentive scheme for an employee idea platform. The latter targeted at providing process and product improvement ideas to customers. The results show that the creation of novel ideas can also be affected by rewards substantially in the field. The implementation of the reward scheme increased not only the number of employees participating in the process of generating ideas but it also improved the quality of the ideas submitted.

Research Question and Relevance

Impact of Rewards on Employee Performance

Most studies that set out to examine the impact of incentives on motivation and productivity confirm what standard economic theory predicts: financial incentives have a positive effect on performance because employees increase their effort insofar as their potential benefit from additional output exceeds the cost of that effort. This is demonstrated by tournament schemes, for instance, which reward employees on the basis of their relative performance. However, explicit financial incentives are not the only way of triggering employees' performance. The established literature on "gift-exchanges" documents that employees will reciprocate financial rewards that are allocated independently of individual performance, such as wage premia, with an increase in their performance. However, it remains unclear to which extent previous results can be transferred to different types of work tasks as most studies have been conducted with simple and routine tasks where output is easily observable.

Different Motivation for Routine and Creative Tasks

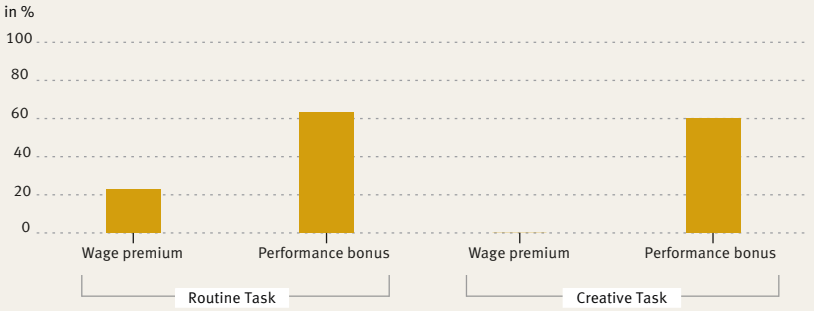
Developed countries progressively transform into knowledge-based economies, in which many jobs require non-routine problem solving skills, as the market demands continuous improvement of companies' products and services. Successful innovation is the result of a persistent "trial and error" process, which requires employees' creative thinking as well as high work motivation. Many scholars and practitioners in the field have suggested that motivating creative performance is fundamentally different from motivating routine performance because it is considered to be more dependent on intrinsic motivation, more cognitively demanding, riskier, and of less certain value than routine performance. Accordingly, it is an empirical question whether and to what extent the effect of rewards on productivity might differ when dealing with simple, routine tasks or with creative ones.

Results in Detail

A Laboratory Experiment (Study 1)

In the first study, we implemented a laboratory experiment where participants could earn a substantial amount of money. At the beginning of the experiment, participants were assigned to act in the role of an employer while other participants were assigned the role of employees. Each employer was then randomly assigned to a group of four employees. In the course of the experiment, participants were asked to perform either a simple or a creative task, in three consecutive "rounds". Both employers and employees received a fixed wage in each round, no matter the type of task. Beyond this, employers received a variable pay component the amount of which was determined based on the sum performance of their four employees. This experimental design allowed us to investigate reciprocal responses to treatment interventions that more closely simulate real life conditions. Depending on the experimental treatment, employers had the option of implementing additional rewards in the second "round" of work. Depending on the treatment group, this reward could be either a performance non-contingent wage premium for all employees or a performance-contingent tournament prize. In order to evaluate the effects of different incentive schemes on performance, we compared the performance increase in the control group with the increase in each respective treatment group in order to control for baseline differences as well as for a temporal learning curve. Our experimental design also allowed us to compare ex-ante incentive as well as ex-post effects of the rewards to a second control group which received only performance feedback without any monetary reward. In this way we were able to distinguish any ex-post effects of winning or losing a tournament from the mere feedback effect.

Differences in Performance between Treatment Groups and the Control Group by Task



The bars show the differences in performance (in %) between treatment groups and the respective control group. For instance, the announcement of a performance bonus in a creative task yields a performance which is 60 % larger than the performance in a control group where no reward is announced.
Source: own presentation

The results indicate that a performance-contingent reward leads to a substantial increase in performance in both types of tasks within a tournament scheme. By contrast, treatment groups who received the performance non-contingent wage premium evinced a surprising asymmetry: while participants performing a routine task reacted reciprocally, no such comparable effect was found for the creative task. Recent behavioural studies suggest that individuals react positively to benevolent actions, such as performance independent wage premia, with an increase in performance. However, when it comes to creative tasks, we do not find any such an effect. Psychological research may offer theories about the mechanisms at work: motivation may be undermined when an intrinsically motivated task (such as a creative work) is rewarded per se, without that reward being linked to actual performance. Making the reward for creative work contingent on outstanding performance, by contrast, strengthens perceived self-determination and, hence, fosters intrinsic motivation. Our laboratory study provides causal evidence for this asymmetry.

A Firm-data Based Analysis on Rewards' Effectiveness for Idea Generation (Study 2)

In our second study we collaborated with a large software company to analyse the effect of a reward scheme aimed at increasing both the number as well as the quality of ideas submitted to the company's internal idea platform. The company randomised several of their key accounts into either a reward group or a control group. The new reward scheme was only introduced to the former. In order to study the effects of its implementation, we compared the submission of ideas between accounts acting under and those acting without the new reward scheme, and at the same time we analysed the development of idea generation over time.

This latter detail is important in that it has allowed us to take into account initial differences in performance between accounts in the reward and the control groups. Moreover, our approach controls for any temporal trends that might arise in the long-term. We looked at a variety of dependent variables such as the number of ideas submitted, the number of employees participating in the ideation process, the number of ideas per participating employee, and the quality of the ideas submitted. The results of our second study suggest that employees do indeed respond to the incentives offered. While the overall number of ideas remains the same, the participant base is broader under a reward system, i.e. a larger number of employees participate in the ideation process. Additionally, the quality of submitted ideas as measured as a percentage of submitted ideas that pass the internal review process and are eventually implemented is higher for accounts being offered rewards than it is for those who are not.

Project Profile

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Publications

Bradler, Christiane, Susanne Neckermann and Arne Jonas Warnke (2013), Rewards and performance: A comparison across creative and routine tasks, ZEW Discussion Paper Series (forthcoming).

Gibbs, Michael, Susanne Neckermann and Christoph Siemroth (2013), Can new ideas be bought? Evidence from a field experiment in innovation, ZEW Discussion Paper Series (forthcoming).

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