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working with pay pals creating incentive pay programs

RESEARCH BY **IMRAN RASUL**

BY JEFF STEELE

Recent research suggests that productivity is substantially higher when employees' monetary incentives are based solely on individual effort. One of the most common incentive programs in American business bases an employee's pay on individual performance as compared to the performance of coworkers. It is believed that this "relative" incentive system is as effective as "absolute" or "piece rate" incentive systems, in which employees are rewarded solely on how much they produce.

However, will employees worry that by working harder under a relative incentive plan, they will make their coworkers look worse by comparison? Will they worry that their hard work will result in their coworkers receiving smaller paychecks? Will they be concerned about how those events will impact their friendships with coworkers?

Standard management theory and practice would suggest that the answer to all these questions is no.



Dan Dry

Imran Rasul joined the faculty in 2002. His research focuses on development economics, household economics, and applied microeconomics.

In the study “Relative and Absolute Incentives: Evidence on Worker Productivity,” assistant professor of economics **Imran Rasul**, along with Oriana Bandiera of the London School of Economics and Political Science and Iwan Barankay of the University of Essex, examined the productivity of fruit pickers at a farm in the United Kingdom that utilized both types of incentive plans over the course of one summer. Productivity in this case was measured by kilograms of fruit picked per hour.

During the 2002 summer fruit-picking season, the farm management used the relative incentive plan to pay workers, whereby workers’ daily pay depended on the ratio of individual productivity to average productivity among all coworkers in a field on that day. At the midpoint in the 108-day season, the farm switched to a piece-rate plan, whereby workers were paid solely based on how much fruit they picked, and their pay did not depend on the performance of others.

Farm workers were hired from Eastern and central Europe. Workers lived and ate meals together on the farm during the summer work season. All worked at least 10 days under each incentive program. The authors measured the productivity of 142 workers in 22 fields, using personnel records along with questionnaires that asked workers to identify their friends among the group.



The authors found that the change in incentive schemes had a significant and permanent impact on productivity. For the average worker, productivity increased by 50 percent when the management switched from using relative incentives to piece rates. On average, each worker picked 23.2 more kilograms of fruit per day under the piece rate system than they did under the relative plan.

The authors examined whether these gains could be attributed to factors other than the change in incentive plans. Increases could not be explained by the life cycles of the fields where the fruit was picked, nor were productivity gains attributable to longer field experience.

Furthermore, factors such as weather conditions or the ratio of supervisors to workers were not responsible for the hikes in productivity in the second 54-day period. The increase in productivity also did not come at the expense of a lower quality of fruit picking.

Mindful of Other Workers

The fact that productivity was so much lower under relative incentives than piece rates suggests that workers take into consideration the payoffs fellow workers receive. Under relative incentives, workers are aware that toiling more conscientiously will make coworkers look bad by comparison, and they will reduce their effort as a result. Rasul says this behavior may be a result of altruism or possible collusion among workers.

“Altruism in this example refers to an individual genuinely caring about other workers,” notes Rasul. “Another possibility is that a worker might fear being socially ostracized as a result of his or her hard work. That scenario would be an example of collusion.”

The setting the authors studied had features that facilitated collusion and promoted altruism. Workers toiled in close proximity daily, as well as living together and socializing outside the workplace. Many attended the same universities in their home countries.

To determine how social connections impacted productivity, the authors next examined whether workers were less productive in the field while working alongside friends than they were while working with other coworkers. Each worker was asked to name five friends on the farm. The authors then studied the performance of workers while with friends and nonfriends.

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—Imran Rasul

The authors found that having more friends around while working reduced productivity under the relative incentive program. For instance, if a worker was moved from a group with none of his friends to one with all five of his named friends, his productivity fell by an average of 21 percent.

In contrast, the number of friends workers toiled alongside had no impact on their productivity under the piece-rate plan.

“The things that the workers care about go beyond their own pay,” says Rasul. “The workers also care about the pay of other people.”

Rasul adds, “We find that people do put some weight on the feelings of other workers and put more weight on the feelings of their friends than their nonfriends.”

A Better Incentive Plan

Given that workers take into consideration how their actions impact coworkers, piece rates may not be the optimal incentive system, though this system does increase individual productivity. A better plan might be one in which the extra effort of workers benefits not just themselves, as with piece rates, nor reduce the payoff to others, as with relative plans. The authors suggest a system in which the team as a whole reaps greater benefits as each worker exerts more effort.

“A team-based scheme may work better because individual pay then depends on how well everyone on the team performs. Team-based pay is one way management can use the social relations between workers to raise individual productivity,” says Rasul.

Social relationships that lead to lower productivity in relative incentive programs can be turned around and utilized

to yield the opposite effect. The workers who used to put in less effort to avoid alienating coworkers under a relative incentive scheme may put in more effort to avoid antagonizing coworkers under a team-based program.

In examining that possibility, Rasul, Bandiera, and Barankay found that average effort would further increase by 30 percent over effort under piece rates under a plan that doled out larg-

er individual paychecks with increases in the productivity of the group as a whole.

“There is a clear relationship between how socially connected people are in the work force and how you should pay them,” Rasul concludes. “As a manager, this can either work to your advantage or disadvantage, depending on how you decide to pay your workers.”

Real World Lessons

The authors’ findings have additional ramifications for corporate settings. For example, organizing social outings away from the workplace that encourage employees to get to know one another better may be highly beneficial to a company under a team-based incentive plan. Conversely, it might be decidedly detrimental under a relative incentive plan.

In this study, Rasul and his colleagues were unable to determine whether unwillingness to work hard under the relative incentive system was the result of altruism or collusion among workers. In subsequent research, the authors will explore which of the two motives has the greatest impact on workers’ behavior. They will also investigate whether the incentive of a productivity-based bonus motivates supervisors to push their friends or other coworkers to expend greater effort. ■