

Working for Nothing? The Effect of Non-material Awards on Employee Performance*

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Abstract

We present the results of an empirical study assessing the impact of non-material awards on work performance. Subjects in our field experiment were hired by an international non-governmental organization (NGO) to work on a two-hour job. In addition to a fixed wage, subjects in the award treatment were informed that the two subjects who showed the greatest commitment and produced the best output would receive an award from the NGO. The award consisted of a personalized congratulatory card that was signed by the president of the NGO. The award was materially worthless, which ensures that any behavioral effect is driven by non-material aspects of the award, such as status and recognition. Our results show that subjects in the award group perform significantly better than subjects in the control group, where no award was given. Hence, our results offer strong evidence for the important role of awards in firms and organizations. In fact, because subjects worked together only for two hours and for an unfamiliar employer, our results most likely underestimate the positive effect of awards as a non-material incentive device.

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1 Introduction

Awards are prevalent in almost all areas of economic and social life, be it in sports, in the arts and culture, or in politics (Frey, 2005). Awards are also increasingly popular in the corporate sector, where managers consider innovative human resource practice, such as awards, to be essential for firm competitiveness (Ichniowski and Shaw, 2003). Nelson (2005), for example, provides ample evidence of the number and variety of awards in companies.

The prevalence and popularity of awards in the corporate sector suggest that awards fulfill important functions in principal-agent relationships. Interestingly, most of economic research has so far neglected them. However, there are some works that may contribute to understanding awards as incentives. Awards motivate, for instance, due to their value as signals for ability and high motivation (Spence, 1974; Rege, 2008, on status as a signal for ability). They can also be understood as tournament prizes especially when they are associated with a large monetary bonus (Lazear and Rosen, 1981). In recent years, behavioral economics has explored a set of motivations in the workplace that have traditionally not been explicitly studied in economics. Examples of such motivations that can explain why people strive for awards are status (Auriol and Renault, 2008; Moldovanu et al., 2005; Loch et al., 2001), concerns for social recognition (Brennan and Pettit, 2004) and a positive self-image (Bénabou and Tirole, 2002), feedback (Suvorov and van de Ven, 2006), respect (Ellingsen and Johannesson, 2007) and identity (Akerlof and Kranton, 2005). We are aware of only few other papers that explicitly address awards as incentives. First, the field experiment of Markham et al. (2002) shows that the introduction of a public recognition program to reduce absenteeism decreases the latter by 52 percent in the last quarter of their study. Second, Gavrila et al. (2005) describe an optimal solution for the management of awards over time, considering that their incentive effect depends on the number of awards in circulation. Third, Besley and Ghatak (2008) analyze a principal-agent setting with rewards, such as job titles or awards, as incentives. In their analysis the decisive feature of these kinds of incentives is that they have zero marginal costs. Therefore, it is incentive compatible for the principal to award them even if her payoff is not verifiable. Fourth, Magnus (1981) discusses public demonstrations of appreciation as a better means to increase productivity than salary raises. Finally, Frey and Neckermann (2008) discuss the various motivational channels via which awards affect behavior and Neckermann et al. (2008) show that introducing an award significantly influences performance after awards are handed out.

Hence, while it is generally acknowledged that people care about the various other motivators mentioned above, their impact on performance has not been em-

pirically verified as both recognition and performance are hard to measure in real-life work situations. In this paper, we present the first empirical assessment of the incentive effect of non-material awards (i.e. rewards with no impact on current or future material well-being) on performance in a real-life work situation. Subjects in our field experiment were hired by an international non-governmental organization (NGO) to work on a two-hour job. The task consisted in collecting contact information on the internet for the address database of the NGO. All subjects earned a fixed wage. In addition to the fixed wage, subjects in the award group were informed at the beginning of the work period that the two persons who produced the best output (i.e. who collected the largest amount of relevant information) would receive an award from the NGO. The award consisted of a personalized congratulatory card that was signed by the president of the NGO. The award was materially worthless, which ensures that any behavioral effect is driven by non-material aspects of the award. Our results show that subjects in the award group significantly outperform subjects in the control group, where no award was given. On average, productivity increases between 9 and 12 percent depending on the measure of productivity that is considered. As these changes in performance were observed in a real-life work situation, the results offer strong evidence for the important role of awards in firms and organizations. In fact, because subjects worked together only for two hours and for an unfamiliar employer, we conjecture that our results most likely underestimate the positive effect of awards as non-material incentive devices. Our results also add to the ongoing discussion about the different findings on the impact of reciprocity in gift-exchange relations in the lab and in the field. While lab studies find a large behavioral impact of wage increases, effort reacts relatively little in the field. Dur (2008) argues that this divergence is caused by the fact that employers in the field typically use types of motivators other than wage, e.g. recognition, to signal kind intentions. Therefore, employees do not reciprocate wage increases in the field to an extent as they do in the lab, where money is the only means of signaling kind intentions.

The paper is organized as follows. In the following section, we describe the experimental design. Section 3 presents and discusses the experimental results. Section 4 concludes.

2 Experimental Design

The field experiment was conducted in collaboration with the Swiss division of the international NGO *The Hunger Project* (THP). This NGO, headquartered in New York, operates world-wide to fight hunger and extreme poverty. With their epicenter program, the NGO supports communities in creating their own schools and health centers, as well as in providing food security, literacy trainings, and banking.

Further, the NGO has leadership programs to educate men and women for political leadership roles, programs to empower indigenous communities, and programs to strengthen democracy. In addition to raising funds from private individuals and corporations, THP Switzerland began asking Swiss communities for financial support in 2006. Due to the highly federal nature of the Swiss political system, individual communities have their own developmental budgets. As the initial appeals for money at a small number of communities were very successful, the organization decided to send appeals to all of the about 1600 German speaking Swiss communities. For this mailing, the organization planned a database with the names and addresses of the communities as well as the names of the current community presidents and community administrators to personalize the appeals. Additionally, further contact information such as the phone number and e-mail address of the community office was to be included. We took this unique opportunity to run a field experiment and hired students for this job via announcements on different university blackboards. The job announcement did not reveal the identity of the employer but only described a one-time data entry job of two hours in which CHF 45 (approximately \$37, a standard wage for student workers in Switzerland) could be earned. We chose this procedure to ensure that we did not recruit a selected set of socially-minded students. Interested students could sign up online and were then contacted by our recruiters who assigned them to workgroups of up to twelve students ensuring an approximately equal distribution of gender and subject of study across groups. In total, 150 students participated in the study distributed over 16 workgroups with an average number of 9.4 participants per group (group sizes varied between 7 and 12).¹ 67 students participated in the control sessions without award (7 sessions) and 83 students participated in the award sessions (9 sessions). The experiment was conducted with one group of students at a time in a university lecture hall equipped with laptops and internet connections.² Upon arrival, students were asked to take place in front of one work station. The workstations were arranged in u-form with sufficient space between the participants to ensure that students felt unobserved in their work. Then the students were informed about THP and their task. The THP database could be accessed online with an individual password that was handed out to the students when entering the room. Online, each student faced a set of 60 communities to work on. To generate a sufficient number of communities for all the students, most of the 1600 Swiss communities were part of two or more sets. The

¹We checked whether group size has an effect on performance. This is not the case in any of the two treatments.

²When introducing THP to the students, we informed them that the Swiss division of THP was small and run by the administrator from her home office. Therefore, a room was requested from the university for the data entry project, which the university provided free of charge. This was done to ensure that students did not wonder about why the job took place in a university building.

community sets were generated in a way that ensured equal difficulty of the different sets. The difficulty of finding the relevant information mostly depends on the size of the community, as the web presence and detail of information online typically increases with the number of inhabitants. Therefore, communities were sorted into class categories and each student received the same number of communities from each category. The task of the students consisted in searching contact information on the internet and in entering the data in the database.³ We informed the students that the names of the president and the administrator were sometimes hard to find but vital for the NGO, as personalized letters more likely result in a donation. In the analysis, this allows us to check if the students merely collected the easy-to-find information or acted in the interest of the organization by exerting effort to find out the names. The information on the organization as well as on the task was given to the students according to a fixed protocol by the same research assistant in all groups. In the award treatment, the chairwomen of the NGO told the subjects at the beginning of the work session that THP wanted to reward the two students who put in most effort in terms of quantity and quality of entries and that the database software would indicate these two names at the end of the session.⁴ She also told them that she would personally come by at the end of the session to congratulate and thank the winners. The students were further shown the award that consisted in a congratulatory note (see Appendix A) to ensure that students fully understood that the award was of no material value. In line with other company award systems, we specifically left the exact criteria according to which the winners would be chosen vague. The database software was designed such that it assigned points for each edited community. The number of points depended on the number of fields completed and was higher for more difficult fields, such as the names of the president and the community administrator. While we were present throughout each session to help students in case there were questions, students were left alone to work for the 2 hours. About 5 minutes before the end of their worktime, we asked the students to fill out a short questionnaire that we portrayed as feedback for THP on how they handled the employment of the students. The questionnaire included questions about previous database experience, knowledge of the touch system, perceived difficulty of the task, and level of engagement in volunteering work. In the award sessions, the chairman of THP then handed over the awards. Afterwards, students were paid the CHF 45 in cash. The experiment took place in a three week

³All students were informed that they could find the basic information, i.e. the address of the community, via the web portal www.ch.ch and that they had to look for the names of the president and administrator and – if not already available on www.ch.ch – also for the phone number and e-mail address via the homepage of the respective communities.

⁴The wording was specifically chosen such that subjects in the award unlike in the control sessions did not get the impression that their performance was closely monitored.

period in spring 2008 with two or three work groups per day (morning, midday and afternoon). Again, we ensured that award and control treatments took place with equal frequency in each of these time slots.

3 Results

Because sessions differed somewhat in length, we analyze subjects' performance in terms of productivity, i.e., output per minute of worktime. Worktime represents the actual length of a session and is calculated as the span of time between the first opening of a community data-screen and the last saving of an entry in any given session.⁵ As output measures we use the number of communities that the subjects worked on per minute and next, the number of points per minute that the subjects achieved. The first measure reflects the main goal of the task, namely to enter the addresses of as many communities as possible as this enables the organization to send out the appeals. The second measure takes into account that the different items to be entered are of different importance to the NGO and require different amounts of time and effort. Specifically, the names of the community president and clerk are hard to find online but are valuable to the organization, as personalized letters more likely result in a donation. To generate a performance measure that takes these aspects into account, THP developed a rating scheme before the experiment took place. Specifically, THP attributed a certain number of points to each of the fields to be entered. The performance index is then constructed by adding up the points for all fields that the subject worked on during the job. In total, students could earn 20 points for each community entered: 1 point each for entering the zip code and the name of community or city, 2 points each for entering the address or P.O. Box, the telephone number, and the e-mail address of the community office, 3 points for finding the correct term with which the community office wants to be addressed (e.g. community office or city bureau), 4 points for the name of the community president and 5 points for the name of the community clerk. Overall, the two performance measures presented reflect the two dimensions of the task: 1) the quantity of work done and 2) the quality in terms of whether students prioritized their work in line with the stated objectives of the organization. Table 1 displays the descriptive statistics.

Table 1 shows that students in the award treatment are more productive than

⁵The differences in session lengths are caused by the fact that, in some sessions, students took longer to enter the room, to take their seats and to ask questions. While session lengths are not statistically significantly different between award and control sessions, individual sessions differ to up to 10 minutes and on average the award sessions are a little shorter. Using productivity rather than total output corrects for these differences. Our results reported below are robust when total output is used as the dependent variable.

Table 1: Summary Statistics

	Session	Average number of communities per minute	Average number of points per minute
No award	1	0.216	3.944
	2	0.237	4.412
	3	0.219	3.992
	4	0.222	4.365
	5	0.204	3.967
	6	0.273	4.781
	7	0.222	4.064
	∅	0.226	4.194
Award	8	0.253	4.479
	9	0.232	4.393
	10	0.249	4.698
	11	0.287	5.261
	12	0.232	4.184
	13	0.233	4.233
	14	0.300	4.452
	15	0.256	4.895
	16	0.256	4.594
∅	0.253	4.572	

Note: The productivity measures refer to the average output per minute of actual worktime in each session.

those in the control treatment. On average, the performance in the award sessions is by 12% higher in terms of the number of communities entered and by 9% higher in terms of the number of points achieved. Table 2 presents the regression results for three different model specifications. Model 1 presents the simple regression of the dependent variable on the treatment variable and a constant. Model 2 additionally controls for ability, i.e. skill in using the touch system, and work experience with databases. Model 3 further controls for perceived task difficulty. The additional controls are taken from the questionnaire that was asked at the end of each session. As not all subjects answered to all questions in the questionnaire, the number of observations decreases from model 1 to 3.

The regression results show that both types of productivity are significantly higher in the award sessions and that this effort enhancing effect is robust to alternative model specifications. This result is corroborated by a non-parametric analysis (Mann-Whitney test, $p = 0.02$ and $p = 0.04$ respectively, one-sided). The effect size of the award is substantial. Experiments on gift-exchange report output elasticities

Table 2: Impact of Award on Labor Productivity

Dependent variable	Communities per minute			Points per minute		
	(1)	(2)	(3)	(4)	(5)	(6)
Award	.0274** (0.010)	0.034*** (0.010)	0.036*** (0.010)	0.378** (0.153)	0.458*** (0.156)	0.510*** (0.164)
Touch typing		0.017 (0.012)	0.015 (0.012)		0.313* (0.177)	0.269 (0.193)
Database		0.021 (0.016)	0.025 (0.017)		0.414 (0.303)	0.460 (0.319)
Concentration			-0.010* (0.005)			-0.134 (0.078)
Constant	0.226*** (0.007)	0.209*** (0.011)	0.261*** (0.026)	4.188*** (0.101)	3.858*** (0.168)	4.560*** (0.440)
<i>N</i>	150	139	138	150	139	138

Note: Robust standard errors are reported in parentheses (data clustered on session-level). ***, **, * indicate significance at the 1-, 5-, and 10-percent level. *Award* is a dummy variable indicating whether the subject worked in an award session. *Touch typing* and *Database* are dummy variables indicating whether the subject knows how to write with the touch system and has experience in working with databases. The variable *concentration* reflects perceived task difficulty on a 7-point Likert-scale on how much the subject agrees with the statement “*The task required my full concentration*” with 1 representing “*I totally disagree*” and 7 representing “*I fully agree*”.

with respect to wage increases between 0.16 and 0.38 (Fehr et al. (2007)). Hence, the observed increase in performance of about 10% is equivalent to what could be induced by increasing hourly wage between 26 and 62%. These substantial corresponding wage increases seem quite plausible in light of recent findings that subjects seem to react less strongly to wage increases in the field than in the lab. Dur (2008) argues that this disparity is caused by the fact that in lab experiments, wage is the only means of exchange, while managers in the field also have socioeconomic tools, such as symbolic gifts, at their disposal to build up exchange relationships with their workers. Specifically, the latter may work better than money as signals of kind intentions, thereby causing strong reciprocal reactions from the workers.

Of the other control variables, only skill in using the touch system and concentration become statistically significant in some of the regressions each with the expected sign. None of the other variables we elicited in the questionnaire have a statistically significant impact on performance or the award coefficient. For example, subjects’ pro-social motivation that was measured by the frequency with which subjects are engaged in volunteering work and the frequency and amount of donations to charities has no influence on subjects’ performance and on how they react

to the award. We also do not find a gender effect.

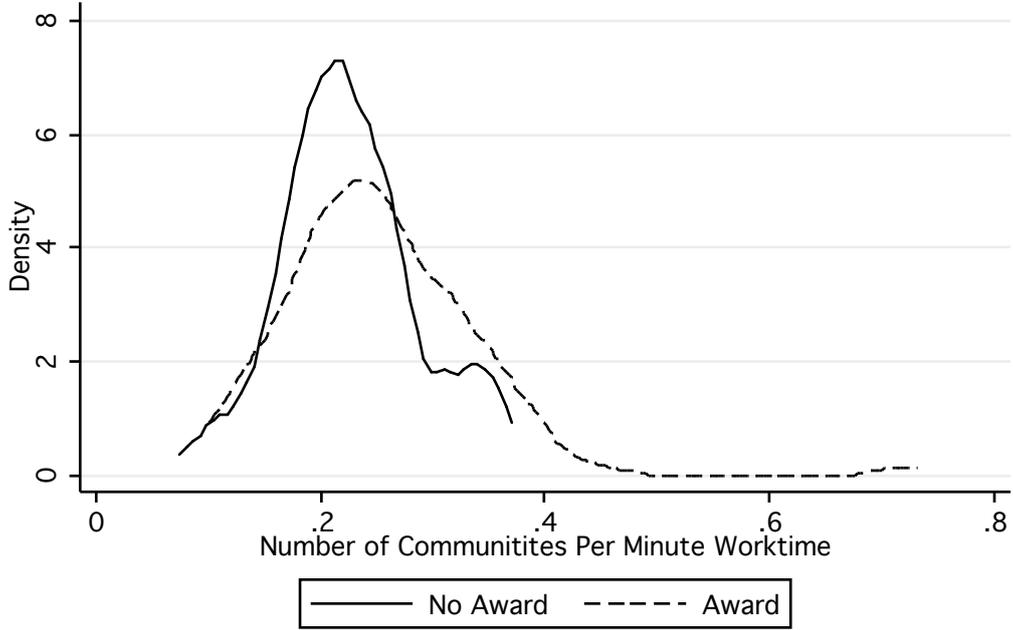
Importantly, the increase in performance comes at no cost in quality. We checked the correctness of every information entered into the database. Looking at the share of fields (address, e-mail, phone number, etc.) that were entered correctly for any given community, we find that on average 88% and 87% of the information of a community is entered correctly in the control and the award treatment, respectively. Both quality levels are remarkably high and do not differ between the treatments (Mann-Whitney test, $p = 0.310$, two-sided). The same holds for other possible quality measures, such as, e.g., the number of mistakes or the number of communities entered 100% correctly. In principle, the higher number of points achieved in the award sessions could be caused either by a larger quantity of communities worked on or by a higher frequency of completed fields that bring more points. We find that the former is the case as there is no difference in the number of completed names-fields that bring most points per entry. Therefore, the observed increase in productivity in the award sessions is a quantity effect that does not come at the expense of quality. At the same time, there was also little scope for an increase in quality due to the award, as quality levels are also high in the control sessions.

We further inquired into the nature of the performance increase. In case awards motivate due to the tournament character of the award, the variance of performances should be higher in the award than in the control treatment, as high ability agents exert additional effort to win the award. In case the award signals that the task is of high social value and that the effort of the subjects is much appreciated, the entire distribution of performances should be shifted to the right, as the award motivates all subjects and not merely those that expect to win.

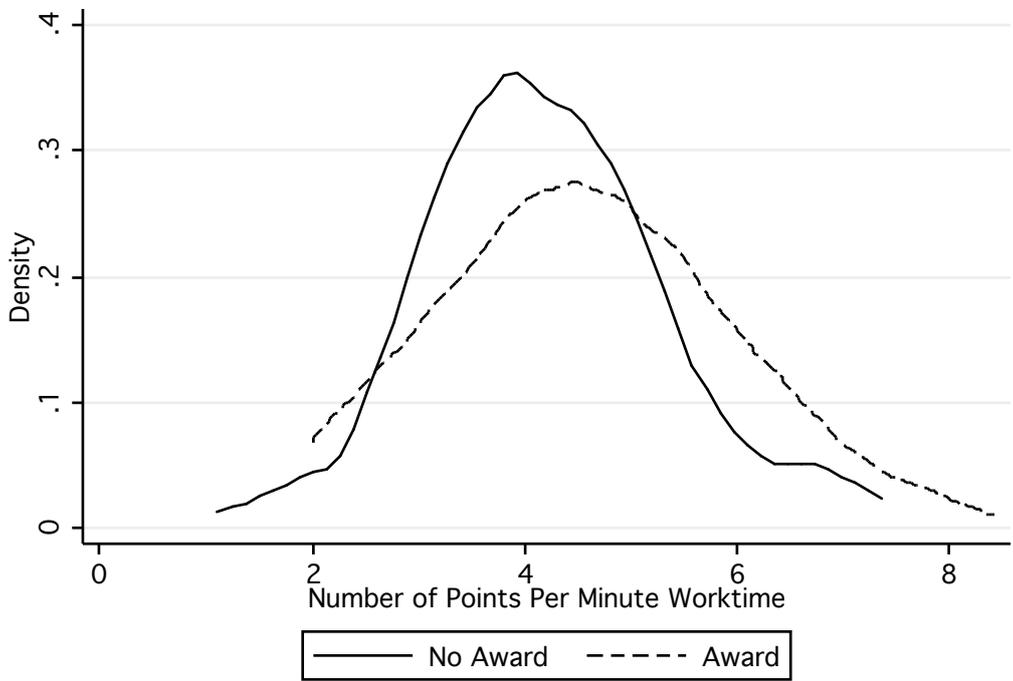
Concerning the number of communities entered, we find that the standard deviation is somewhat higher in the award (0.09) than in the control treatment (0.06) due to higher performances at the top end of the performance spectrum. Hence, part of the increase in performance is caused by the tournament character of the award. At the same time, the whole performance distribution is shifted to the right (see figure 3 below). The two-sample Kolmogorov test for equality of distributions is weakly significant. We can reject the hypothesis that the two samples come from the same distribution on the 10% level ($p = 0.08$)

The picture is similar for the number of points. Again, the standard deviation is somewhat higher in the award (1.38) than in the control treatment (1.09) and the distribution is shifted to the right. However, the Kolmogorov test does not indicate a statistically significant difference between the two distributions ($p = 0.12$).

Distribution of Performances -- Kernel Density Estimates



kernel = epanechnikov, bandwidth = 0.0196



kernel = epanechnikov, bandwidth = 0.4243

4 Conclusion

The reported field experiment shows that awards without any material consequence have a statistically and economically significant impact on work performance. We isolated this performance enhancing effect under the toughest conditions possible: a one-time, two hours student job for an employer unknown to the subjects, among anonymous fellow employees, without any current or future material benefits due to the award, and under the presence of the experimenters, which probably discouraged shirking. This points to the large significance of these kinds of social incentives in the workplace, which is more often characterized by repeated interaction among agents with their peers and superiors as well as awards that have some material value, e.g. in the form of a bonus or as a signal of talent and motivation for outsiders.

A The Award



Figure 1: The Award Certificate

The text translates to "The Hunger Project Switzerland congratulates ... to his/her dedicated and motivated work in creating the community address database. This new database enables us to systematically approach communities with appeals for donations."

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