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## How to Hire Helpers? Evidence From a Field Experiment

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# How to Hire Helpers?

## Evidence From a Field Experiment

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### Abstract

How to hire voluntary helpers? We shed new light on this question by reporting a field experiment in which we invited 2,859 students to help at the 'ESA Europe 2012' conference. Invitation emails varied non-monetary and monetary incentives to convince subjects to offer help. Students could apply to help at the conference and, if so, also specify the working time they want to offer. Just asking subjects to volunteer or offering them a certificate turned out to be significantly more motivating than mentioning that the regular conference fee would be waived for helpers. Increasing monetary incentives by varying hourly wages of 1, 5, and 10 Euros shows positive effects on the number of applications and on the working time offered. However, when comparing these results with treatments without any monetary compensation, the number of applications could not be increased by offering money and may even be reduced.

**Keywords:** Recruitment, Voluntary work, Monetary incentives, Field experiment.

**JEL Classification:** C93, J33, M52.

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# 1 Introduction

How to motivate voluntary helpers? As shown by Menchik and Weisbrod (1987) the standard economic view would suggest to provide financial incentives. Frey and Götte (1999), however, have observed that monetary incentives can well undermine motivation: external financial rewards may backfire as extrinsic incentives could crowd out the intrinsic motives to socially engage (see also Bénabou and Tirole, 2006, 2003). Crowding-out effects are known from different fields of social engagement. Titmuss (1970), for example, argued that monetary compensation for donating blood might crowd out the supply of blood donors (see also Mellström and Johannesson, 2008). Lacetera et al. (2012), however, have shown that extrinsic financial incentives can also stimulate pro-social behavior, e.g., to donate blood. Thus, the evidence on the crowding effects of financial incentives on pro-social behavior is still inconclusive (see Gneezy et al., 2011 for a critical review).

But there is also some evidence that different forms of non-monetary incentives can motivate individuals. If an action is pro-social *per se*, individuals may feel motivated by the action itself as they are doing 'good' as shown by Andreoni (1998). Based on the formal analysis of Bénabou and Tirole (2006), Ariely et al. (2009) have shown experimentally that this effect increases if the pro-social activity is observed by others, i.e., people receive social recognition for their actions improving their social- and self-image (see also Akerlof and Kranton, 2000). In a similar vein, Kosfeld and Neckermann (2011) presented evidence that non-monetary awards can have a strong motivating effect. As pointed out by Clary et al. (1998), another non-monetary source of motivation are opportunities of personal and professional development, i.e., individuals gain career-related benefits from voluntary work, like learning new skills, being enabled to signal personality traits or improving their personal or business networks (see also Holmström, 1999).

To shed more light on the effects of non-monetary and monetary rewards on the willingness to help, we ran a field experiment when organizing the 'ESA Europe 2012' conference hosted by the University of Cologne.<sup>1</sup> We recruited helpers to provide technical assistance in each of the presentation rooms of the different parallel sessions. To advertise our search for helpers we sent out 2,859 emails to a pool of business and economics students enrolled at the University of Cologne. In the email we varied the types of incentives provided.<sup>2</sup>

In one set of treatments we used three types of incentives that did not involve

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<sup>1</sup>The conference took place from September 12th-15th, 2012. Conference website: <http://www.esa.uni-koeln.de>

<sup>2</sup>Differently from Al-Ubaydli and Lee (2011) we vary the content of the invitation message keeping constant its format.

money. In our baseline treatment we tried to motivate candidates to volunteer by just mentioning that they would have the benefit to attend the conference during the time they would not work for us. In a second treatment we additionally offered an appreciatory certificate for their service.<sup>3</sup> In a third treatment we provided information about the exact amount of the regular conference fee, which would be waived for the helpers.

In another set of treatments we provided very small, medium and higher hourly wages to motivate possible candidates, i.e., we offered either 1 Euro, 5 Euros and 10 Euros as hourly wage.<sup>4</sup>

Subjects were randomly assigned to one of the six treatment groups. Departing from other insightful studies on volunteer work supply that mainly exploit survey data (Frey and Götte, 1999) or lab experiments (Linardi and McConnell, 2011) and in line with Gneezy and Rustichini (2000b) and Al-Ubaydli and Lee (2011) we designed a field experiment. Field experiments have the advantage of more clearly disentangling the causal effects of non-monetary and monetary rewards on volunteering while not loosing external validity (see also Harrison and List, 2004, on the benefits of field experimentation). In our analysis we focus on two dependent variables of interest. First, we look at whether possible candidates actually applied to volunteer at the conference with respect to the different treatments. As a second measure we asked applicants about the working time he or she is willing to help at the conference. Thus, our experimental design allows us to analyze the effects of different incentives schemes both on the extensive margin (participation) and the intensive margin (working time offered).

We find that participants reacted differently to the different types of non-monetary incentives. Just asking them to volunteer or offering them an additional certificate was significantly more motivating than mentioning that regular attendees would have to pay an expensive registration fee to get access to the conference. One explanation might be that potential helpers were de-motivated as they felt exploited when becoming aware that a substantial budget was available from the conference fee.

Once money was offered, participants were also sensitive to increasing monetary incentives but only when these incentives were sufficiently strong. While we find no significant differences in the reactions to the 1 Euro or 5 Euros hourly wage, both the number of applications and the working time offered significantly increased when the promised hourly wage was 10 Euros instead of 1 or 5 Euros. Hence, paying more money may actually help to attract helpers, but only when

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<sup>3</sup>See Kosfeld and Neckermann (2011); Bradler et al. (2013) for other studies on the impact of certificates.

<sup>4</sup>The normal average hourly wage for a student assistant is about 8.80 Euros per hour at the University of Cologne.

the wage level exceeds the opportunity costs of work.

Comparing the non-monetary with the monetary incentives we find no significant effects on both margins between just asking for pure voluntary help compared to offering the 1 Euro or 5 Euros hourly wage. We also do not find significant effects on the extensive margin (i.e., the fraction of applicants) between simply asking for help compared to the 10 Euros treatment. However, there is a significant difference on the intensive margin between these two treatments, i.e., offering a 10 Euros hourly wage significantly increased the working time offered.

The paper proceeds as follows. Section 2 introduces the experimental setup and our six treatments. In section 3 we analyze the data. Section 4 discusses and concludes the paper.

## 2 Experimental Setup

We manipulated the emails that were sent out by the organizing committee of the ESA European Conference in Cologne in order to recruit helpers for the conference. A mailing contained basic information about the dates, topic, and content of the conference.<sup>5</sup> At the end of the emails we asked recipients the following:

*[...] For the preparation and procedure of the conference we are looking for volunteers who support us in the organization before and during the conference.[...]*

Students who were interested in helping at the conference were instructed to click on a link to a web page where they were asked to provide some basic information (contact information, demographics) and their availability during the week of the conference. Each day of the conference week was split up into three working shifts of four hours each. Participants who applied had to indicate how many working shifts they would be willing to take.

In our baseline treatment *Voluntary* only the text mentioned above was included in the email. In the other experimental treatments we added one additional sentence that contained the information about the respective incentives. In a first set of treatments we tested the influence of non-monetary incentives on the probability to apply and the willingness to provide working time. In the treatment *Certificate* helpers were told that they would receive a formal certificate at the end of the conference in order to appreciate their help. Additionally, we had a treatment *Waived Fee* in which we highlighted that the regular conference

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<sup>5</sup>The emails were signed by two professors of the faculty of Management, Economics and Social sciences. The full text can be found in the appendix. The original letters were sent out in German. The German texts are available from the authors upon request.

Table 1: Treatments

Treatment	Additional Sentence	$n$
<i>Non-Monetary Incentives</i>		
Voluntary	-	477
Certificate	At the end of the conference you will receive a certificate.	479
Waived Fee	The official registration fee, that you will not have to pay, is 320 €.	469
<i>Monetary Incentives</i>		
1 Euro	Per working hour you get 1 €.	484
5 Euros	Per working hour you get 5 €.	473
10 Euros	Per working hour you get 10 €.	477

Notes:  $n$  represents the number of observations, i.e., the number of candidates who received an email corresponding to the respective treatment.

participants would have to pay a fee of 320 € in order to take part in the conference. To test the influence of monetary incentives, we devised three additional treatments varying the hourly compensation helpers would receive for their service.<sup>6</sup> In the *1 Euro* treatment we offered helpers an hourly compensation of one euro and in the *5 Euros* and *10 Euros* treatments the respective amounts.

For the exact wording of the invitations see Table 1, for the complete texts of the invitation see appendix. Recipients were business and economics students from the study programs of the Faculty of Management, Economics and Social Sciences at the University of Cologne (48% female). A total of 2,859 emails were sent out two month before the conference.<sup>7</sup>

### 3 Results

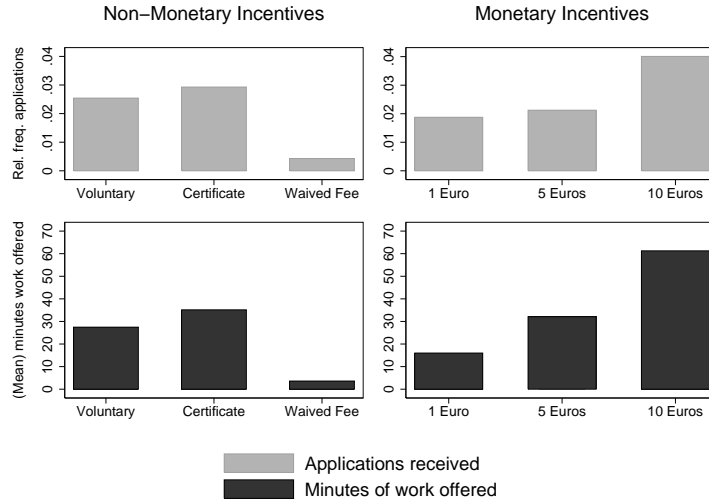
In the following section we first present the results from our treatments without monetary incentives and then focus on the treatments with monetary incentives.

In Figure 1 we display the descriptive statistics of our two variables of interest. The relative frequencies of applications per treatment are displayed in the upper panels (gray bars) while the mean minutes of work offered are shown below (black bars).

<sup>6</sup>Although we provided monetary incentives in these treatments we kept the wording of the emails constant, i.e., we maintained to use the word *volunteer* albeit we would pay helpers in the monetary incentive treatments.

<sup>7</sup>Before the first mailing the authors committed to recruit applicants from the treatment with the highest number of applications. The first mailing was sent out on July 6th, followed by two reminders containing the same information on July 26th and August 2nd.

Figure 1: Relative frequencies of applications (gray bars) and mean minutes of work offered (black bars) for each experimental treatment.



### 3.1 Non-Monetary Incentives

We start by analyzing the number and frequencies of applications under the different non-monetary treatments.

**Observation 1:** *Mentioning the waived conference fee significantly decreases the number of applications and the hours of work offered.*

The number of applications of only 2 in the *Waived Fee* treatment is significantly lower than the 12 in *Voluntary* ( $p=.008$ , Fisher-test, two-sided). No such difference is observed when comparing *Voluntary* with *Certificate* (see also the OLS regression in Table 2, Model 1 which reports results from a linear probability model). The probability that a student applies drops by more than 80% from 2.54% in the *Voluntary* condition to 0.43% in the *Waived Fee* condition.

Now we take a closer look at the number of minutes of work time offered by the participants. The distribution of minutes offered in *Waived Fee* treatment is again significantly different compared to *Voluntary* ( $p=.0324$ , Mann-Whitney U-test, two-sided).<sup>8</sup> No such difference is observed between *Voluntary* and *Certificate* ( $p=.5631$ , two-sided). As also shown in the simple OLS regressions reported in Table 2 (Model 3) the *Waived Fee* treatment reduces the number of minutes offered by about 85% from 27.46 to 3.6 minutes while the certificate had no significant effect.<sup>9</sup>

<sup>8</sup>We treat every subject to whom we sent an email but who did not apply as a subject offering zero minutes of work.

<sup>9</sup>For all specification reported in this paper we also ran Probit or Tobit regression respec-

Table 2: Regressions for Non-Monetary Incentives

Independent variables	Dependent variables			
	applications		minutes	
	(1)	(2)	(3)	(4)
Certificate	0.00386 (0.0106)	0.00353 (0.0106)	7.689 (14.20)	7.668 (14.37)
Waived Fee	-0.0211*** (0.0079)	-0.0212*** (0.0079)	-23.85** (9.915)	-23.85** (9.926)
Female		0.0104 (0.0077)		0.640 (9.726)
Constant	0.0254*** (0.0073)	0.0210*** (0.0070)	27.46*** (9.548)	27.19*** (9.423)
Observations	1,416	1,416	1,416	1,416
R-squared	0.006	0.008	0.005	0.005

Notes: OLS models with the application probability (1 and 2) and the number of minutes (3 and 4) as dependent variables. The reference group (Constant) is Voluntary. Robust standard errors are shown in parentheses. Significance levels: \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ .

## 3.2 Monetary Incentives

Turning to the impact of monetary incentives we can establish the following observation:

**Observation 2:** *Once money is offered, increasing monetary incentives has a positive effect on the number of applications and the minutes of work offered. Relative to the Voluntary treatment even the highest hourly wage does not lead to a significantly higher number of applications but it does lead to a higher number of working minutes provided.*

When we only consider the treatments in which hourly wages are paid, we find evidence of an increasing number of applications with an increase in monetary incentives according to a Jonckheere-Terpstra-test for ordered alternatives ( $p = .0207$ , one-sided). Pairwise comparing the number of applications in treatment 1 Euro of those in treatment 5 Euros shows no significant difference ( $p = .392$ , Fisher-test, one-sided). When comparing the number of applications in treatments 1 Euro / 5 Euros with the 10 Euros treatment we find significant and sizable differences (1 Euro:  $p = .026$ , 5 Euros:  $p = .046$ , Fisher-test, one-sided).

The OLS regressions reported in Table 3 (Model 1) complement our non-parametric findings. Reference group is the 10 Euros treatment as it led to the highest number of applications and the highest number of minutes of work time

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tively with very similar results.



offered. Reducing the wage rate from 10 Euros to either *1 Euro* or *5 Euros* leads to a reduction of the application probability by roughly 50%. However, it also becomes clear that while the number of applicants is somewhat smaller in the *Voluntary* treatment without any compensation there is no significant difference to this treatment. Hence, paying a substantial hourly wage did not lead to an increase in the number of applicants relative to the announcement of a purely voluntary activity.<sup>10</sup>

Again there is an increasing number of working minutes offered across the monetary treatments (Jonckheere-Terpstra-test,  $p=.0048$ , one-sided). Pairwise comparing the working minutes offered in treatment *1 Euro* with those offered in treatment *5 Euros* delivers no significant difference ( $p=.147$ , MWU-test, one-sided). Contrasting the working minutes in treatment *1 Euro / 5 Euros* with the *10 Euros* treatment we find (weakly) significant differences (*1 Euro*:  $p=.0058$ , *5 Euros*:  $p=.0634$ , MWU-tests, one-sided). In Table 3 (Model 3) we display the results of OLS regressions with the working minutes as dependent variable. Given that money is offered the minutes supplied vary nearly linearly in the wage rate (the minutes supplied are only significantly different between the *1 Euro* and *10 Euros* condition).

Table 3: Regressions for Monetary Incentives

Independent variables	Dependent variables			
	applications		minutes	
	(1)	(2)	(3)	(4)
5 Euros	-0.0189* (0.0112)	-0.0188* (0.0112)	-29.16 (18.91)	-29.11 (18.92)
1 Euro	-0.0213* (0.0109)	-0.0213* (0.0109)	-45.27*** (17.30)	-45.19*** (17.31)
Voluntary	-0.0147 (0.0116)	-0.0144 (0.0116)	-33.81* (18.34)	-33.51* (18.37)
Female		0.0100 (0.0076)		9.828 (11.41)
Constant	0.0401*** (0.0090)	0.0355*** (0.0096)	61.27*** (15.66)	56.79*** (16.62)
Observations	1,897	1,897	1,897	1,897
R-squared	0.003	0.004	0.005	0.005

Notes: OLS models with the application probability (1 and 2) and the number of minutes (3 and 4) as dependent variables. The reference group (Constant) is 10 Euros. Robust standard errors are shown in parentheses.

Significance levels: \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ .

<sup>10</sup>The application probability both for the *1 Euro* and the *5 Euros* treatment (even though lower) are also not significantly different from that under the *Voluntary* treatment.

Moreover, the announcement of no payment (*Voluntary*) reduced the number of minutes offered by about 50% relative to the *10 Euros* treatment. Hence, while paying money did not help to increase the number of applicants, it raised the willingness to spend time substantially once the payment exceeded a typical student reservation wage which is at about 8.80 Euros. When paying only a small compensation, using money seems to have led to crowding-out effects. This is well inline with Gneezy and Rustichini (2000a) as the offered work minutes under the *1 Euro* and *5 Euros* conditions are not statistically different from the minutes offered in the voluntary treatment and the average value of the minutes offered is even somewhat smaller in the *1 Euro* condition.<sup>11</sup>

## 4 Conclusion

Our results confirm and extend previous findings on how to motivate volunteers. First of all, once money is offered, labor supply in terms of the number of applicants and the offered minutes is increasing in the hourly wage offered which is well in line with purely neoclassical considerations. However, when comparing the results with a treatment without any monetary compensation, the number of applications could not be increased by offering money and may even be reduced. Though, once the payment offered exceeds the reservation wage, it also leads to an overall labor supply that is larger. A direct implication of this result is that if the pool of potential volunteers is sufficiently large and it suffices that each volunteer provides a smaller number of working time not offering money may be preferable even in the absence of budget constraints. However, when the applicant pool is not large enough paying wages above the reservation wage still helps to increase the overall labor supply.

But the most striking result is that mentioning the waived conference fees induces a substantial demotivating effect. This negative effect may be explained by the potential helpers' perception that the conference fee leads to a substantial budget which is spent on other issues. Apparently, becoming aware that a substantial budget is available potential volunteers may feel exploited when being offered no compensation. Potentially, the clarification for the use of funds may overcome this danger. Whether and to what extent this is the case should be an interesting topic for future research.

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<sup>11</sup>There are several interpretations for such crowding-out effects based on formal economic models. An interpretation of this result in the light of Bénabou and Tirole (2006) is that weak monetary incentives reduce the signaling value of an application to demonstrate pro-social preferences. An interpretation in the spirit of Sliwka (2007) is that offering weak monetary incentives may reveal that volunteering without any monetary compensation is not the norm of behavior (hence, money has to be offered to attract applications). At the same time the hourly wage is too small to attract applications that are driven by purely pecuniary motives.

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## Appendix

### Invitation Email

Subject: Volunteers for a conference

Dear <Name inserted>,

From 12th to 15th of September 2012 the conference of the Economic Science Association (ESA) is taking place at the University of Cologne. Over 200 economists from all over the world get together to talk about current findings from the field of behavioural economics. Besides many interesting speeches, there are presentations from international elite researchers (i. a. Max Bazerman from Harvard Business School). You can find more details on the conference homepage [www.esa.uni-koeln.de](http://www.esa.uni-koeln.de). For the preparation and procedure of the conference we are looking for volunteers, who support us in the organization before and during the conference. During the times you are not working as a volunteer you can attend interesting lectures and discussions.

{ *Voluntary:*}

{ *Certificate:* At the end of the conference we hand a certificate out to you. }

{ *Waived Fee:* The participation fee which you are relieved from would be about 320 €. }

{ *1 Euro:* Per working hour you get 1 €. }

{ *5 Euros:* Per working hour you get 5 €. }

{ *10 Euros:* Per working hour you get 10 €. }

In case we aroused your interest you can apply online and without much expenditure of time under this link. You can also indicate on which days and how many hours you would like to work for us: You can find the application here.

Yours sincerely,

Prof. Dr. Bernd Irlenbusch & Prof. Dr. Dirk Sliwka