**“The good news about bad news”: Information about past organizational failure and its impact on worker productivity**

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**Abstract**

Failure in organizations is very common. Little is known about whether leaders should provide information about past organizational failure to followers and how this might affect their future performance. We conducted a field experiment in which we recruited temporary workers to carry out a phone campaign to attract new volunteers and randomly assigned them to either receive or not to receive information about a failed mail campaign pursuing the same goal. We find that informed workers performed better, regardless of whether they had previously worked on the failed mail campaign or not. Evidence from a second field experiment with students asked to support voluntarily a campaign for reducing food waste corroborates the finding. We explore the role of leadership tactics behind our findings in a third online survey experiment. We conclude that information about past failure is unlikely to have a negative impact on work performance, and might even lead to performance improvement. Implications for future research on the relevance of leadership tactics when giving such information are discussed.

JEL: C93, J22, M50

Keywords: failure feedback, field experiment, work motivation, identity leadership, charismatic leadership

**Introduction**

The provision of feedback about followers’ performance is a very common leadership practice aimed towards improving workers’ motivation and, hence, productivity. The previous literature in economics, psychology and management has primarily focused on how personal feedback about relative performance affects goal setting, work motivation and task performance. By appealing to workers’ competitive, status-seeking or self-esteem-seeking preferences, feedback about relative performance can boost worker productivity (Festinger, 1954). Much less is known, however, about how feedback on past organizational performance, such as the failure to meet the targets of a whole department or large projects, affects followers’ performance. Since a single employee might contribute only marginally, if at all, to the success of a large project, information on past organizational performance does hardly entail feedback about one’s own performance. Hence, the literature on individual and group performance feedback provides only some guidance regarding the question whether leaders are well advised to inform followers about what has happened in the past. In practice, leaders would typically boast to employees about major achievements and successes to improve morale but are more cautious and reluctant when performance has not been stellar. Given that failure in organizations, from small to large, is ubiquitous, often attributed to leaders (Meindl and Ehrlich, 1987) and can adversely affect followers’ perception of leadership effectiveness (Giessner and van Knippenberg, 2008), it is particularly important to understand from a leadership perspective how bad news about past organizational performance affects the future productivity of followers. This is the main objective of the current study.

Our second objective, following the literature on identity and charismatic leadership (e.g. Haslam et al., 2010; Antonakis et al., 2016), is to explore whether the way in which the leader communicates unfavorable information matters. These are the research questions that are addressed in this paper through two field experiments and an online survey experiment, in which we provide information about past organizational performance that does not entail any feedback about followers’ individual performance.

The first field experiment builds on a partnership with a local volunteering agency, which puts people interested in volunteering in contact with suitable charities and associations. An initial letter campaign that was intended to attract new volunteers proved to be unsuccessful. We study how the provision of information about this failure affects subsequent work performance in a phone campaign with the same goal, by randomly assigning workers to either receive or not receive information about the previously failed mail campaign. We find that informed workers performed significantly better.[[4]](#footnote-4)

By conducting a second field experiment with University students who were asked to voluntarily write petition letters, we wanted to rule out that our previous finding is neither driven by the relatively small sample size nor by the rather generous wage. Similar to the first experiment, only half of the participants received the information that the previous campaign to collect signatures was unsuccessful. Again, we find a positive treatment effect, as a larger share of informed individuals decided to write a letter.

While the two field experiments allowed us to observe individuals’ actual behavior after learning about the previous failure, this type of experiment is clearly limited in the number and content of treatments that can be conducted and, hence, some open questions still remain. Thus, we ran an additional online survey experiment to investigate i) how the effect induced by the negative information compares to positive information, ii) whether the effect was mainly caused by the specific charity context that we examined in the two field experiments, and iii) whether the use of identity and charismatic leadership tactics matters for the subsequent performance of followers when being informed about the previous failure. Even though we do not observe the same positive treatment effect as in experiments 1 and 2, the obtained results can be seen as a preliminary indication that the field experimental evidence is driven by the use of such leadership tactics.

**Theoretical background**

A large literature in organizational behavior and management has examined the impact of feedback on worker productivity (e.g. Ilgen et al., 1979; Locke and Latham, 1990; Kluger and DeNisi, 1996). Feedback about relative performance amounts to the provision of information that allows workers to compare themselves to peers. By appealing to workers’ competitive, status-seeking or self-esteem-seeking preferences, feedback can boost worker productivity (Festinger, 1954). Prior research has highlighted the role of timing and source characteristics, such as power and credibility, for the effectiveness of feedback in influencing performance (Lechermeier and Fassnacht, 2018), whereas other studies have stressed the importance of the interaction between feedback and goal setting (Kim and Hamner, 1976; Earley et al., 1990). Podsakoff and Farh (1989) suggest that receiving credible negative feedback results in setting higher personal goals and, hence, better performance compared to receiving no or positive feedback. This positive effect is, however, likely to be found only as long as failure feedback does not lower the recipient’s self-concept (Ilgen and Davis, 2000) and the feedback is not associated with negative leader emotions (Gaddis et al., 2004). Furthermore, the strength of the reaction to negative feedback is a function of an individual’s self-efficacy regarding her ability to attain higher standards of performance (Bandura and Cervone, 1983; Gist and Mitchell, 1992).

A literature in economics has also developed in this area focusing primarily on how personal feedback about relative performance affects individual performance under different incentive schemes. In laboratory experiments, the general finding is a positive effect (Kuhnen and Tymula, 2012; Azmat and Iriberri, 2016; Gerhards and Siemer, 2016; Gill et al., 2019), though this might depend on the type of incentive scheme in place and might come with side-effects, such as deterioration of quality of work or sabotage (Eriksson et al., 2009; Charness et al., 2013). Positive effects of feedback on performance has also been found in field settings that involve workplace (Blanes i Vidal and Nossol, 2011) or educational contexts (Azmat and Iriberri, 2010; Tran and Zeckhauser, 2012).

It is, however, questionable whether insights obtained from studies focusing on feedback about individual outcomes can be applied in settings of collective failure that shall be analysed in the present paper. A single employee might contribute only marginally, if at all, to the success of a large project since either the management’s decision making or the efforts of a large number of other employees determine such outcomes. Hence, employees might anticipate that setting higher personal goals, for example, is not sufficient to change course so that information about past failure is more likely to lead to disappointment associated with the fact that already exerted effort was futile (Shepherd et al., 2011). Beyond this, past failure might also signal to both already involved and newly employed workers that the particular organizational goal is hard to achieve. Even though challenging goals can positively influence work performance (Locke and Latham, 2002), Curşeu et al. (2014) have shown that there is an inverted U-shape association between goal difficulty and group performance, so that bad news about past organizational performance is likely to have a discouraging effect on workers’ motivation.

Unlike the literature that is concerned with how personal feedback about relative performance affects individual performance, research on the effects of group or team performance feedback is underdeveloped. Only a few recent studies have considered the impact of team performance feedback: Bandiera et al. (2013) and Delfgaauw et al. (2013) provide mixed evidence on the impact of team feedback on subsequent performance in field settings, while Ertac et al. (2019) shows in a laboratory experiment that whether team feedback is effective depends on the team production technology. Gabelica et al. (2014) suggests that team feedback leads to improved performance in teams only if it is combined with opportunities for reflection and learning.

Our paper contributes to this literature by looking at whether bad news about organizational performance affects the efforts of individuals who were not personally responsible for past failures. This is a question which, while relevant in many modern workplaces, to the best of our knowledge has not received any attention yet. Based on all the previous evidence on performance feedback effects, there is no clear hypothesis regarding the expected outcome. Given the theoretical perspective of identity leadership (for a multilevel review, see Epitropaki et al., 2017) and charismatic leadership (for a historical overview, see Antonakis et al., 2016), however, we expect that the framing of how leaders communicate information about the past would matter.

The framework of identity leadership is based on the notion that leaders achieve influence by instilling a sense of “us” to the group they are leading, therewith leveraging collective goals and outcomes as sources of motivation, instead of individual goals and rewards (Ellemers et al., 2004; Haslam et al., 2010). Giles et al. (2009), for example, show a positive relationship between team identification and creative performance. More related to the question of whether group identification and identity leadership plays an important role in the provision of failure information is the following evidence: Madzar (2001) has shown that the leadership style significantly influences subordinates’ proactivity in acquiring information. If subordinates actively request information, they are not only likely to honor receiving information in itself, they might also be aware of the possibility that not every project is successful so that they can also react more positively following bad news. Moreover, Giessner et al. (2009) find that group prototypical leaders are more trusted by their followers and, hence, also evaluated as more effective after failure information.

Even though the concepts of identity and charismatic leadership are not the same, they rely on similar assumptions about why leadership should affect followers’ behavior. Shamir et al. (1993) argue that charismatic leaders increase the intrinsic value of efforts and goals by linking them to valued aspects of the follower’s self-concept but they also change the salience of values and identities. Given that values and identities are socially based, followers’ concerns are likely to shift from individual gains to concerns about contributions to a collective. Antonakis et al. (2019) provide evidence from a field and a series of laboratory experiments that a charismatic speech can have similar motivational effects as high-powered output-based financial incentives. The charismatic leadership tactics (CLT) ―that can arouse followers’ emotions and affect outcomes such as trust in the leader― work via framing and creating a vision, but also by providing substance to the message, which includes addressing the sentiments of the collective (Antonakis et al., 2011; Jacquart and Antonakis, 2015). In contrast, Shea and Howell (1999) find that individuals working for noncharismatic leaders performed as well as individuals working for charismatic leaders in case of receiving individual task feedback. This finding suggests that leadership approaches are more effective in shifting followers’ concerns from individual gains to the collective if group-level information is incorporated ―as is the case in our study. Regarding the nonprofit context in which we conducted the two field experiments, Rowold et al. (2014) analyze the relative importance of six different leadership constructs and find that transformational leadership is even more important for individuals’ affective relationship to their organization in the nonprofit than in the for-profit sample. According to Bass (1985), transformational leadership comprises four major factors with a charismatic leader being one of them.

Taking the mixed evidence on team performance feedback and the positive impact of identity and charismatic leadership together, the impact of bad news about organizational performance is likely to depend on the use of such leadership tactics. Given that it is in a leader’s interest to have the most motivated workers, we did make use of the two leadership theories in the way we communicated the past failure in both field experiments presented in this study. Hence, we do not expect the failure to have a negative effect on work performance. Without the use of identity and charismatic leadership tactics to communicate the previous failure, however, individuals might be less motivated to exert costly effort. As a result, we would expect to observe differences between information treatments that vary in the way in which failure is communicated, in both a charity and a for-profit context. Due to the limited sample sizes and the specific settings of our two field experiments, we had to conduct an additional online survey experiment to test this suggestion. This survey experiment did not only allow us to vary how the failure was communicated (using either a neutral wording or a wording inspired by charismatic and identity leadership) but also the workplace context (for profit or charity), in order to better understand how failure information impacts subsequent performance.

**Field Experiment I**

*Experimental Design*

*Background*

The current study was possible due to a collaboration with an advertising agency that carries out mailing campaigns for various organizations in the private and public sector, including charities. In fall 2014, one such mailing campaign was conducted on behalf of a volunteering agency that matches people interested in volunteering with suitable local charities in a medium-sized German city. Short-term workers assisted in this campaign by filling letters into envelopes.[[5]](#footnote-5) The letters emphasized the importance of volunteer work for society and invited the recipients to become committed volunteers within their area. Due to being in contact with the head of the volunteering agency we learned that out of 12,500 letters that were sent out, reaching roughly 17% of all households within the city, less than 0.01% of the letters resulted in a volunteer signing up with a local charity.

The failure of this campaign was not due to the poor performance of the temporary workers who enveloped and stamped the letters, it is rather likely that the agency’s chosen way of attracting possible volunteers was simply not an effective one (unaddressed letters might not even be read by their recipients). Nevertheless, the failure of the first campaign’s attempt to recruit new volunteers offered the opportunity to investigate the impact of an organizational failure on the subsequent effort of workers in a natural setting and without the use of deception. Therefore, in spring 2015, we supported the volunteering agency in carrying out a second volunteer recruitment campaign. This time temporary workers were hired to assist in a phone campaign aiming to raise the local population’s awareness of the volunteering agency and to attract new volunteers.

*Recruitment*

Workers in this study were recruited from two different pools: “returning” workers who were involved in the earlier letter campaign by stuffing the recruitment letters, and “new” workers, who were unaware of the previous letter campaign. The returning workers received an invitation via email, while new workers were recruited via postings on notice boards (supermarkets, public libraries, university campus, etc.) and small ads in regional online platforms. Besides appropriate language skills to conduct phone interviews, the job had no further requirements so that everyone was able to apply and do the job.

Out of the 79 potential candidates among the returning workers, we excluded 15 individuals who lacked the language skills to properly conduct phone interviews. Of the remaining 64 returning workers, 34 agreed to participate in the phone campaign.[[6]](#footnote-6) Additionally, we hired 37 new workers, for a total of 71 workers. New workers had to register via an online interface by providing basic socio-demographics and answering questions about their own volunteering activities ―so that we collected exactly the same amount of information on both worker groups, the returning and the new workers. Whereas returning workers were told that their job would be to conduct a phone campaign following the previous letter campaign, new workers learned about the content of the campaign when starting their shift. Both types of workers knew that the phone campaign was a one-off job and, hence, that there were no further employment opportunities.

Due to the short-term nature of the job, 91.5 percent of all workers were students, covering a wide range of subjects studied. The average age was 24.4 years (max.: 57 years). The remaining workers were either part-time employed, housewives, or retirees. For summary statistics, see Appendix D1.

*The Task*

All workers were hired by a research institute that is affiliated with a local university and carried out the task in regular university offices which were especially prepared for the conduct of the phone campaign. The task was to interview people about their previous volunteering activities and invite them to become new volunteers (see Appendix A1 for the questionnaire). In addition, interested individuals were offered the option to receive a complementary information package from the volunteering agency by mail.

A single shift lasted for two hours ―the total time which was at workers’ disposal for the phone calls― plus an approximately five-minute introduction. A fixed wage of 20 Euro was paid. Based on the times workers stated to be available during their registration, we randomly allocated them to one out of three shifts per day (morning, noon and afternoon). To prevent disturbing noises from other interviewers and peer effects on effort provision (see e.g. Falk and Ichino 2006), workers were seated in single offices, identically equipped with a phone, a clock to keep track of the time of an interview, a list of the phone numbers to call and a sufficient number of questionnaires (for a picture of a workplace station see Appendix A2).

We received a list of pseudo-randomly generated phone numbers according to the widespread and generally recognized Gabler-Häder method (see Häder and Gabler 2009) provided by the GESIS Institute Mannheim, which offers this service to parties interested in obtaining representative samples for phone surveys. Due to the randomness in the creation of the phone lists, a large fraction of numbers is non-existent. For each called phone number, we asked workers to indicate whether it does not exist, no one answered the phone after exactly 10 rings, a telephone answering device (tad) answered the call, the line was busy, the interviewers were asked to call back later on, an interview was denied or an interview was completed (see Appendix A3 for an exemplary list). To guarantee the greatest possible comparability, all workers were told that the interviews should not exceed 5 minutes (and interviews lasted on average for 3 minutes).

The particular work task made it easy for us to check workers’ stated output (number of dialed numbers and completed interviews). First, we dialed every third number that was declared to be non-existent to check whether it was indeed non-existent.[[7]](#footnote-7) Second, all calls which have gone through ―either to the tad or to a potential respondent― were registered on the phone records with the called phone number, the day of the call, the exact starting time and length of the call. Hence, we were able to check whether the phone number stated on the completed questionnaire was indeed contacted at the stated time and whether the call was sufficiently long to conduct a complete interview. Thereby, we detected inconsistencies for one worker who was then excluded from our analysis so that we end up with a total of 70 workers.[[8]](#footnote-8) At the end of a shift, workers were paid and asked to fill out a short questionnaire on their work experience (see Appendix A4).

In total, 9814 calls were made (including non-existent numbers) and 388 individuals agreed to be briefly interviewed. We focus on two outcome variables: the total number of dialed phone numbers as a pure quantitative measure of effort, and the number of completed interviews as a qualitative measure. It has to be noted that the latter is a small number and depends, to a certain extent, also on interviewers’ luck, so it is a rather noisy measure.

*Treatments*

Our experimental design consists of two groups that we created by randomly assigning workers (we stratified on being a returning or new worker) to either receive information regarding the failure of the first campaign (treatment group, *N*=36) or not receive any information on the previous campaign (control group, *N*=34). At the beginning of their shift, every worker received a welcome letter that made the goal of this project, which was to recruit new volunteers, clear for them. Compared to the control group, the letters differed in that the negative information treatment group received additional information on the failure of the previous campaign in their letters. The information was provided in written form to avoid the possibility that even minor differences in the mood of the deliverer of the bad news could affect individuals’ reaction. To guarantee that workers indeed noticed and read the message, they were asked to fill out a form at the bottom of the information letter. The letters were signed by the project leader.

Given that the use of charismatic and identity leadership tactics can significantly enhance work motivation and it is in the leader’s interest to have the most motivated workforce, both the control and the treatment group letters were inspired by charismatic and identity leadership theories. In order to craft ‘a sense of us‘ and to address the sentiments of the collective, we used formulations such as “We are pleased that you have found the time to assist us…” and “Now, we are looking forward to your active support!” (for the complete letters, see Appendix A5). The information on the failure of the previous campaign was given in a similar manner: “Unfortunately, the first round of the project was not nearly as successful as we have hoped it would be.” Due to the limited subject pool of 70 workers, we refrained from implementing a third treatment manipulating the use of leadership tactics with which we could have investigated the role of leadership itself. Rather, we analyze the impact of failure information in a realistic workplace setting characterized by the use of established leadership tactics to foster and preserve work motivation.

*Results*

For all statistical analyses in this paper we used STATA (Version 14). We start by analyzing the number of calls made during a two-hour shift as a pure measure of performance. On average, interviewers in the control group dialed 129.79 numbers, whereas those in the treatment group dialed a statistically significant larger amount of 145.19 numbers (Wilcoxon rank-sum test, *z*=-2.057, *p*=0.040). These numbers offer first evidence that providing information on past organizational failure increases work performance rather than dampening it.

We next turn towards regression analysis to check the robustness of this result. Since our effort measure is a count variable and its variance is much larger than its mean, we use negative binomial regressions.[[9]](#footnote-9) Results in terms of incidence rate ratios are displayed in Table 1.

**Table 1: Main regression results**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | |  | | |  | |
| *Dependent variable:* Amount of numbers called | | | | | | | | |
|  | | | (1) | | (2) | (3) | | (4) |
| Neg. information treatment | | | 1.119\*\* | | 1.147\*\*\* | 1.123\*\* | | 1.146\*\* |
|  | | | (0.058) | | (0.057) | (0.054) | | (0.075) |
| Age | | |  | |  | 0.995\* | | 0.994\* |
|  | | |  | |  | (0.003) | | (0.003) |
| Female | | |  | |  | 1.011 | | 1.009 |
|  | | |  | |  | (0.057) | | (0.056) |
| Volunteer | | |  | |  | 0.958 | | 0.960 |
|  | | |  | |  | (0.051) | | (0.051) |
| Returning workers | | |  | |  | 0.913\* | | 0.934 |
|  | | |  | |  | (0.044) | | (0.070) |
| Treatment | | |  | |  |  | | 0.956 |
| *x* returning worker | | |  | |  |  | | (0.095) |
| Constant | | | 129.794\*\*\* | | 142.825\*\*\* | 165.835\*\*\* | | 167.114\*\*\* |
|  | | | (5.500) | | (10.553) | (19.530) | | (19.251) |
| *Further Controls:* | | |  | |  |  | |  |
| Organizational controls | | | - | | 🗸 | 🗸 | | 🗸 |
| **Observations** | | | 70 | | 70 | 70 | | 70 |
| **Pseudo R2** | | | 0.007 | | 0.019 | 0.028 | | 0.029 |
| **Prob >** | | | 0.029 | | 0.025 | 0.001 | | 0.000 |
|  |  |  | |  | | |  | |

*Notes:* The table reports incidence rate ratios obtained from negative binomial regressions (robust standard errors in parentheses). Organizational controls include dummies for time of the day (morning, afternoon, evening) and the offices in which the interviews took place. Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

The incidence rate ratio for treatment gives the relative performance of those who have received the information compared to the control group. For specification (1), we find that the treatment group performed 11.9 percent better than the control group (p=0.029). Specification (2) contains organizational controls for the time of the day (to account for differences in the probability of reaching possible interviewees) and the offices in which the interviews took place (to account for the possibility that e.g. a telephone keyboard might not have worked properly and slowed the worker down). In specification (3), we add controls for age, gender, and being a returning worker. Moreover, we add a binary variable for individuals’ private engagement in volunteering activities since they might be especially motivated to support the volunteering agency ―which is, however, not confirmed by our data.

We find that the observed treatment effect is quite stable and remains statistically significant across these specifications: being informed about the failure of the previous campaign increases the amount of called numbers by about 12 percent. Adding further controls for the day of the week barely changes our main result: the estimated IRR is 1.108 with *p*=0.029.[[10]](#footnote-10)

One might hypothesize that there could be a difference between returning and new workers due to their previous work experience and the possibility of building up an employer-employee relationship. We observe a somewhat smaller number of calls dialed by returning workers, but the data does not provide any evidence that returning and new workers are heterogeneously affected by the treatment (column 4 of Table 1). However, it could be possible that the treatment response of returning workers depends on their expectations of the success of the letter campaign, that is, workers with higher expectations might experience more disappointment from finding out the bad news. Since the number of observations gets very small when solely looking at returning workers, we do not apply regression analysis to look into this issue. Instead, we look at the average performance of returning workers separately for those having low and those having high expectations (based on a median split). In both groups ―workers with low and high expectations about the previous project’s success― we find that treated workers’ average amount of numbers called is (at least descriptively) higher.[[11]](#footnote-11)

In a next step, we look at the number of completed interviews, which can be perceived as an indicator of a worker’s quality of output. The treatment group completes on average 6.1 interviews, which is roughly one interview more than the number of interviews in the control group (on average 4.9 interviews). While this difference is statistically insignificant at the conventional levels (Wilcoxon rank-sum test, *z*=-1.620, *p*=0.105), it does indicate that the higher performance in terms of dialed numbers in the treatment group did not come at the expense of lower quality in terms of completed interviews. To check whether this result also holds using regression analysis, we re-estimate our basic specifications (1) to (3) with the number of completed interviews as the dependent variable, employing Poisson regressions. Table 2 reports these results.

**Table 2: Treatment effect on work quality**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | |  | |
| *Dependent variable:* Number of completed interviews | | | | | |
|  | (1) | | (2) | | (3) |
| Neg. information treatment | 1.237\*\*  (0.132) | | 1.223\*\*  (0.122) | | 1.192  (0.128) |
| Further controls: |  | |  | |  |
| Organizational controls | - | | 🗸 | | 🗸 |
| Socio-demographics | - | | - | | 🗸 |
| **Observations** | 70 | | 70 | | 70 |
| **Pseudo R²** | 0.013 | | 0.041 | | 0.054 |
|  |  |  | |  | |

*Notes*: The table reports incidence rate ratios from Poisson regressions (robust standard errors in parentheses). The likelihood-ratio tests did not reject the hypothesis that α=0 and, hence, the Poisson model is preferred over the negative binomial model. Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

The first two specifications confirm that there is also a positive treatment effect on work quality, whereas in specification (3) the effect is marginally insignificant (*p*=0.102). Even though the statistical significance is not as robust as in Table 1, the economic significance of the treatment on worker performance is even more pronounced: The number of completed interviews is higher by almost 20 percent.It has to be noted that an interviewer who completes many interviews will have less time left to dial numbers. To account for this, we also apply a time-adjusted measure for the number of calls to check the robustness of our previous results. We do this by calculating the average number of calls within one minute. Therefore, we subtracted the time spent interviewing ―obtained from official phone records. Subsequently, we divided the number of calls by this remaining time. In the control group, we find an average of 1.24 numbers per minute, while in the treatment group an average of 1.42 numbers, indicating a very similar pattern as above (Wilcoxon rank-sum test, *z*=-2.327, *p*=0.020).[[12]](#footnote-12) In fact, using the same basic specifications (1) to (3) as before, regression analysis reported in Table 3 again yields a highly stable and statistically significant positive effect of the information treatment on the time-adjusted measure of effort.

**Table 3: Time-adjusted effort measure**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | |  | |
| *Dependent variable:* Amount of called numbers per minute | | | | | |
|  | (1) | | (2) | | (3) |
| Neg. information treatment | 0.181\*\*  (0.069) | | 0.204\*\*\*  (0.068) | | 0.187\*\*\*  (0.069) |
| Further controls: |  | |  | |  |
| Organizational controls | - | | 🗸 | | 🗸 |
| Socio-demographics | - | | - | | 🗸 |
| **Observations** | 70 | | 70 | | 70 |
| **Adjusted R²** | 0.080 | | 0.145 | | 0.162 |
|  |  |  | |  | |

*Notes*: Due to the calculation of the dependent variable, we do not have a count variable anymore. Consequently, the table reports OLS coefficient estimates (robust standard errors in parentheses). Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

Recall that at the end of the shift, we asked workers to provide additional ideas of how to recruit new volunteers in the feedback sheet. What we find is that treated workers exert higher effort also on this voluntary activity. On average, workers in the treatment group provide 2.03 ideas, whereas workers in the control group offer only 1.21 ideas (Wilcoxon rank-sum test, *z*=-2.389, *p*=0.017). The same is true when we use the number of words written as a measure of performance.[[13]](#footnote-13)

*Discussion*

To sum up, we find no evidence of a negative, demotivating effect of past organizational failure on work performance in an environment in which leaders make use of tactics based on identity and charismatic leadership theory in order to foster and preserve work motivation. On the contrary, we find a highly robust and economically significant positive impact of the negative information treatment on workers’ performance, also on activities that take place beyond their paid working time (i.e. ideas how to recruit volunteers in future). Even if workers, especially the returning ones who might have firmly believed in the project’s success, have good reasons for being disappointed when learning about the past failure, they performed better than workers in the control group.

With the data at hand, we cannot rule out that the information about past failure signals that the goal of the project is hard to achieve and the effort of a single employee contributes only marginally to goal achievement as well as to the surplus of the employer from the work relation. This could lead workers to perceive the paid wage (above minimum wage) as more generous and reciprocate their payment by exerting higher effort (Falk et al., 2006; Gneezy and List, 2006; Hennig‐Schmidt et al., 2010). Similarly, the workers could simply reciprocate the employer’s open and transparent communication, as suggested by Brandes and Darai (2017).

To examine the possibility that the previous results can be attributed to fairness concerns between employees and their employer, we ran a supplementary experiment which was not based on an employment relationship and participants’ performance was not compensated, so that this type of motivation can be ruled out. Furthermore, the additional experiment allowed us to test whether our results are robust to both a larger sample size ―which is clearly a drawback of this first experiment― and a somewhat different setting.

**Field Experiment II**

*Experimental design*

The context of the second experiment relates to a local student campaign to collect signatures in support of a citizens’ initiative combatting food waste in another medium-sized city in Germany.[[14]](#footnote-14) We set the goal for the campaign to collect 12,500 signatures.[[15]](#footnote-15) This had the advantage of maintaining comparability to the goal in the letter campaign of Experiment I, and was also deemed reasonable by the national campaign’s initiator based on his previous experience. After the campaign came to its end, only 380 individuals signed the petition, which was 3% of the defined goal. In December of 2015, we followed up on this campaign with a second drive to raise awareness about the cause and used this occasion to conduct a second field experiment about the impact of information on past failure.

The field experiment took place at the end of a compulsory lecture on social services management of the local university. In preparation of the next lecture which was supposed to deal, among other contents, with the use and characteristics of petitions, students received written information about the food waste campaign. Depending on whether they were sitting on the left or on the right part of the large lecture hall with a broad corridor in between, students did (or did not) receive an additional piece of information about the missed signature collection target of the initial campaign ―again resulting in a control and a negative information treatment group (see Appendix B1). Then, people answered several survey questions (e.g., about their interest in the food waste topic and on petitions in general) and specified their age and gender (see Appendix B2). This information was used to present some correlations as thematic introduction to the next lecture. Afterwards, we gave students the opportunity to voluntarily stay within the lecture hall (without the presence of the lecturer) and to write a petition letter (prepared forms were distributed, see Appendix B3), which would be sent to the European Commission in Brussels to impact decision-making, without informing them about the experimental conduct. Students were told to leave the material at their seat when leaving the lecture hall and an assistant collected everything after everyone had finished. This procedure enabled us to match the letters to the individual data collected in the survey.

The wording of the written information about the food waste campaign was very close to the wording used in the first field experiment ―such as, the repeated use of “we” or the “unfortunate(ly)” outcome of the previous campaign. Given that not all students are aware of the purpose of writing a petition letter, we ended the information letter with “If enough citizens call for a law in the legislative program that forces supermarkets to donate the food they would throw away otherwise, the European Commission cannot ignore this claim”. Besides being a reasonable argument for writing a petition letter, this sentence additionally serves as an emotional appeal, which a charismatic leader might make (i.e. the head of the chair for Business Administration). Again, we do not investigate the impact of charistmatic or identity leadership ―the two apporaches are implemented in both the control and the negative information treatment group― but only the impact of failure information in an environment in which the management draws upon such leadership techniques in order to promote their projects.

Note that in this study, we were not able to implement a classical randomization approach to allocate students into the two experimental groups. As we wanted to avoid raising any suspicions, we could neither have adjacently seated students receiving different instructions nor randomly allocate students to a seat in the room, so that the allocation to the experimental groups had to be done on the basis of the geographic positioning of the students in the class. However, any differences in observed characteristics between the two groups as regards their observed characteristics (see Table D1 in the Appendix) will be controlled for in the regression analysis, while we also conducted additional analyses of certain subgroups. Nevertheless, self-selection based on unobservables into the left and right part of the lecture hall cannot be excluded, even though there is no clear hypothesis of how this should influence the observed treatment effect.

*Results*

In total, 157 university students (76.2% female) with an average age of 20.9 years (max.: 36 years) took part in the study.[[16]](#footnote-16) Table 4 summarizes the treatment’s impact on the share of participants deciding to write a letter, the number of words written ―both unconditionally and conditionally on writing a letter―, and further ideas of how one could alternatively support the campaign which we obtained in the end-of-study survey.

**Table 4: A rise in the participation rate as driver of the treatment effect**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Control | Treatment | Test statistic | *p*-value |
| Share of students writing a letter | 0.582 | 0.756 | 5.373 | 0.020 |
|  |  |  |  |  |
| Number of words | 56.709 | 82.859 | -2.284 | 0.022 |
| …conditional on writing a letter | 97.301  *(N=46)* | 109.542  *(N=59)* | -0.659 | 0.513 |
|  |  |  |  |  |
| Number of ideas | 0.278 | 0.526 | -1.040 | 0.295 |
| *N* | 79 | 78 |  |  |

*Notes*: The test statistics and correspsonding *p*-values are obtained from Wilcoxon rank-sum tests and Chi-squared tests, respectively.

Given that writing a petition letter was done on a voluntary basis without any monetary incentives, it is perhaps not surprising that roughly one-third of all individuals was not interested in writing a letter. We do, however, observe a statistically significant difference between the two groups, with only 58.2% of the students writing a letter in the control group whereas 75.6% did so in the negative information treatment group. When comparing the average number of words written, we also observe a significantly higher number in the treatment group, by almost 50%. This positive treatment effect is due to the rise in the number of students who wrote a letter since the difference in the number of words written conditional on writing a letter. Even though statistically insignificant, the average number of ideas how one could alternatively support the campaign shows the same patterns as the share of students writing a letter and the average number of words written.

Given that the share of females is significantly higher in the treatment group (Chi-squared test, (1)=4.189, *p*=0.041), one might hypothesize that there is no real treatment effect but the difference is only due to females being more engaged than men. However, we find almost identical numbers for females only,[[17]](#footnote-17) so that the treatment effect is unlikely to be driven by the allocation of individuals into control and treatment group. Regression analysis (see Appendix D3), which controls for the individual’s knowledge about the campaign, whether they are privately engaged for waste reduction, whether other petition letters have already been written, the individual’s age and gender, confirms the previous findings as regards our main outcome measures.

*Discussion*

For this study, it was not possible that participants work in isolation. Hence, social image concerns may be active. If participants, however, are concerned about how denying to help a good cause will be perceived by their classmates then these should be present in both treatment groups. Moreover, the students sitting around might easily observe whether someone decided to write a letter or not but it is harder to observe how much effort they exactly exerted so that one probably could expect a lower number of words if this suggestion was true. Taken altogether, the analysis of behavior from experiment 2 confirms the findings from experiment 1. Hence, the positive performance effect of the bad news is neither a result of a small, unrepresentative sample nor is the effect driven by paying a rather generous wage as this was the case in the preceding experiment.

Whereas natural field experiments provide empirical evidence with high external validy given the naturalness of the task, the setting, and the people doing the tasks, this valuable naturalness is at the same time a barrier towards complete clarification. First, both studies took place in a charity context so that we cannot rule out that the observed effects were mainly caused by the specific context. Second, the field studies did not allow ―without the use of deception― to investigate how the negative information effect compares to information in more general (i.e. a positive information about past organizational performance). Finally, the main purpose of this second experiment was to test the robustness of the results of experiment 1. Consequently, the information letters of both the control and treatment group contained again elements inspired by charismatic and identity leadership theories. The limited number of subjects prevented us from conducting additional treatments with which we could investigate the role of leadership tactics and whether it matters *how* a leader communicates the information about the past. Therefore, the two field experiments do not inform us about the question whether bad news about past organizational performance would also have a positive effect in a neutral non-leadership condition. Hence, we designed a third study where we address all these questions by using a survey experiment based on vignettes. Specifically, the aim of the survey experiment is to (i) directly test for the role of employing leadership tactics by introducing a ‘no leadership’ condition; (ii) test for a possible difference between negative and positive information, (iii) test for whether the work setting matters by introducing a for-profit setting.

**Online survey experiment**

*Experimental design*

The 557 participants were recruited via an university-wide call for participation in a short paid online survey experiment. In total, we have eight different hypothetical workplace scenarios and each participant was randomly allocated to one of these. The scenarios describe typical situations in which a manager assigns a task to a new employee (for the exact wording, see Appendix C1 and C2). We applied a 2x4 between-subjects design with two different workplaces (non-profit vs. for-profit) and four different information sets regarding the success of a previous campaign (*no information, negative information, negative information with neutral framing,* and *positive information)*. The non-profit setting is nearly identical to the one analyzed in Study 1. We added a for-profit setting ―in which a food trading store is running a campaign to promote a new regional product line― in order to test whether the performance effects of bad news depend on the sector in which the organization is operating in.

In the treatment group *negative information,* we give the information that previous efforts within this campaign have unfortunately failed in that only a small number of potential volunteers have agreed to receive an information package (non-profit setting) or only a few customers requested the free sample (for-profit setting). By incorporating charismatic and identity leadership tactics, we replicate our main experimental treatment in studies 1 and 2. In the *negative information with neutral framing* group, we communicate the same information as before but this time without the use of any leadership tactics. Without addressing the sentiments of the collective, as suggested by the theoretical perspectives of charismatic and identity leadership, we expect the message to lose substance and the positive performance effect of bad news to vanish. Again, we compare both negative informationsituations with the one in which no information at all was given about the failure or success of the previous campaign (i.e. control group).

Finally, we were also interested in how the effect of negative informationcompares to providing information in more general. To test whether similar effects can be observed in case of providing information about good past organizational performance, we implemented a situation in which we give this *positive information* with analogous framing to the *negative information* treatment group (i.e. the use of charismatic and identity leadership tactics).

Again, our variable of interest is individuals’ work effort. This time, we measure it by using the original subscale of the Intrinsic Motivation Inventory (Ryan, 1982), a multidimensional measurement device intended to assess participants’ subjective experience related to a target activity in laboratory experiments. We use the five respective items and ordered them randomly (see appendix C1 items 1, 4, 9 (R), 11, and 12 (R)). Item 4, for example, reads “I try very hard on this project”. Participants indicated on a 7-point scale whether it does not apply at all (=1), fully applies (=7) or somewhat in between. After reversing the score of items which are labeled with an (R), we calculated the subscale score for effort by averaging across all five items.

Afterwards, we implemented the incentivized elicitation method of social norms as proposed by Krupka and Weber (2013). We asked participants to imagine ―based on their respective job scenario― that they were on sick leave and the supervisor asked a colleague to work a double shift but the colleague refused due to personal reasons. Participants then had to state whether this behavior would be socially inappropriate, somewhat inappropriate, somewhat appropriate, or appropriate. If their judgment was identical to the judgment of the majority of participants in the respective treatments, they were paid 5 EUR. This part served two purposes. First, participants knew that they did not receive a fixed payment for participation but that it would be determined within the course of the survey. With this feature we intended participants to read the workplace scenarios more attentively and to take the whole questionnaire more seriously. Second, the obtained data allows us to check whether social norms (i.e. the belief that the social norm is to work harder for a project that seems to be at risk) differ between the for-profit and the charity context in order to explain a potential heterogeneity between the two.

*Results*

The average stated effort of all 557 participants is 5.087, with 7 as the highest possible effort level. Table 5 summarizes subjects’ stated effort across all treatment groups.

**Table 5: Stated effort by treatment group**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Control group | Negative *information* | Neg. *information*, neutral | Positive *information* |
| Charity scenarios: |  |  |  |  |
|  | 5.003 | 5.297 | 5.037 | 5.266 |
| *N* | 73 | 70 | 70 | 70 |
| For-profit scenarios: |  |  |  |  |
|  | 5.226 | 5.064 | 4.774 | 5.026 |
| *N* | 69 | 66 | 69 | 70 |

*Notes:* Based on Wilcoxon rank-sum tests, there are no statistically significant differences between the groups.

In contrast to the two experiments before, there is no statistically significant effect of providing failure information, neither in the charity setting (Wilcoxon rank-sum test, *z*=-1.416, *p*=0.157) nor in the for-profit scenario (Wilcoxon rank-sum test, *z*=0.395, *p*=0.693). Looking at OLS regression results in which we control for some observable characteristics (see Table 6), the point estimates remain insignificant, but while the estimate for the for-profit scenario is negative and very small in size, it is bigger and positive for the charity setting ―so that at least the overall direction seems to be consistent with our previous results. Consistent with the overall literature on individual relative performance feedback, there is no difference between giving positive and negative information*,* neither in the charity nor in the for-profit scenarios.

**Table 6: OLS regressions**

|  |  |  |
| --- | --- | --- |
| *Dependent variable*: Participants’ stated effort | | |
|  | Charity Scenarios | For-profit Scenarios |
|  | (1) | (2) |
| Negative information | 0.251  (0.195) | -0.053  (0.219) |
| Negative information, neutral wording | 0.053  (0.211) | -0.407\*  (0.217) |
| Positive information | 0.251  (0.188) | -0.149  (0.198) |
| Constant | 5.127\*\*\*  (0.636) | 4.023\*\*\*  (0.350) |
| **Observations** | 281 | 271 |
| **Adjusted R²** | 0.043 | 0.068 |
|  |  |  |

*Notes:* The table reports point estimates obtained from OLS regressions (robust standard errors in parentheses). Additional control variables include subjects’ age, gender, n° of terms enrolled, having a job and private engagement in volunteering activities. Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

In case of neutrally framing the negative information, we observe a drop in stated effort compared to the control group, at least in the for-profit context. The OLS results support this observation and show only for the negative information, neutral wording treatment group a (marginally) significant and negative point estimate (*p*=0.062). This result can be seen as a preliminary indication that our findings in studies 1 and 2 are influenced by the use of charismatic and identity leadership tactics.

Finally, we check whether the observed heterogeneity between the two contexts could be driven by different perceptions of social norms as regards working hard for a project that seems to be at risk. 73.61% of all particpants believe that it is either socially inappropriate or somewhat inaapropriate to refuse to work a double shift in such a situation. These perceptions, however, do not differ between the for-profit and the charity scenarios, neither for the pooled sample of all participants (Wilcoxon rank-sum test, *z*=0.711, *p*=0.477) nor in case of comparing only the two control groups (Wilcoxon rank-sum test, *z*=-0.353, *p*=0.724).

*Discussion*

The use of the vignette methodology allowed us to investigate different scenarios at the same time in order to shed light on the specific shortcomings of the two field studies. Self-reported measures, however, suffer from well-known problems such as the uncertainty whether intentions will ultimately translate into real actions (Lonati et al., 2018). Moreover, given that such hypothetical scenarios do not have real-world consequences, self-reported measures might be particularly prone to experimenter demand effects, cheap talk, or a social desirability bias. Nevertheless, the observed pattern of stated willingness to exert effort in the charity context is comparable to the results obtained from the two field experiments (even though statistically insignificant). Hence, this vignette study should be interpreted as a robustness check of the two field studies as well as guidance for future research.

**Concluding Remarks**

In this paper, we examined the effect of information about past organizational failure on follower performance in two field experiments and an online survey experiment. The two field experiments showed that the bad news increased workers’ productivity compared to a control group that did not receive this particular information. In order to maximize the success of the two campaigns, the wording of all information letters, i.e. for both the control and treatment groups, was inspired by charismatic and identity leadership theories. Consequently, the role of leadership tactics themselves could not be investigated. Moreover, both field experimentes were conducted in a charitable setting, raising the question of whether the observed results would also carry over to a for-profit setting. Hence, we conducted an online survey experiment as an additional robustness check and to explore the questions that were left open. We find that the failure information was not detrimental to performance in both the charity and the for-profit setting if leadership tactics were used. The results for the treatment in which the failure was communicated without the use of leadership tactics are less clear cut but indicate that these tactics may be an important moderator for the effect of the provided information on performance. Hence, leaders are very well advised to think about how to communicate information about the past.

As regards psychological mechanisms that might drive the positive treatment effects in the non-profit settings, there are a few candidates that we discuss here. One possibility could be that workers are driven by a sunk cost effect (Thaler, 1980). That is, workers raise effort in a second campaign to recoup the effort they invested in the first unsuccessful campaign. However, this mechanism would explain a treatment response only for workers who were already involved in this first attempt. The fact that we also find a treatment effect for new workers in study 1, and that in studies 2 and 3 nobody was involved in the previous failed campaign, suggests that a sunk cost effect cannot be the main explanation for our findings. By conducting the vignette study, we can also exclude any reciprocal concerns that might influence individuals’ behavior, since in this context there is no monetary incentive or actual employment relationship to engender reciprocal concerns.

Nevertheless, we cannot rule out many other underlying mechanisms. Future research might assess, for example, whether information about past failure motivates followers to become more empathetic toward an unsuccessful project leader or whether followers want to show that they are able to achieve a goal others did not. Another possibility is that the management’s willingness to carry out a second campaign, despite the initial failure, signals to the worker that the job is more valuable than initially thought. Especially in environments in which there are informational asymmetries between the leader and their followers regarding aspects of the project (for instance, how difficult the task is), followers make inferences from actions and signals of the leader such as the leader’s choice of compensation structure (Benabou and Tirole, 2003; Ellingsen and Johannesson, 2008; Kamenica, 2008, 2012; Bremzen et al., 2015). Thus, bad news about past failures could translate into good news about the meaning of work, which has been shown to act as a strong motivator for workers (Ariely et al., 2008; Grant, 2008; Chandler and Kapelner, 2013; Kosfeld et al., 2017; Chadi et al., 2017), similar to the job’s mission (e.g. Besley and Ghatak, 2005; Tonin and Vlassopoulos, 2010, 2015; Carpenter and Gong, 2016). Further research could examine whether this mechanism is activated when a leader transmits bad news (such as organizational failure) to followers.

*Implications for theory and practice*

The observed performance effect found in studies 1 and 2 is likely to be only the lower bound of the impact that charismatic and identity leadership can have. Hogg (2001), for example, stresses the role of depersonalization within such group phenomena, i.e. assimilation of attitudes, feelings and behaviors to the ingroup. Besides identity prototypicality (i.e. ‘be one of us’), identity advancement, identity entrepreneurship and identity impresarioship are similarly important in order to mobilize followers (for an overview, see Steffens et al., 2014). These aspects are, due to the one-shot nature of our experiments, not part of our study. Moreover, especially charismatic leadership does not only work via content or verbal techniques, but also via non-verbal techniques such as body gestures or facial expressions (for charismatic leadership tactic examples, see Antonakis et al., 2011) which are not part of our study, either, since the information was provided only in written form. Obviously, neither our information letters nor the vignettes were designed as a one-to-one application of either identity or charismatic leadership. Testing whether workers’ performance is differently affected by the various types of leadership tactics, or interactions thereof, was beyond the scope of this paper. A more in-depth analysis, however, would not only be a fruitful avenue for future research but also important for practitioners in order to give guidance how to optimally deal with such situations.

Our results have implications for human resources policies and practices of firms as well as for charitable organizations that rely on the contributions of volunteers. The message of this research is that disclosure of information on past organizational failure does not do any harm; under certain circumstances it can even raise the subsequent performance of workers or volunteers and therefore, managers should adopt practices that facilitate transparency ―especially since employees appreciate organizational transparency (Norman et al., 2010; Brandes and Darai, 2017; Schnackenberg and Tomlinson, 2016; Jehiel, 2015). Furthermore, study 3 offers insights as to the conditions that are conducive to failure information leading to improved performance. In particular, information containing cues that address sentiments of the collective seems to be crucial. Besides thinking about how to communicate information about the past, it thus seems to be worthwhile for leaders to continuously strengthen the group identity within their work teams.

The importance of how the failure is communicated speaks even more in favor of increasing transparency in the leader-follower communication. If the information reaches the employees without the intent of the leader ―especially long-term employees might be able to retrieve the information through other channels― subsequent performance might drop solely because of the missed induction of group identity feelings, which could have been prevented easily. Taking additionally into account the strategies that are already discussed in the literature to deliver bad news in organizations (for an overview see Bies, 2013), the disclosure of unfavorable information should not be perceived as a threat but as a chance.

*Limitations and further research*

While our focus on worker performance and motivation originates in organizational and behavioral economics (Camerer and Malmendier, 2007), by integrating insights from identity and charismatic leadership into our experimental design we contribute to the call to build a bridge between economics and the leadership literature (Zehnder et al., 2017; Garretsen et al., 2020). Thus far previous literature has demonstrated that leadership research can be productively combined with economics to understand cooperation and coordination in organizations (e.g. Brandts and Cooper, 2007; Kosfeld, 2020). Our paper illustrates that combining an experimental design that allows for clear identification of causal links with notions of identity research is a fruitful approach to understand how leaders can overcome failure in organizations and more broadly maintain a motivated workforce in the face of adversity. We hope that our insights stimulate the leadership research community to examine the role of information as a leadership tool more closely by applying experimental methods and relying on measuring actual behavior.

Even though our experimental approach has the significant advantage of being able to credibly identify causal effects (Antonakis et al., 2010), no study is without limitations. One is that our participants are for the most part university students. Given that young, female and highly educated individuals are on average most optimistic (Gallagher et al., 2013) ―and optimism might somehow interact with the reaction to failure information―, it would be reasonable to carry out similar field experiments with a more diverse pool of participants. Second, the nature of the employment relationship in study 1 and of the task in study 2 is short term, it would be interesting to assess how long-lasting the positive performance effect (if existing) is. Third, the setting of our two field experiments is one involving a prosocial mission. Although study 3 provides some supporting evidence, we believe that it would be important to examine in a natural setting whether the result we obtained carry over to workplaces in which the project generates primarily private benefits for the employer.

*Conclusion*

Failure in organizations is a very common and complex phenomenon. One challenge for leaders is to understand whether information about failure may have a demotivating effect on current and future work performance and the factors that moderate this effect. This paper takes a first step at addressing these issues. The empirical findings suggest that failure does not necessarily impact future performance negatively, they also point to measures that leaders can take when communicating the news to prevent a potential performance reduction.

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Appendix

Appendix A: Experimental design and procedures of Experiment I

A1. The phone survey questionnaire

Phone nr.: 0651- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Time of day: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Gender of interviewee: female male

*Hello, my name is \_\_\_\_\_\_\_\_\_\_\_\_\_\_. I’m calling you on behalf of the IAAEU, Trier University. In cooperation with the volunteering agency in Trier, we conduct a short survey within the city as regards the local population’s volunteering activities. We would highly appreciate your support. Do you have about 3 to 5 minutes to answer some questions?*

⃝ Interview will be conducted.

⃝ Receiver of the call rejects. *``Could you connect me with another person in your household who would be willing to answer some questions?“*

⃝ Yes, interview will be conducted with another person.

⃝ No, end of call.

⃝ Receiver of the call, or someone else in the household, wants to be called back later on: Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Time of day: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| **Volunteering activities so far** | Yes | No | Don’t know/  no answer |
| **Q1:** *Are you currently volunteering, e.g. in a sports club, at church, or a social organization?*  **🡪 If yes, Q1a next. If no, Q1b next.** |  |  |  |
| **Q1a:** *Where exactly, in which position and when did you start?*  **🡪 Continue with Q2!** |  | | |
| **Q1b:** *Have you been volunteering previously?*  **🡪 If yes, Q1c next. If no, Q2 next.** |  |  |  |
| **Q1c:** *Where exactly, in which position and for how long?*  If someone has had more than one position: Description of only one, the most important position (as perceived by the interviewee). |  | | |
| **Q1d:** *Why did you end your volunteering activity?* |  | | |
| **Q2:** *Have you already heard about the volunteering agency in Trier?* |  |  |  |

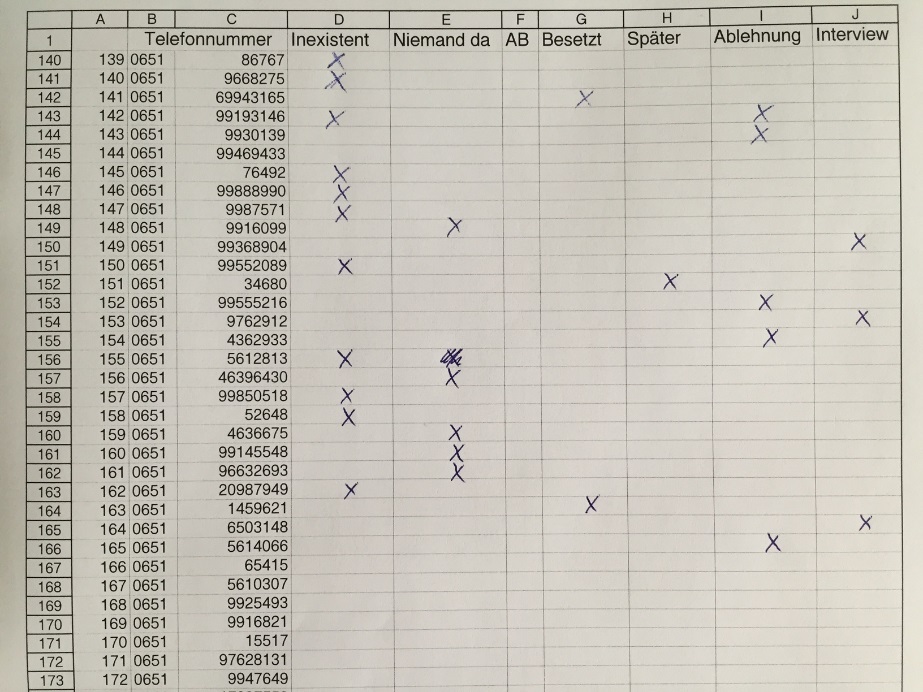
|  |  |  |  |
| --- | --- | --- | --- |
| *For your information:*  *The volunteering agency establishes contacts between social organizations/ initiatives and associations that are looking for volunteers. Hence, the agency is your contact for all ideas, questions and projects around volunteer work.*  *The ``heart“ of the agency is a database with which you can systematically search for individually matching honorary posts. Currently, there are more than 200 open posts. Most of these are directed to individuals who would like to engage regularly with about half a day per week.*  **Q3:***Probably, there is also a suitable position for you? Shall I tell you the internet address of the agency? I could also send you a free and non-binding information package by mail so that you can have a look at what the agency does and what they offer.* | | | |
|  | Yes | No | Don’t know/  no answer |
| Interviewee shows some interest. |  |  |  |
| Interviewee wanted to know the URL:  *www.ehrenamtsagentur-trier.de* |  |  |  |
| Free and non-binding information package  *“In that case, I need your postal address“:* |  |  |  |

*Thank you very much for the nice and informative conversation. Finally, I need some general information.*

|  |  |  |
| --- | --- | --- |
| **Socio-demographics** |  | Don’t know/ no answer |
| **Q4:** *How many persons live in your household, including yourself?* | \_\_\_\_ Adults  \_\_\_\_ Children |  |
| **Q5:** *In which year were you born?* |  |  |
| **Q6:** *Are you employed?* | **□** Yes □ No  If yes: *How many hours per week?* \_\_\_\_\_\_\_\_\_\_\_\_\_ |  |

A2. A representative office

A3. List of phone numbers



*Notes*: Workers had to indicate whether the phone number (column C) did not exist (column D), no one answered the phone(column E), a telephone answering device answered the call (column F), the line was busy (column G), the interviewers were asked to call back later on (column H), an interview was denied (column I) or an interview was completed (column J).

A4. Feedback sheet

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Disagree | | | | Completely agree | | | |
| I was very satisfied with the working conditions. | □ | □ | □ | □ | | □ | □ | □ |
| I felt uncomfortable calling unknown people. | □ | □ | □ | □ | | □ | □ | □ |
| Conducting the interviews was exhausting. | □ | □ | □ | □ | | □ | □ | □ |
| From my point of view, the paid wage was too high. | □ | □ | □ | □ | | □ | □ | □ |
| I feel co-responsible for the success of the recruitment campaign. | □ | □ | □ | □ | | □ | □ | □ |
| I tried to convince as many people as possible to stimulate enthusiasm about volunteering. | □ | □ | □ | □ | | □ | □ | □ |

What do you think: How many of the people you have been talking to today, will start volunteering?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What do you think: What is the overall success rate of both recruitment campaigns (the number of new volunteers in relation to the number of all contacted individuals, in percent)?

Success rate of the letter campaign before Christmas: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Success rate of the current phone campaign: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Have you already done a similar job (e.g. in a call center)? □ Yes □ No

If yes: What exactly have you done and for how long? Please describe.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Did you set yourself a goal you wanted to reach during your shift? If yes, please describe.   
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Do you have any further ideas how to support the volunteering agency in order to recruit more volunteers for the city and the surrounding region? Please list everything you come up with, even if it is difficult to implement or cost intensive.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A5. Welcome (and treatment) letters for interviewers

1. *Returning workers*

Dear Ms. XX,

we are pleased that you have found the time to assist us in our cooperation with the volunteering agency once again. As a follow up to last year‘s Christmas campaign, we would like to use short but numerous phone calls to raise the local population’s awareness for the volunteering agency and to gain new volunteers within the city and the surrounding region once again.

[*For negative information treatment group only*:

Unfortunately, the first round of the project was not nearly as successful as we have hoped it would be: from 12,500 letters stamped and sent, we received only 9 responses from people interested in volunteering. Hence, the success rate was less than 0.01 percent.]

Now, we are looking forward to your active support!

Best regards,

XX

Shall we inform you about the further development of the project by email?

* No thanks, I am not interested.
* Yes, I would like to stay informed.
* Yes, I would like to stay informed. Additionally, I would like to receive an information package on the agency by mail to the following address:

1. *New workers*

Dear Ms. XX,

we are pleased that you have found the time to assist us in our cooperation with the volunteering agency.

The project already started last year. In the course of a Christmas campaign, 12,500 local households were informed about the agency’s work and personal engagement possibilities by mail. As a follow up to that campaign, we would like to use short but numerous phone calls to raise the local population’s awareness for the volunteering agency and to gain new volunteers within the city and the surrounding region once again.

[*For negative information treatment group only*:

Unfortunately, the first round of the project was not nearly as successful as we have hoped it would be: from 12,500 letters stamped and sent, we received only 9 responses from people interested in volunteering. Hence, the success rate was less than 0.01 percent.]

Now, we are looking forward to your active support!

Best regards,

XX

Shall we inform you about the further development of the project by email?

* No thanks, I am not interested.
* Yes, I would like to stay informed.
* Yes, I would like to stay informed. Additionally, I would like to receive an information package on the agency by mail to the following address:

Appendix B: Field Experiment II

B1. Letters on the background of the campaign against food waste

Dear students,

we, the chair for Business Administration with the focus on Social Services Management, participate in a campaign against food waste with an own supporting project. In Europe, 80 million individuals live below the poverty line. Whereas many people struggle to feed their family day-to-day, supermarkets within the European Union toss out about 40 kilograms of food, each night.

In a first round of our project, we collected signatures within the city and the surrounding area for the petition “EU: Oblige supermarkets to donate unsold food!”. The lists of signatures will be handed over to the European Commission as soon as they discuss the law proposal.

*[For negative information treatment group only:*

Unfortunately, this first round did not meet the desired result of about 12,500 signatures. Although the campaign will end soon, we have only 380 signatures so far. This is just 3 percent of our self-set goal.]

Following this first round, we do not only want to collect signatures in a second round but we want to enforce this important matter by submitting a large number of petition letters.

Now, we are looking forward to your active support:

Please write some lines hereinafter that explain why you personally think it is important that the European Commission should increase efforts to control the waste of food. All letters will be transferred to the European Commission together with the lists of signatures.

Please note the following: A petition letter is more substantial and valuable the more diverse arguments you urge and the lengthier the letter is. Spelling and grammatical mistakes and illegible writing should be avoided. A signature below the letter is not necessary but it makes the letter more credible.

If enough citizens call for a law in the legislative program that forces supermarkets to donate the food they would throw away otherwise, the European Commission cannot ignore this claim.

B2. A survey on food waste and petitions in general

1. Did you already know the campaign?

yes no

1. How important is the topic food waste for you personally?  
   irrelevant Very important  
   1 2 3 4 5 6 7  
         
2. Are you, or have you been, engaged in this area (e.g. volunteering student initiatives private efforts)? If yes, please describe.  
     
   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Are you, or have you been, volunteering in general? If yes, please describe.  
     
   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How many petitions have you already signed?  
   0 1-2 3-5 more than 5

Have you already written a petition letter (by email or mail)?  
yes no

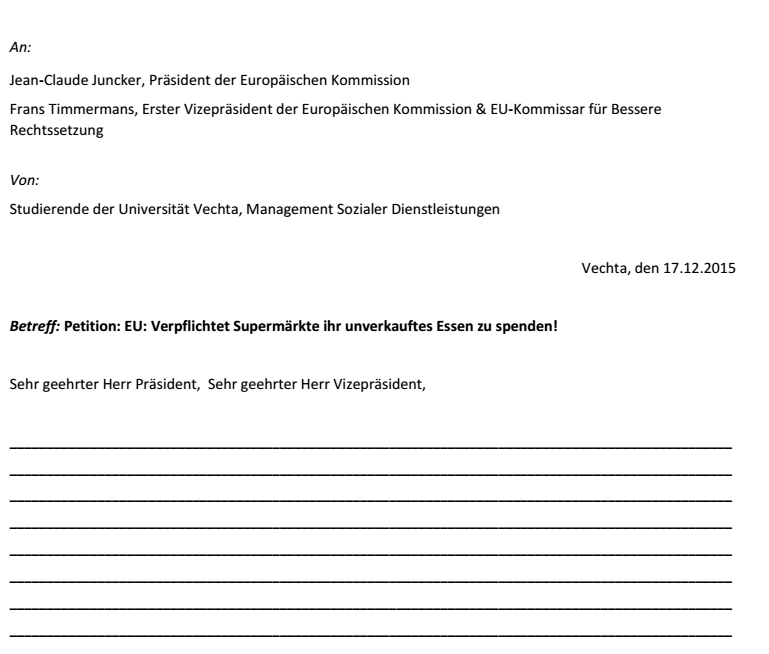
1. Please state how much you believe that a corresponding law will be passed (in percent, e.g. 10%, 50%, 90%)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Do you have any further ideas what we could do?  
     
   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

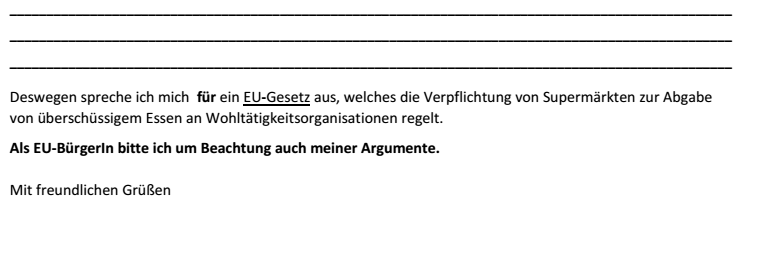
For statistical purposes:

Gender: female male other/ not specified

Age: \_\_\_\_\_\_\_ years

B3. The petition letter template (two pages in total)

…



**Translation of the template:**

*To:*

Jean-Claude Juncker, President of the European Commission

Frans Timmermans, 1st Vice-President of the European Commission and EU Commissioner for Better Regulation.

*From:*

University students

*Concerns:* Petition: EU: Obliging supermarkets to donate unsold food

Dear Mr. President, Dear Mr. Vice President,

That is why I am in favour of an EU law that regulates the obligation of supermarkets to give surplus food to charities.

As an EU-citizen I ask you to consider my arguments as well.

With kind regards

Appendix C: The Online Survey Experiment

C1. Instructions

Please read thoroughly the following text. Thereby imagine you are starting a new job in a regional volunteering agency/ food trading store today and the agency director informs you about your work.

*[Insert the different scenarios here]*

Please state for all of the following statements to what extent they are applicable for you in that job. (1= does not apply at all, 7= fully applies)

1. It is important to me to do well in this task. [effort]
2. I enjoy doing this activity very much.
3. I describe this activity as interesting.
4. I try very hard on this project. [effort]
5. I think that doing this activity is useful for my organization.
6. This job is fun to do.
7. I think doing this job could help me to feel useful.
8. I think this job is quite enjoyable.
9. I do not put much energy into this. [effort- reversed]
10. Doing this job is important because it can help to fulfill the organization’s goal.
11. I put a lot of effort into this job. [effort]
12. I dont’t try very hard to do well. [effort –reversed]
13. I think this is an important activity.
14. I would be willing to do this job again because it has some value to me.
15. This job is a pretty boring activity.

*[On the next screen]*

Now we ask you to judge the behavior described in this scenario. If your judgment is equal to the judgement of the majority of all other participants, you receive 5 EUR.

You are on sick leave on the last day of the project. The supervisor asks your colleague to stay for a double shift to get the best possible result out of the project. Your colleague is not willing to do that because of private reasons and leaves his workplace on time. The project is now finished.

The colleague’s behavior is…

…socially inappropriate

…somewhat socially inappropriate

…somewhat socially appropriate

…socially appropriate

*[On the next screen]*

Please also answer the following questions:

Gender: male, female, diverse

Age

Your field of study

Which degree are you aiming at?

Number of terms at this Universtiy

Do you have a job besides your studies? Yes/no

Are you engaged in volunteering activities? Each week, each month, less often, never

C2. The Scenarios

*Non-profit*

„Currently we are working on a campaign that aims at attracting new volunteers for charitable organizations within the city and the surrounding regions.

In this context, we already distributed about 10,000 letters. Thereupon, the recipients could request a free information package about the several engagement possibilities within our city, including a small gift.

Now we would like to follow up on this campaign and ask you to contact additional households via phone calls, offering the information package for the entry into volunteering work. It has been shown that lots of people indeed at least try out some volunteering activities if they are informed about the various possibilities.

[*Negative information*: Unfortunately, the previous letter campaign was not was not nearly as successful as we have hoped it would be: less than 10 individuals requested an information package and the number of volunteers has barely changed.]

[*Negative information, neutral wording*: The previous letter campaign was of little avail: less than 10 individuals requested an information package and the number of volunteers has barely changed.]

[*Positive information*: Fortunately, the previous letter campaign was already quite successful: almost 200 individuals requested an information package and the number of volunteers has obviously increased.]

For our current campaign to gain new volunteers, we build on your commitment.”

*For-profit*

„Currently we are working on a campaign that aims at attracting new customer groups for our new regional product line.

In this context, we already issued 10,000 vouchers for a free sample, which where enclosed in the regional daily newspaper.

Now we would like to follow up on this campaign and ask you to survey passers-by in the regional pedestrian areas about their consumption behavior. For answering a few questions only, the respondents receive, besides some vouchers, a short information brochure about our newly offered regional product line.

[*Negative information*: Unfortunately, the previous voucher campaign was not was not nearly as successful as we have hoped it would be: only few individuals requested the free sample and our sales have barely changed.]

[*Negative information, neutral wording*: The previous voucher campaign was of little avail: only few individuals requested the free sample and our sales have barely changed.]

[*Positive information*: Fortunately, the previous voucher campaign was already quite successful: lots of individuals requested the free sample and our have obviously increased.]

For our current campaign to gain new customers, we build on your commitment.”

Appendix D: Additional Results

D1. Summary statistics of worker characteristics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Experiment 1 | | Experiment 2 | |
|  | Control group | Treatment group | Control group | Treatment group |
| Age | 26.3 | 22.6 | 21.2 | 20.6 |
| Female | 67.6% | 69.4% | 68.9% | 83.1% |
| Volunteer | 41.2% | 41.7% | 39.2% | 47.4% |
| Returning worker | 47.1% | 47.2% | -- | -- |
| Already done a similar job | 18.2% | 14.3% | -- | -- |
| Student | 91.2% | 94.4% | -- | -- |
| Campaign already known | -- | -- | 28.2% | 32.1% |
| Already written petition letters | -- | -- | 17.1% | 9.2% |
| *N* | *34* | *36* | *79* | *78* |

*Notes:* Not all individuals answered all questions. Hence, numbers of observations might vary marginally across the different items. In both experiments, the average age differs significantly between control and treatment group (*z*=2.591, *p*=0.010 and *z*=2.414, *p*=0.016, respectively). In experiment 2, we additionally find a marginally significant difference in the share of females ((1)=4.189, *p*=0.041). All other differences are statistically insignificant. p-values are obtained from two-sided Wilcoxon rank-sum tests and Chi-squared tests, respectively.

D2. Main regression results using OLS (Experiment 1)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | |
| *Dependent variable:* Amount of numbers called | | | | | | | |
|  | (1) | | (2) | | (3) | | (4) |
| Neg. information treatment | 15.400\*\* | | 17.988\*\* | | 15.533\*\* | | 18.123\* |
|  | (6.995) | | (6.787) | | (6.845) | | (9.894) |
| Age |  | |  | | -0.567 | | -0.645 |
|  |  | |  | | (0.356) | | (0.391) |
| Female |  | |  | | 2.872 | | 2.584 |
|  |  | |  | | (7.969) | | (8.002) |
| Volunteers |  | |  | | -7.006 | | -6.746 |
|  |  | |  | | (7.796) | | (7.808) |
| Returning workers |  | |  | | -11.356\* | | -8.333 |
|  |  | |  | | (6.756) | | (10.357) |
| Treatment |  | |  | |  | | -5.970 |
| *x* returning workers |  | |  | |  | | (14.683) |
| Constant | 129.794\*\*\* | | 144.448\*\*\* | | 161.076\*\*\* | | 167.114\*\*\* |
|  | (5.540) | | (10.773) | | (15.790) | | (19.251) |
| *Further controls:* |  | |  | |  | |  |
| Organizational controls | - | | 🗸 | | 🗸 | | 🗸 |
| **Observations** | 70 | | 70 | | 70 | | 70 |
| **R2** | 0.067 | | 0.170 | | 0.232 | | 0.234 |
|  |  |  | |  | |

*Notes:* The table reports point estimates obtained from OLS regressions (robust standard errors in parentheses). Organizational controls include dummies for time of the day (morning, afternoon, evening) and the offices in which the interviews took place. Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

D3. Regression analyses for Experiment 2

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | |  | |  | |
| *Dependent variable:* | Writing a letter | | Number of words written | | … conditional on writing a letter | | Number of ideas |
|  | (1) | | (2) | | (3) | | (4) |
| Neg. information treatment | 0.204\*\*\*  (0.070) | | 1.504\*  (0.333) | | 1.060  (0.185) | | 1.626  (0.549) |
| Campaign already known | 0.078  (0.082) | | 1.266  (0.243) | | 1.135  (0.167) | | 2.733\*\*\*  (0.863) |
| Volunteering for waste reduction | 0.273\*\*  (0.138) | | 1.792\*\*  (0.487) | | 1.240  (0.266) | | 1.581  (0.605) |
| Already petition letters written | 0.160  (0.122) | | 1.201  (0.311) | | 0.948  (0.206) | | 1.434  (0.544) |
| Female | -0.067  (0.090) | | 0.856  (0.231) | | 1.076  (0.224) | | 4.123\*\*\*  (1.957) |
| Age | 0.033  (0.021) | | 1.012  (0.029) | | 0.997  (0.021) | | 0.891  (0.063) |
| Constant |  | | 41.816\*\*\*  (26.175) | | 96.473\*\*\*  (44.334) | | 0.586  (0.892) |
| **Observations** | 145 | | 145 | | 98 | | 145 |
| **Pseudo R2** | 0.084 | | 0.002 | | 0.002 | | 0.088 |
| **Prob >** | 0.024 | | 0.087 | | 0.917 | | 0.001 |
|  |  |  | |  | |  | |

*Notes:* The table reports average marginal effects obtained from probit regression in specification (1) and incidence rate ratios obtained from negative binomial regressions in specifications (2) to (4). Robust standard errors in parentheses. Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

D4. Correlation tables

**Experiment 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Variable | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | Amount of numbers called | 136.465 | 31.471 | 1.000 |  |  |  |  |  |  |  |  |  |
| 2 | Interviews completed | 5.606 | 2.616 | 0.071 | 1.000 |  |  |  |  |  |  |  |  |
| 3 | Further ideas | 1.634 | 1.376 | 0.113 | 0.166 | 1.000 |  |  |  |  |  |  |  |
| 4 | Neg. information treatmenta | 0.507 | 0.503 | 0.283\*\* | 0.197\* | 0.293\*\* | 1.000 |  |  |  |  |  |  |
| 5 | Returning workerb | 0.479 | 0.503 | -0.210\* | 0.026 | 0.030 | -0.014 | 1.000 |  |  |  |  |  |
| 6 | Age | 24.380 | 7.005 | -0.219\* | -0.184 | -0.217\* | -0.254\*\* | 0.085 | 1.000 |  |  |  |  |
| 7 | Femalec | 0.690 | 0.466 | 0.075 | 0.238\*\* | 0.066 | 0.009 | -0.089 | -0.261\*\* | 1.000 |  |  |  |
| 8 | Volunteerd | 0.408 | 0.495 | 0.012 | 0.192 | 0.097 | 0.017 | -0.108 | -0.054 | 0.123 | 1.000 |  |  |
| 9 | Studente | 0.928 | 0.261 | 0.037 | 0.084 | 0.140 | 0.060 | -0.172 | -0.387\*\* | 0.049 | 0.117 | 1.000 |  |
| 10 | Already done similar jobf | 0.159 | 0.369 | 0.005 | -0.082 | 0.102 | -0.046 | -0.033 | 0.135 | 0.043 | 0.124 | 0.122 | 1.000 |

*Notes*:Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

a Coded as binary variable with 0 = control and 1 = treatment group

b Coded as binary variable with 1 = workers who already participated in the mailing campaign

c Coded as binary variable with 1 = female

d Coded as binary variable with 1 = privately engaged in volunteering activities for at least six months

e Coded as binary variable with 1 = currently enrolled as University student

f Coded as binary variable with 1 = having done a similar job (e.g. in a call center) at least once

**Experiment 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Variable | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | Letter writtena | 0.676 | 0.470 | 1.000 |  |  |  |  |  |  |  |  |  |
| 2 | Number of words written | 71.062 | 77.889 | 0.634\*\*\* | 1.000 |  |  |  |  |  |  |  |  |
| 3 | N°of additional campaign ideas | 0.407 | 0.812 | -0.034 | -0.0123 | 1.000 |  |  |  |  |  |  |  |
| 4 | Neg. information treatmentb | 0.510 | 0.502 | 0.176\*\* | 0.144\* | 0.169\*\* | 1.000 |  |  |  |  |  |  |
| 5 | Campaign already knownc | 0.303 | 0.461 | 0.105 | 0.121 | 0.224\*\*\* | 0.016 | 1.000 |  |  |  |  |  |
| 6 | Volunteering for waste red.d | 0.103 | 0.306 | 0.139\* | 0.167\*\* | 0.053 | -0.075 | 0.022 | 1.000 |  |  |  |  |
| 7 | Volunteering in generale | 0.434 | 0.497 | 0.102 | 0.068 | 0.127 | 0.051 | 0.027 | 0.113 | 1.000 |  |  |  |
| 8 | Previous petition letterf | 0.124 | 0.331 | 0.127 | 0.054 | 0.043 | -0.091 | 0.116 | 0.078 | -0.035 | 1.000 |  |  |
| 9 | Femaleg | 0.766 | 0.425 | -0.036 | 0.019 | 0.198\*\* | 0.174\*\* | -0.095 | 0.081 | 0.025 | -0.039 | 1.000 |  |
| 10 | Age | 20.876 | 2.309 | 0.104 | 0.076 | -0.088 | -0.119 | 0.094 | 0.028 | 0.072 | 0.175\*\* | -0.086 | 1.000 |

*Notes*:Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

a Coded as binary variable with 1 = having written a petition letter

b Coded as binary variable with 0 = control and 1 = treatment group

c Coded as binary variable with 1 = having known the campaign already before

d Coded as binary variable with 1 = privately engaged in volunteering activities that are related to the area of waste reduction

e Coded as binary variable with 1 = privately engaged in volunteering activities in more general

f Coded as binary variable with 1 = having written petition letters before

g Coded as binary variable with 1 = female

**Experiment 3**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Variable | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | Stated efforta | 5.087 | 1.230 | 1.000 |  |  |  |  |  |  |
| 2 | Volunteerb | 0.370 | 0.483 | -0.053 | 1.000 |  |  |  |  |  |
| 3 | Femalec | 0.745 | 0.437 | 0.199\*\*\* | -0.053 | 1.000 |  |  |  |  |
| 4 | Age | 23.232 | 4.070 | 0.042 | 0.027 | -0.099\*\* | 1.000 |  |  |  |
| 5 | Terms enrolled at University | 5.806 | 3.323 | -0.046 | 0.095\*\* | -0.038 | 0.470\*\*\* | 1.000 |  |  |
| 6 | Having a jobd | 0.704 | 0.457 | -0.035 | 0.137\*\* | 0.079\* | 0.007 | 0.089\*\* | 1.000 |  |
| 7 | Appropriateness of refusing to work a double shifte | 2.185 | 0.622 | -0.144\*\*\* | -0.052 | -0.093\*\* | 0.028 | 0.063 | -0.032 | 1.000 |

*Notes*:Significance levels are denoted as follows: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

a Values on a scale from 1 to 7

b Coded as binary variable with 1 = privately engaged in volunteering activities at least once per month

c Coded as binary variable with 1 = female

d Coded as binary variable with 1 = having a job parallel to their studies

e Coded as 1 = socially inappropriate, 2 = somewhat inappropriate, 3 = somewhat appropriate, and 4 = socially appropriate

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4. The estimated effect of our negative information treatment on productivity is comparable, if not larger, to that found in studies where non-financial symbolic awards are provided in similar contexts involving short-term, one-off jobs (Kosfeld and Neckermann, 2011; Bradler et al., 2016). [↑](#footnote-ref-4)
5. Jeworrek and Mertins (2019) used this mailing campaign along with other mailing campaigns conducted by the advertising agency for different organizations to carry out a field experiment testing whether doing exactly the same task (enveloping and stamping letters) but for different purposes (involving either a social mission or not) affects worker motivation. [↑](#footnote-ref-5)
6. As regards observable characteristics (age, gender, being a student, volunteering activities, performance in the previous letter campaign), we do not find any statistically significant differences between workers who were willing to conduct the phone interviews and those who declined. [↑](#footnote-ref-6)
7. If a worker randomly ticked one of the options on the list, it would have been extremely unlikely that we did not detect any inconsistency even in case of checking only one third of all entries. In case of detecting one or more mistakes, all entries could have been checked. [↑](#footnote-ref-7)
8. One of the returning workers from the control group declared that non-existent numbers existed (and vice versa) and none of the reported interviews was actually conducted since there was no corresponding entry on the phone records. This worker stated to have dialed 49 numbers, resulting in 10 interviews, which would be an exceptionally high success rate. To compare, the average number of dialed numbers is 127.5, resulting in 5.09 interviews. [↑](#footnote-ref-8)
9. Estimating OLS regressions delivers qualitatively and quantitatively comparable results (see Appendix D.2). [↑](#footnote-ref-9)
10. Randomization of treatment and control group workers into shifts and days of the week worked very well in general, there is only one shift (Friday evening) in which we have three observations in the treatment but none in the control group. Given the higher relevance of the time of the day for reaching possible interviewees at the phone and the small sample size, we refrained from additionally including weekday controls in our baseline specifications. [↑](#footnote-ref-10)
11. Low expected success rate: 145.7 dialed numbers in the treatment group vs. 123.0 numbers in control (Wilcoxon rank-sum test, *z*=-1.701, *p*=0.089). High expected success rate: 137.9 numbers in the treatment group vs. 109.5 numbers in control (Wilcoxon rank-sum test, *z*=-1.699, *p*=0.089). Please note the limited sample size of these groups, the smallest group has only four observations. [↑](#footnote-ref-11)
12. The average of dialed numbers per minute is relatively low, since workers were told to ring ten times if the called number exists, and this takes about 40 to 45 seconds. [↑](#footnote-ref-12)
13. 18.42 words in the treatment group vs. 13.88 words in control, *z*=-2.020, *p*=0.043, Wilcoxon rank-sum test. [↑](#footnote-ref-13)
14. The local campaign was following a much larger Germany-wide campaign against the waste of food in supermarkets. Besides several locally managed initiatives, the national campaign’s initiator also launched a petition on the internet portal [www.change.org](http://www.change.org) to collect a million signatures. Together with similar initiatives in a number of other European countries, the campaign’s goal was to implement an EU-wide directive similar to a recent law implemented in France. [↑](#footnote-ref-14)
15. The campaign was carried out at a local Christmas market. Visitors were informed about the background of the campaign, received promotional material provided by the Federal Ministry of Food and Agriculture (initiative *“Zu gut für die Tonne”*), and were subsequently asked for their signature. Supporters were also asked to take signature lists with them in order to collect further signatures among their friends and family. [↑](#footnote-ref-15)
16. Only one student left the lecture hall immediately and did not even answer the survey and, therefore, is not in our sample. [↑](#footnote-ref-16)
17. 56.9% of female students in the control group decide to write a letter whereas this number increases to 76.6% in the negative information treatment group (Chi-square test, (1)=5.048, *p*=0.025). The average number of words is 49.53 in the control and 92.69 in the treatment group (Wilcoxon rank-sum test, *z*=-2.826, *p*=0.005). [↑](#footnote-ref-17)