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9713
2022

April 2022

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CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editor: Clemens Fuest
https://www.cesifo.org/en/wp
An electronic version of the paper may be downloaded
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CESifo *Working Paper No. 9713*

Setting Adequate Wages for Workers: Managers' Work Experience, Incentive Scheme and Gender Matter

Abstract

Many societies report an increasingly divergent development of managers' salaries compared to that of their workforce. Moreover, there is often a lack in diversity amongst managerial boards. We investigate the role of managers' gender and incentive scheme on wages chosen for workers by conducting two experimental studies. The data reveal male managers respond in more self-oriented ways to their incentive scheme. Further, we find that experience with the workers' task can increase appreciation of workers. Effects are strongest when the managers' compensation scheme rules out self-orientation. Overall, female managers display more consistency in choosing adequate wages for workers, i.e. their choices are less affected by incentives. An increase in diversity may thus help reducing salary disparities and foster work atmosphere.

JEL-Codes: D010, J160.

Keywords: adequate wages, real work experiment, gender.

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July 2021

1 Introduction

"Surely no sensible person would say that management is not an art", writes Henry M. Boettinger, director of corporate planning at AT&T in 1975 in Harvard Business Review (Boettinger, 1975). More recently, however, it has been criticized that the training at business schools may foster ruthless behavior and greed in managers (The Guardian, 2017b). Selfishness in managers has also been addressed as a reason behind the VW emissions scandal in 2015 (New York Times, 2015b; New York Times Letters, 2015). Legislation has tried to curb selfish behavior in CEOs, e.g. by enforcing disclosure of CEO-workforce gaps in the US (The Guardian, 2015a). Nevertheless, there is still a vibrant public debate about setting rigid boundaries to CEO earnings (The Economist, 2014; New York Times, 2015a; Economic Policy Institute, 2020). There is evidence that managers with stronger prosocial preferences can have positive effects on both their workers and shareholders' revenues (Kajackaite and Sliwka, 2020). Still, it has been argued that managers at the top hierarchy level, if having the opportunity, may try to maximize own salaries, and that employees may directly or indirectly suffer from this (The Guardian, 2017a; New York Times, 2019).

Alongside this public discourse about ethics, greed and morality in business, the number of women in management positions is steadily growing, though overall numbers are still low in many sectors (compare e.g. the share of females on boards in OECD countries (OECD, 2017)). Many reasons and policy approaches for this have been discussed (see, e.g. Francois (1998); De Paola et al. (2010); Castillo et al. (2013)). Literature from economics and psychology suggests women may be more morally inclined than men. In survey studies, a gender effect does not always exist, yet when it does, it is typically in favor of women (Bednar and Gicheva, 2014; Deckers et al., 2016; O'Fallon and Butterfield, 2005; Loe et al., 2000). Thus, increasing gender diversity in management may bear potential for the well-being of dependent workers and work atmosphere. With an overall still moderate number of females in management positions, it is of course difficult to assess the influence of female leaders. Yet there is at least some evidence that female managers have a positive effect on work atmosphere and wages paid to

employees (Matsa and Miller, 2013; Melero, 2011). In these studies, however, the question of causality remains unanswered.

Therefore, in two gender-controlled experimental studies, we explore the influence of incentive schemes, manager's gender and work experience on appreciation of workers, reflected in wages chosen. Subjects are randomized into the roles of managers or workers. While workers spend an hour constructing and deconstructing pens, an arguably tedious task, managers decide over the workers' compensations. We vary managers' personal incentives, notably, whether they can maximize their own earnings or not, as well as their experience with the workers' task across treatments.

This results in the four following treatments. In *Baseline*, managers decide what they consider an adequate compensation for workers, up to a maximum amount. All money not awarded to the worker stays with the university and is used for further research projects. In the *Self* treatment, managers are faced with the same task but can keep all money not spent on their worker's compensation for themselves. Two additional treatments, *ExpBaseline* and *ExpSelf*, are similar, respectively, except that managers acquire some work experience prior to their decisions on workers' compensations. Managers construct and deconstruct one pen themselves before choosing an adequate compensation for the workers. Next to treatment effects, we focus on the interaction of treatment and manager's gender.

Our main findings are as follows: Incentive schemes matter. Workers' compensations in *Self* are lower than in *Baseline*. This happens even though compensation in *Baseline* is already moderate compared to the local minimum wage. Comparing *Baseline* to *Self*, female managers show a more consistent choice of compensations than their male counterparts, showing a smaller effect of the underlying incentives. Both of these results are replicated in the respective treatments with experience (*ExpBaseline* and *ExpSelf*).

Work experience significantly increases compensation overall. However, this increase is mainly driven by higher compensations paid in *ExpBaseline*, where

high compensations for workers do not reduce managers' earnings. In contrast, compensations in the respective *Self* treatments remain at a low level, no matter whether managers are more or less familiar with the workers' task.

Additionally, we measure workers' beliefs on adequate compensations for the task, as well as what they expect managers to choose in their treatment. Workers' perceptions of an adequate compensation is stable across treatments. Anticipating the behavior of others, or own behavior in a different situation or emotional state, can be difficult (compare e.g. Van Boven and Loewenstein (2005) and the references therein). Our data reveal that nevertheless, workers are aware that managers' incentive schemes will impact their wage choices.

It has been argued that experience with the tasks workers have to do may help managers to create a more suitable work atmosphere (Louis, 1980; Dienesch and Liden, 1986). In the hotel and tourism sector, for example, it is widespread practice that an apprenticeship (that can also aim for higher management levels), starts with hands-on work as a dishwasher in the kitchen or as a concierge (Nebel et al., 1995; Bureau of Labor Statistics, 2017). In other industries, managers also work at lower levels to get a feel for the tasks and challenges first hand, including managers at Tesco (The Guardian, 2014) and Morrisons (The Guardian, 2015b). United Parcel Service highly values personal experience of leaders and managers with tasks like sorting packages or driving a package car. When hiring from within, such experience is a must. For newcomers, special hands-on trainings are in place (Cohen and Prusak, 2001). Our results show, however, that the impact of experience is limited when it comes to a costly appreciation of workers.

This paper contributes to the literature on gender differences in ethical decision making. So far, most studies rely on questionnaires and hypothetical scenarios (see e.g. O'Fallon and Butterfield (2005) for an overview), also when it comes to managers (e.g. Melero (2011)). This line of research suggests females behave in more ethical ways. In the economic experimental literature, a survey study by Croson and Gneezy (2009) reports similar findings when it comes to altruistic behavior. Further, males lie more often to secure a monetary gain than

females (Dreber and Johannesson, 2008). This is also observed in group behavior (Muehlheusser et al., 2015) and in competition (Conrads et al., 2014). However, males prove very generous and moral if it does not lead to economic disadvantage for themselves (Andreoni and Vesterlund, 2001). Our results are in line with this.

To the best of our knowledge, no economic study so far has considered the impact of own work experience on the appreciation for others carrying out similar work. The data shows that such experience in managers can increase wages chosen for workers. Effects are strongest when higher wages don't have a negative effect on the managers' payoff. In contrast, especially male managers stay rather self-oriented when they weigh workers' wages against their own. Experience with the workers' task does not reduce this self-orientation.

One may argue that also in dictator games, many subjects give considerably less to the other party than what they take for themselves (see Engel (2011) for a survey). In fact, dictators who give about 30 percent of the total are often classified as "rather altruistic" (Neumann et al., 2018). In these games, the situation is typically symmetric across dictator and recipient, only decision power is asymmetric. In contrast, in our setting, workers have to carry out a tedious task that managers know takes about an hour to complete, while managers only decide about wages and can leave the premises of the study much faster. Nevertheless, on average, managers cash in a lot more of the overall "pie", if they can.

Possible reasons for female under-representation in higher management positions are manifold. It has been argued that males may compete too much, while females may compete too little (e.g. Niederle and Vesterlund (2011); Buser et al. (2014); Buser (2016))[1]. This difference in willingness to compete is reported to be driven by, among other factors, differing distributional preferences (Balafoutas et al., 2012). Other reasons include taste-based discrimination (Becker, 1971), statistical discrimination (Phelps, 1972; Arrow, 1973), and discrimination from biased beliefs (Albrecht et al., 2013; Bohren et al., 2019, 2020; Coffman et al.,

[1]Research on children reveals this may also depend on the task, see Dreber et al. (2011, 2014)

2021). Furthermore, women are reported to be less self-promoting which stems from a lesser subjective evaluation of their own performance (Exley and Kessler, 2019). It has also been documented that competitive environments can enhance sabotage (Chowdhury and Gürtler, 2015; Harbring and Irlenbusch, 2011), and that females may engage less in sabotaging others than males (Dato and Nieken, 2014, 2020). No matter why less females may end up in top management, our studies suggest that appreciation of workers may suffer from a lack of diversity in management positions.

2 Experimental Design and Hypotheses

In our experiments, subjects are randomized into the roles of managers and workers. In all treatments, managers decide independently over the compensation (or wage) of one worker. Managers know that their worker has to work on a tedious task: the complete assembly of 100 pens and the complete disassembly of another 100 pens. The working task is described in the instructions[2] and illustrated with two pictures of the materials workers use (pens and sorting boxes, compare Figure 1). Managers further know that the completion of the task requires about one hour of working time and that workers will be paid only after completion of the task. Also, the manager's payoff does not hinge on the worker actually finishing the task. In all treatments, managers are asked to decide over what they consider the *adequate* compensation for their worker. Compensation can be set in 30 cents steps ranging from 0 to 21 euro.

We run two studies. In the first study, we vary gender of managers and incentive structure. Every manager makes exactly one decision, namely setting the wage for *one* worker. In the *Baseline* treatment, managers decide over an adequate compensation facing the trade-off towards a common public interest (funding non-related research). They are asked to allocate the total amount of 21 euro according to what they consider the adequate compensation for the work-

[2]Instructions are provided in the appendix, section A.4.

ers, knowing that the rest of the money goes to the university's research budget and will be used for other research purposes.

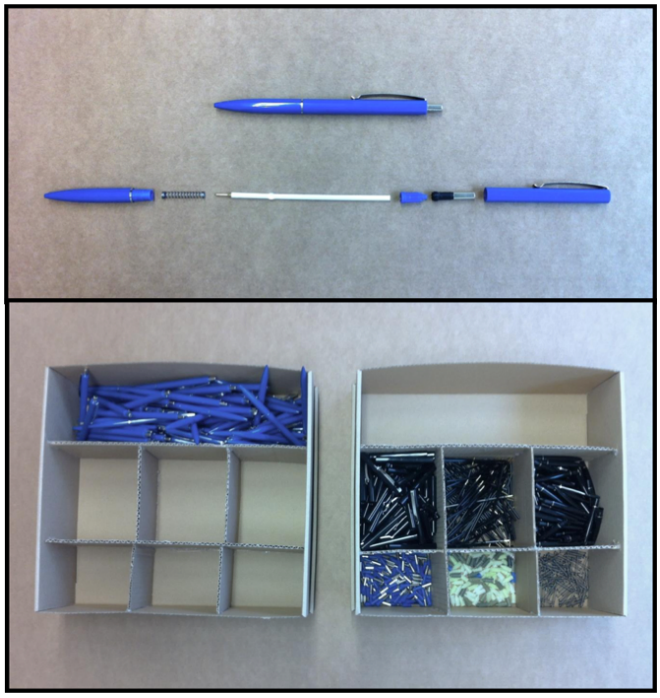


Figure 1: Working materials as depicted in managers' instructions. The first photo shows one assembled and one disassembled pen. The second photo shows the sorting boxes workers work with during the task.

In the *Self* treatment, in contrast, managers weigh their own interest against that of a worker. They decide how much the worker should receive as an adequate compensation, knowing they will keep the rest to themselves. Here, managers' self-interest should play an important role and influence how compensations for workers are chosen. Depending on company size, owners acting as mangers may face a trade-off of this kind. In larger companies, managers may rather have to compare different important interests. This may fit better to the *Baseline* treatment.

Our design removes all monetary incentives for managers to motivate their workers with a high compensation. Thus, we can focus on their distributional

preferences. Managers know that the situation is very asymmetric: Workers have to work on the task for about an hour, whereas managers do not face the real-effort task. Accordingly, managers have a much lower time investment.

Next to treatment effects, we focus on the role of gender in managers. Therefore, we run a gender-controlled study. We invited similar numbers of males and females to each session. Interaction between an experimenter, who was blind about the hypotheses of the study, and participants was reduced to an absolute minimum. We further kept the gender of the experimenter constant over all sessions.

As we observe rather low wages being chosen in our first study, especially by male managers, we conduct a second study to explore a channel which might raise workers' wages. We investigate if managers choose higher compensations when they know the workers' task from own experience. Therefore, in the second study, managers gain personal experience with the working task in two new treatments: *ExpBaseline* and *ExpSelf*. Managers completely assemble and disassemble one pen each, before they determine what they consider an adequate compensation for workers. Incentives are identical to the corresponding prior treatments from the main study, *Baseline* and *Self*, respectively. We further conduct an additional control treatment to make sure that the sole presence of working materials does not cause a change in perception of the working task. For details and results, see appendix section A.2. Similar to the first study, we conduct the second study in a gender-controlled way.

2.1 Details of the studies

A total of 500 participants take part. Participants are recruited from a mixed student subject pool using ORSEE (Greiner, 2015) and HROOT (Bock et al., 2014) in a gender-controlled manner. They are randomized into the roles of worker or manager. For further details, see appendix section A.1.

All participants receive a show-up fee of 5 euro. At the beginning of each session, workers receive information about their working task and the decision their respective manager faces. They are informed that they get to know and receive their wage after they complete the working task which lasts about one hour. Before they start their work, they fill in a short, mostly socio-demographic questionnaire. In addition, they indicate what they consider an adequate compensation for their work as well as what actual compensation they anticipate from their manager. Depending on managers' decisions, workers receive between 0 and 21 euro for their work. Workers stay about 75 minutes in the lab.

Managers do not have to complete the workers' task. After they decide upon workers' wages, they are asked to complete a survey on norms, personal characteristics and demographic background for an extra compensation of 5 euro. All managers choose to take part in this. In *Baseline*, managers thus receive 10 euro in total. In the *Self* treatments, they receive 10 euro minimum and 31 euro maximum, depending on the compensation they choose for their workers. Managers stay about 45 minutes in the lab.

All participants complete their sessions except for one female worker who decides to leave the study after reading the instructions. Another female worker is retroactively matched with the replaced worker's manager[3].

2.2 Hypotheses

Prosocial preferences matter, yet typically, they matter less than selfish interests, compare, e.g., Engel (2011) This motivates our first preliminary hypothesis.

Hypothesis 1: *Managers choose higher wages for workers in* Baseline *than in* Self.

[3]Since all participants were already in their cubicles, the departure of this participant went unnoticed and could not have impacted any decisions by other participants in the session.

Building on this precondition, we hypothesize that this difference between treatments is less pronounced in female managers. There is a rich literature from business ethics showing that females tend to behave in more moral and less corrupted ways.[4] Therefore, female managers may have a higher capacity to resist temptations in the *Self* treatments to keep more money for themselves compared to male managers. Furthermore, evidence exists that men are more generous than women only if said generosity comes cheap (Andreoni and Vesterlund, 2001). Therefore, for our main hypothesis, we expect female managers may to display a smaller difference between chosen workers' wages across *Self* and *Baseline* treatments.

Hypothesis 2: *The difference between wages for workers in* Baseline *and* Self *is larger for male than female managers. That is, female managers are less influenced by the incentive scheme they are in.*

After analyzing the results of our first study, we set out to explore a mechanism to combat selfish interests in managers. Own work experience has been discussed to increase valuation for a work others carry out and empathy with those who conduct it (compare e.g. Louis (1980)). Many companies expect their future managers to first gain a hands-on impression of the work employees on lower hierarchy levels carry out (The Guardian (2014, 2015b)). This motivates our treatments of the second study and leads to the following hypothesis.

Hypothesis 3: *First-hand experience with the workers' task increases wages managers choose for workers.*

We also elicit the beliefs of the workers and their perspective on an appropriate compensation for their work, which should be independent of their managers' incentives. However, we theorize that workers are able to anticipate how these incentives influence the chosen wages.

[4]Compare surveys by O'Fallon and Butterfield (2005) and Craft (2013) for an overview based mainly on hypothetical scenarios or questionnaires; see Deckers et al. (2016) for evidence from real, incentivized decisions

Hypothesis 4:
a) *The wage a worker considers appropriate for their work does not hinge on the incentive scheme the managers face.*
b) *Workers predict managers' incentive schemes to affect the wages they receive for their work.*

3 Results

In section 3.1, we present the results of our first study which focuses on gender and incentive scheme of managers. Results of the second study introducing experience with the working task are provided in section 3.2. Section 3.3 presents our findings about workers' beliefs and expectations. Further results as well as a consolidation of our findings can be found in appendix section A.3.

3.1 Incentive Scheme and Gender

The focus of our first study is the impact of managers' gender, incentive scheme and the interaction of the two on wages for workers. Firstly, we find that wages chosen by managers react to incentive schemes, i.e. workers' compensations in *Self* are lower than in *Baseline*.

In line with Hypothesis 1, the different incentive schemes have a significant effect on workers' wages. While managers in *Baseline* choose 10.29 euro on average as an appropriate wage for workers, managers in *Self* paid only 8.06 euro ($p=0.000^{***}$, two-sided t-test[5]).

Managers in *Baseline* know that money not spent on the worker is used for a public good, i.e. future university research. Participants seem to have seriously considered this trade-off as only one manager chooses the maximum compensation of 21 euro for workers. Further, one manager (in the *Self* treatment) chooses

[5]Please note that we report results of t-tests as this is a rather robust test even if some assumptions are not perfectly met – for instance, normal distribution and continuity of data (Sawilowsky and Blair, 1992), compare section A.3.2

to award 0 as workers' wage. Our results remain robust if we exclude one or both of these border cases. Looking at the level of wages, compensation is generally rather low with a substantial part of managers rewarding less than the legal minimum wage at the time. 21.1% of managers in *Baseline* and 42.4 % in *Self* choose less than 8.50 euro which is the hourly minimum wage when the study takes place.

Managers spend 45 minutes on average in the lab while workers stay there for 75 minutes. In the *Self* treatment, managers take 35.88 euro as an hourly payoff on average. Thereby, they earn about 3.5 times as much as workers. This discrepancy arises even though workers arguably have a tedious task to carry out.

At first glance, it might look like there is no effect of gender on wages chosen. Pooling data over both main treatments, female and male managers pay 8.97 euro and 9.28 euro on average, respectively. This difference is not statistically significant at any conventional level (p=0.61, two-sided t-test). Similarly, comparing the two treatments separately, differences are relatively small. Male managers are a bit more generous in *Baseline* (11.10 euro vs. 9.44 euro, p=0.076*, two-sided t-test) while female managers award insignificantly more in *Self* (7.59 vs. 8.54, p=0.16, two sided t-test). When we take a closer look at the data, however, we can confirm that female managers show less variation across the two treatments.

We hypothesized that male and female managers react differently to the different incentives. In line with Hypothesis 2, the data reveal this is the case. While the workers' wages chosen by male managers amount to 11.10 euro in *Baseline*, they drop to 7.59 euro in *Self* (p=0.000***, two-sided t-test). Thus, the data show a clear causal effect of the incentive scheme on male managers. Female managers choose 9.44 euro in *Baseline* compared to 8.54 euro in *Self* (p=0.235, compare Figure 2). The respective difference in difference measure is significant and therefore supports our main hypothesis (p=0.027**).

Our post-decision survey of managers revealed that their chosen wages are in line with their evaluation of the workers' task as well as their opinion on minimum wage. Note, however, that this survey was not incentivized, so subject might

have used it to explain or justify their decision retroactively. We elicit managers' evaluation of the task in 5 different dimensions (with 7-point Likert-scales each): how honorable and how hard the task is considered as well as how demanding in terms of special abilities, technical skill and spatial sense. We also elicit managers' approval of a legal minimum wage with a 7-point Likert-scale. We find strong positive correlations between wages payed and both a higher evaluation of the task as well as positive opinions on minimum wage (OLS regression, p=0.021** and p=0.013**, n=113, for more details, see Appendix section A.3.1)

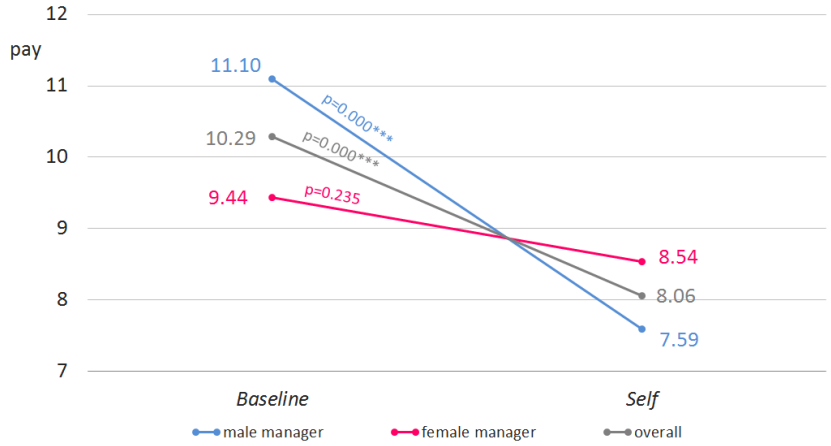


Figure 2: Study 1 by Gender. Pay chosen by manager's gender (in euro) in *Baseline* vs. *Self* (male vs. female manager, diff-in-diff, p=0.027**, one-sided t-test, n=114)

3.2 Introducing Experience

In our second study, we find that personal experience of managers can overall increase workers' wages. Yet, its effect is mostly limited to the treatment in which self-interest was absent, i.e. *ExpBaseline*. As the evaluation of the work (as captured by the manager survey) is not affected by experience, we conclude that the increase in what is considered an adequate compensation is due to a change in appreciation of the worker. Again, and in line with our first study, female managers choose wages more consistently. Behavior of male managers hinges on the underlying incentive scheme more strongly.

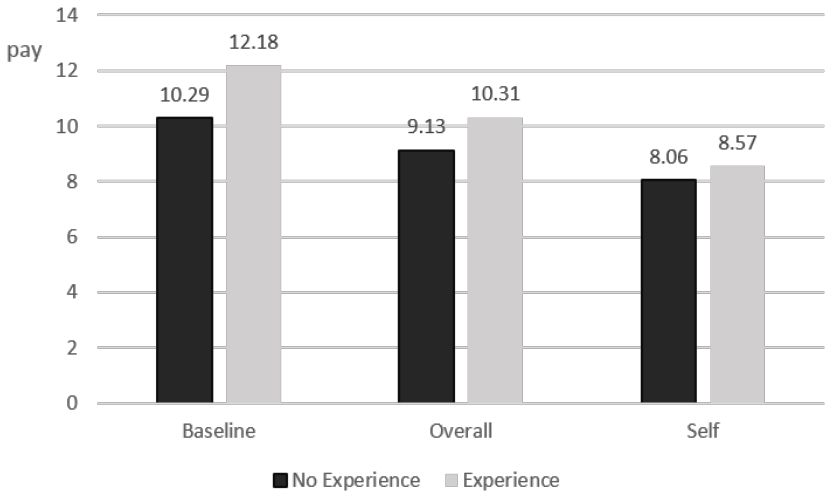


Figure 3: Adequate pay, incentives and experience. Chosen wage (in euro) in *No Experience* vs. *Experience* .

Wages in *ExpBaseline* and *ExpSelf* average 10.31 euro compared to 9.13 euro in the corresponding treatments without experience, i.e. *Baseline* and *Self* (p=0.018**, two-sided t-test). This is in line with Hypothesis 3. However, this increase from work experience is almost exclusively driven by higher compensations in *ExpBaseline* compared to *Baseline* (12.18 vs. 10.29, p=0.009***). Wages in the treatments where self-interest plays a role remain virtually unchanged and are not significantly different at any conventional level (8.57 in *ExpSelf* vs. 8.06 in *Self*, compare Figure 3). Thus, personal experience with the worker's task seems to be able to increase the appreciation for the worker but there is no evidence that it can counteract effects of selfishness in managers.

Pooling both experience treatments shows no effect of gender on compensations (10.58 euro for female vs. 10.05 euro for male managers, p=0.498). The same is true for *ExpBaseline* (11.68 for female managers vs. 12.70 for male, p=0.355). In *ExpSelf* managers choose significantly less this time (9.52 vs. 7.66, p=0.041**).

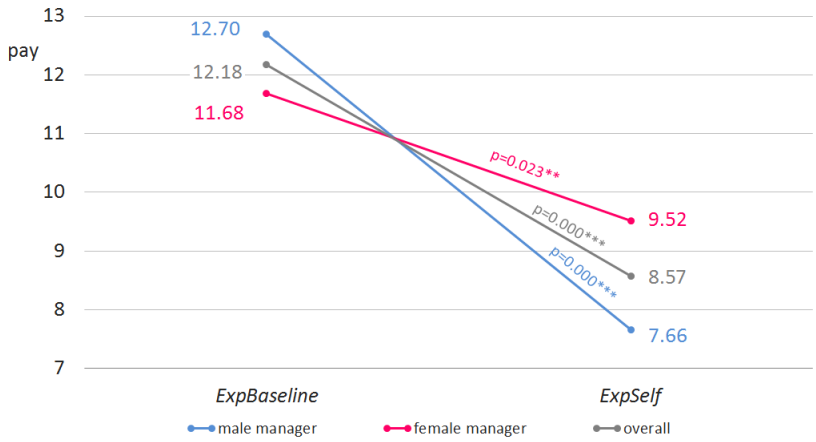


Figure 4: Study 2 by Gender. Pay (in euro) in *ExpBaseline* vs. *ExpSelf* (male vs. female manager, diff-in-diff, p=0.041**, n=114)

Again we find the hypothesized effects when looking at the interaction of gender and incentives, with male managers showing stronger treatment differences. Male managers in *ExpBaseline* choose 12.70 euro while those in *ExpSelf* choose 7.66, a highly significant reduction of 40 % (p=0.000***). Compensations chosen by female managers also drop significantly (11.68 euro vs. 9.52 euro, p=0.023**). Yet, this reduction is lower than for male managers, which is confirmed by a significant difference-in-difference measure (p=0.041**) (compare Figure 4). Again, female managers decide more consistently across incentive schemes, replicating our main result from the first study.

The managers' survey showed no change in the evaluation of the workers' task due to personal experience. So familiarity with the task does not affect how challenging or demeaning the task is perceived by managers. Yet, at least in *ExpBaseline*, managers are willing to pay a significantly higher amount to their workers. This suggests that the higher wage may be caused by a higher appreciation of the worker rather than a different relation with the task.

3.3 Workers' Beliefs and Expectations

In this section, we present our results of the elicitation of expectations and beliefs of the workers. Workers answered these questions *before* working on their task. We find that worker's beliefs on what is an adequate compensation does not depend on the incentive scheme the manager faces and are generally higher than wages the managers actually choose.

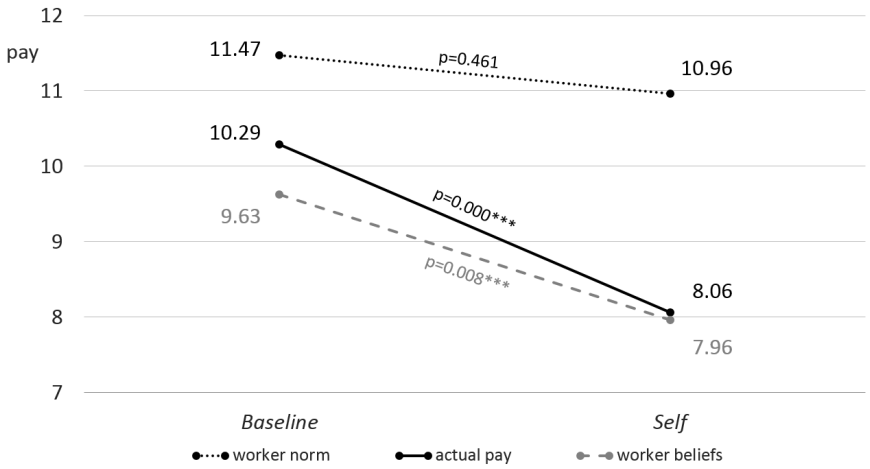


Figure 5: Worker norm and beliefs (Study 1) The worker norm differs significantly from actual pay in *Baseline* and *Self* (11.47 euro vs. 10.29 euro and 10.96 euro vs. 8.06 euro, two-sided t-test, p=0.090* and p=0.000***, n=110 and n=116, respectively). Worker beliefs, however, do not differ significantly (p=0.347 and p=0.830, respectively).

Workers perception of what is an adequate compensation of the task is consistent between treatments (11.47 in *Baseline* vs. 10.96 in *Self*, p=0.461), confirming Hypothesis 4a. This is more than the wages that were actually paid in both treatments, respectively (11.47 euro vs. 10.29 euro, p=0.090* and 10.96 vs. 8.06, p=0.000***). Workers predict managers' decisions quite well. The data display no significant differences between workers' expectations and compensations chosen by the managers (10.29 euro vs. 9.63 euro in *Baseline* and 8.06 vs. 7.96 in *Self*, also compare Figure 5). This suggests that workers are able to accurately estimate the effect of the incentive scheme on managers' decisions.

4 Discussion

This study provides evidence that incentive scheme, gender and experience matter for what managers choose as an adequate wage for workers. In the following section, we discuss some limitations and special characteristics of this study.

Our experiment represents a highly simplified employer-employee relationship between a manager and a worker. We explicitly and deliberately focus on the wage a manager chooses for workers for the completion of a task. The design leaves no room for gift-exchange or reciprocity (compare e.g. Akerlof (1982); Akerlof and Yellen (1990); Fehr et al. (1998)) or negotiation (compare e.g. Ochs and Roth (1989); Güth and Tietz (1990); Babcock and Laschever (2009)). Of course, this abstracts from many real-world scenarios in which decisions might be influenced by those mechanisms. However, by doing so, we ensure that managers are not affected by other considerations than those we aimed for: the wage they deem appropriate for completing a specific working task.

In real world settings, the wage for work is often tied to the value of the work, for example the market price for a provided service or a product. In that sense, the value of the workers task in our experiments is arguably zero and the wages chosen by managers can be seen as a lower boundary of their willingness to pay (or award) for an hour's work. But while this design choice very likely adds to the overall low level of wages we observe, it also lets us control for different values managers might attribute to the task, which could otherwise distort our data.

The design of our study borrows some elements of a standard dictator game.[6] Specifically in our *Self* treatment, managers weigh their own benefit against money another participant of the study receives. However, standard dictator games cannot directly relate to behavior in pay determination as they usually abstract from labor situations and effort using simple endowments entitled to the dictator for no specific reason. This means that, first, social obligations of

[6]For a review and meta study on dictator games (including findings on gender differences and framing), see Engel (2011).

dictators (i.e. managers in our study) resulting from labor are basically absent (compare e.g. Blau (1964)). Second, giving in dictator games can be seen as a measure for altruism (compare e.g. Eckel and Grossman (1996)), not a measure for valuation of work as it is in our study. Of course, there exist studies, that use real effort tasks in dictator games instead of endowments (compare e.g. Oxoby and Spraggon (2008); Heinz et al. (2012)) as well as social framings (compare e.g. Dreber et al. (2013) and the references therein). We feel assured by their results that a real effort task and the design of our study lead to a feeling of social responsibility towards workers (compare e.g. Handgraaf et al. (2008)) that would not apply in a standard dictator game. However, additionally to the differences mentioned above, the goal and scope of these studies is a completely different one: they investigate how real-effort tasks change giving/taking amounts compared to games where effort is absent. Our study, however, uses a fixed level of effort and focuses on how a change in trade-offs, gender and own work experience causally affects the valuation of work done by others. Our managers have to decide what they consider an adequate pay for workers who have to work on a tedious task for about an hour – which they themselves do not have to complete. Furthermore, we compare this to a baseline treatment in which this decision is independent from own profits of managers to find out how valuation for work is affected by monetary incentives.

As we use a student sample of the Karlsruhe Institute of Technology, our results are, of course, not representative for the general population. However, this specific sample might be an especially interesting one as the majority of Germany's CEOs are former students of this university (Hartmann, 2016). Thus, we conduct this experiment with a sample that is not representative but potentially even more relevant for the considered context.

Debates on the social acceptability and adequacy of (extreme) wages are a recurring and old phenomenon (Glickman, 1997; Power, 1999; Venkatasubramanian et al., 2015). Fairness concerns in labor markets and wage negotiations have already been addressed by Slichter (1920) and Hicks (1963). In our experiments, we abstract from market forces and focus on the valuation for work done by oth-

ers. Following the origins of the standard neoclassical model, wage determination is a matter of supply, demand and productivity. However, it has been argued that it is not markets alone that determine wages but that labor markets are more or less imperfect which allows for several other mechanisms to play their part in determining wages (Rees, 1993). Furthermore, social economics suggests a different approach: wages should not be considered a price but should adequately reflect workers' needs (Figart, 2001). Williams (1956) stresses that the two opposing views of wages as a price on free markets vs. wages as the result of social and moral consideration (and thus being part of a state's responsibility) remain hard to align. Including market forces into our approach in future research could potentially help to understand how these two aspects interact.

5 Conclusion

In this paper, we conducted two studies to investigate how managers choose wages for workers. Wages chosen hinge on the manager's gender, whether managers have some experience with the worker's task, and the incentive scheme the manager is in. As expected, when managers can profit from paying lower wages, they generally do so. Yet, male managers react stronger to incentives schemes than females. Female managers exhibit a more consistent behavior which seems to be more robust to the opportunity to be selfish. These results may have important implications for organizations and work cultures and can add to the current discussion on gender compositions of board and upper corporate hierarchies.

First-hand experience with the worker's task can increase the wages managers chose for workers. Yet, this effect is mostly limited to incentive schemes in which managers have no self-oriented reason to set low wages for workers. Therefore, first-hand experience with the workers' task may soften disparities across workers and managers only in cases in which disparities were not so large to begin with.

What workers consider an appropriate wage for their task does not hinge on the managers' incentive scheme. Yet workers predict an influence of the managers' incentive scheme on the wages they will receive. This shows there is some

awareness in workers, that may well contribute to social debate.

References

Akerlof, G. A. (1982). Labor Contracts as Partial Gift Exchange. *The Quarterly Journal of Economics 97*(4), 543–569.

Akerlof, G. A. and J. L. Yellen (1990). The Fair Wage-Effort Hypothesis and Unemployment. *The Quarterly Journal of Economics 105*(2), 255–283.

Albrecht, K., E. Von Essen, J. Parys, and N. Szech (2013). Updating, self-confidence, and discrimination. *European Economic Review 60*, 144–169.

Allport, G. W. and H. S. Odbert (1936). Trait-Names: A Psycho-lexical Study. *Psychological Monographs 47*(1), i–171.

Andreoni, J. and L. Vesterlund (2001). Which is the Fair Sex? Gender Differences in Altruism. *The Quarterly Journal of Economics 116*(1), 293–312.

Arrow, K. J. (1973). Theory of discrimination. *Discrimination in Labor Markets, Princeton University Press, Princeton*, pg. 3–33.

Auspurg, K., T. Hinz, and C. Sauer (2017). Why Should Women Get Less? Evidence on the Gender Pay Gap from Multifactorial Survey Experiments. *American Sociological Review 82*(1), 179–210.

Babcock, L. and S. Laschever (2009). *Women Don't Ask: Negotiation and the Gender Divide*. Princeton University Press.

Balafoutas, L., R. Kerschbamer, and M. Sutter (2012). Distributional preferences and competitive behavior. *Journal of economic behavior & organization 83*(1), 125–135.

Becker, G. S. (1971). *The Economics Of Discrimination*. University of Chicago press. second edition.

Bednar, S. and D. Gicheva (2014). Are Female Supervisors More Female-Friendly? *American Economic Review 104*(5), 370–75.

Ben-Ner, A., F. Kong, and L. Putterman (2004). Share and Share Alike? Gender-Pairing, Personality, and Cognitive Ability as Determinants of Giving. *Journal of Economic Psychology 25*(5), 581–589.

Blau, P. M. (1964). *Power and Exchange in Social Life*. John Wiley & Sons.

BMAS Bundesamt für Arbeit und Soziales (2017). The Minimum Wage – Questions and answers. http://www.bmas.de/SharedDocs/Downloads/EN/PDF-Publikationen/a640-ml-broschuere-englisch.pdf?__blob=publicationFile&v=5, last accessed July 2019.

Bock, O., I. Baetge, and A. Nicklisch (2014). HROOT: Hamburg Registration and Organization Online Tool. *European Economic Review 71*, 117–120.

Boettinger, H. M. (1975). Is Management Really an Art. *Harvard Business Review 53*(1), 54–64.

Bohren, J. A., K. Haggag, A. Imas, and D. G. Pope (2020). Inaccurate Statistical Discrimination.

Bohren, J. A., A. Imas, and M. Rosenberg (2019). The Dynamics of Discrimination: Theory and Evidence. *American Economic Review 109*(10), 3395–3436.

Bureau of Labor Statistics (2017). Occupational Outlook Handbook, Lodging Managers. https://www.bls.gov/ooh/management/lodging-managers.htm, last accessed July 2019.

Buser, T. (2016). The Impact of Losing in a Competition on the Willingness to Seek Further Challenges. *Management Science 62*(12), 3439–3449.

Buser, T., M. Niederle, and H. Oosterbeek (2014). Gender, Competitiveness, and Career Choices. *The Quarterly Journal of Economics 129*(3), 1409–1447.

Castillo, M., R. Petrie, M. Torero, and L. Vesterlund (2013). Gender differences in bargaining outcomes: A field experiment on discrimination. *Journal of Public Economics 99*, 35–48.

Charness, G. and A. Rustichini (2011). Gender Differences in Cooperation with Group Membership. *Games and Economic Behavior 72*(1), 77–85.

Chowdhury, S. M. and O. Gürtler (2015). Sabotage in contests: a survey. *Public Choice 164*(1), 135–155.

Christie, R. and F. L. Geis (1970). *Studies in Machiavellianism*. Academic Press.

Coffman, K. B., C. L. Exley, and M. Niederle (2021). The role of beliefs in driving gender discrimination. *Management Science 67*(6).

Cohen, D. and L. Prusak (2001). *In Good Company: How Social Capital Makes Organizations Work*. Harvard Business School Press.

Conrads, J., B. Irlenbusch, R. M. Rilke, A. Schielke, and G. Walkowitz (2014). Honesty in Tournaments. *Economics Letters 123*(1), 90–93.

Craft, J. L. (2013). A Review of the Empirical Ethical Decision-Making Literature: 2004–2011. *Journal of Business Ethics 117*(2), 221–259.

Croson, R. and U. Gneezy (2009). Gender Differences in Preferences. *Journal of Economic Literature 47*(2), 448–474.

Dato, S. and P. Nieken (2014). Gender differences in competition and sabotage. *Journal of Economic Behavior & Organization 100*, 64–80.

Dato, S. and P. Nieken (2020). Gender Differences in Sabotage: the Role of Uncertainty and Beliefs. *Experimental Economics 23*(2), 353–391.

De Paola, M., V. Scoppa, and R. Lombardo (2010). Can gender quotas break down negative stereotypes? evidence from changes in electoral rules. *Journal of Public Economics 94*(5-6), 344–353.

Deckers, T., A. Falk, F. Kosse, and N. Szech (2016). Homo Moralis: Personal Characteristics, Institutions, and Moral Decision-Making. Working Paper 5800, CESifo Working Paper Series.

Diekman, A. B. and E. K. Clark (2015). Beyond the Damsel in Distress: Gender Differences and Similarities in Enacting Prosocial Behavior. In *The Oxford Handbook of Prosocial Behavior*, pp. 376–391. Oxford University Press.

Dienesch, R. M. and R. C. Liden (1986). Leader-Member Exchange Model of Leadership: A Critique and Further Development. *The Academy of Management Review 11*(3), 618–634.

Dreber, A., T. Ellingsen, M. Johannesson, and D. G. Rand (2013). Do People Care About Social Context? Framing Effects in Dictator Games. *Experimental Economics 16*(3), 349–371.

Dreber, A. and M. Johannesson (2008). Gender differences in deception. *Economics Letters 99*(1), 197–199.

Dreber, A., E. Von Essen, and E. Ranehill (2011). Outrunning the gender gap—boys and girls compete equally. *Experimental Economics 14*(4), 567–582.

Dreber, A., E. von Essen, and E. Ranehill (2014). Gender and competition in adolescence: task matters. *Experimental Economics 17*(1), 154–172.

Eagly, A. H. (2013). *Sex Differences in Social Behavior: A Social-Role Interpretation*. Psychology Press.

Eckel, C. C. and P. J. Grossman (1996). Altruism in Anonymous Dictator Games. *Games and Economic Behavior 16*(2), 181–191.

Economic Policy Institute (2020). CEO compensation surged 14% in 2019 to $ 21.3 million. https://www.epi.org/publication/ceo-compensation-surged-14-in-2019-to-21-3-million-ceos-now-earn-320-times-as-much-as-a-typical-worker/, last accessed March 2021.

Einhorn, H. J. and R. M. Hogarth (1981). Behavioral Decision Theory: Processes of Judgement and Choice. *Annual Review of Psychology 32*(1), 53–88.

Eisenberg, N. and R. Lennon (1983). Sex Differences in Empathy and Related Capacities. *Psychological Bulletin 94*(1), 100–131.

Engel, C. (2011). Dictator Games: A Meta Study. *Experimental Economics 14*(4), 583–610.

Exley, C. L. and J. B. Kessler (2019). The gender gap in self-promotion. Technical report, National Bureau of Economic Research.

Fehr, E., L. Goette, and C. Zehnder (2009). A Behavioral Account of the Labor Market: The Role of Fairness Concerns. *Annual Review of Economics 1*, 355–384.

Fehr, E., E. Kirchler, A. Weichbold, and S. Gächter (1998). When Social Norms Overpower Competition: Gift Exchange in Experimental Labor Markets. *Journal of Labor Economics 16*(2), 324–351.

Fehr, E. and K. M. Schmidt (1999). A Theory of Fairness, Competition, and Cooperation. *Quarterly Journal of Economics 114*(3), 817–868.

Figart, D. M. (2001). Ethical Foundations of the Contemporary Living Wage Movement. *International Journal of Social Economics 28*(10/11/12), 800–814.

Francois, P. (1998). Gender discrimination without gender difference: theory and policy responses. *Journal of Public Economics 68*(1), 1–32.

Glickman, L. B. (1997). *A Living Wage: American Workers and the Making of Consumer Society*. Cornell University Press.

Goetz, J. L., D. Keltner, and E. Simon-Thomas (2010). Compassion: An Evolutionary Analysis and Empirical Review. *Psychological Bulletin 136*(3), 351–374.

Greiner, B. (2015). Subject Pool Recruitment Procedures: Organizing Experiments With ORSEE. *Journal of the Economic Science Association 1*(1), 114–125.

Güth, W. and R. Tietz (1990). Ultimatum Bargaining Behavior: A Survey and Comparison of Experimental Results. *Journal of Economic Psychology 11*(3), 417–449.

Handgraaf, M. J., E. Van Dijk, R. C. Vermunt, H. A. Wilke, and C. K. De Dreu (2008). Less Power or Powerless? Egocentric Empathy Gaps and the Irony of Having Little Versus no Power in Social Decision Making. *Journal of Personality and Social Psychology 95*(5), 1136–1149.

Harbring, C. and B. Irlenbusch (2011). Sabotage in Tournaments: Evidence from a Laboratory Experiment. *Management Science 57*(4), 611–627.

Hartmann, M. (2016). *Die globale Wirtschaftselite: Eine Legende*. Campus Verlag.

Heinz, M., S. Juranek, and H. A. Rau (2012). Do Women Behave More Reciprocally than Men? Gender Differences in Real Effort Dictator Games. *Journal of Economic Behavior & Organization 83*(1), 105–110.

Hicks, J. (1963). *The Theory of Wages*. Macmillan.

Kahneman, D. (2003). Maps of Bounded Rationality: Psychology for Behavioral Economics. *The American Economic Review 93*(5), 1449–1475.

Kajackaite, A. and D. Sliwka (2020). Prosocial managers, employee motivation, and the creation of shareholder value. *Journal of Economic Behavior & Organization 172*, 217–235.

Loe, T. W., L. Ferrell, and P. Mansfield (2000). A Review of Empirical Studies Assessing Ethical Decision Making in Business. *Journal of Business Ethics 25*(3), 185–204.

Louis, M. R. (1980). Surprise and Sense Making: What Newcomers Experience in Entering Unfamiliar Organizational Settings. *Administrative Science Quarterly 25*(2), 226–251.

Matsa, D. A. and A. R. Miller (2013). A Female Style in Corporate Leadership? Evidence from Quotas. *American Economic Journal: Applied Economics 5*(3), 136–169.

Melero, E. (2011). Are Workplaces With Many Women in Management Run Differently? *Journal of Business Research 64*(4), 385–393.

Muehlheusser, G., A. Roider, and N. Wallmeier (2015). Gender Differences in Honesty: Groups Versus Individuals. *Economics Letters 128*, 25–29.

Nebel, E. C., J.-S. Lee, and B. Vidakovic (1995). Hotel General Manager Career Paths in the United States. *International Journal of Hospitality Management 14*(3), 245–260.

Neumann, T., S. Kierspel, I. Windrich, R. Berger, and B. Vogt (2018). How to split gains and losses? experimental evidence of dictator and ultimatum games. *Games 9*(4), 78.

New York Times (2015a). Executive Pay: Invasion of the Supersalaries. Business Day, 12 April 2014. http://www.nytimes.com/2014/04/13/business/executive-pay-invasion-of-the-supersalaries.html, last accessed March 2021.

New York Times (2015b). Volkswagen C.E.O. Martin Winterkorn Resigns Amid Emissions Scandal. International Business News, 23 September 2015. http://www.nytimes.com/2015/09/24/business/international/volkswagen-chief-martin-winterkorn-resigns-amid-emissions-scandal.html, last accessed March 2021.

New York Times (2019). Should We Soak the Rich? You Bet! https://www.nytimes.com/2019/10/12/opinion/sunday/taxes-wealth-poverty.html, last accessed March 2021.

New York Times Letters (2015). VW Emissions Scandal: Cheating and Outrage, The Opinion Pages, 24 September 2015. http://www.nytimes.com/2015/09/25/opinion/vw-emissions-scandal-cheating-and-outrage.html, last accessed March 2021.

Niederle, M. and L. Vesterlund (2011). Gender and Competition. *Annual Review of Economics 3*, 601–630.

Ochs, J. and A. E. Roth (1989). An Experimental Study of Sequential Bargaining. *The American Economic Review 79*(3), 355–384.

OECD (2017). Employment: Female share of seats on boards of the largest publicly listed companies. http://stats.oecd.org/index.aspx?queryid=54753, last accessed March 2021.

O'Fallon, M. J. and K. D. Butterfield (2005). A Review of the Empirical Ethical Decision-Making Literature: 1996–2003. *Journal of Business Ethics 59*(4), 375–413.

Oxoby, R. J. and J. Spraggon (2008). Mine and Yours: Property Rights in Dictator Games. *Journal of Economic Behavior & Organization 65*(3), 703–713.

Phelps, E. S. (1972). The Statistical Theory of Racism and Sexism. *The American Economic Review 62*(4), 659–661.

Power, M. (1999). Parasitic-Industries Analysis and Arguments for a Living Wage for Women in the Early Twentieth-Century United States. *Feminist Economics 5*(1), 61–78.

Rees, A. (1993). The Role of Fairness in Wage Determination. *Journal of Labor Economics 11*(1), 243–252.

Rueckert, L., B. Branch, and T. Doan (2011). Are Gender Differences in Empathy Due to Differences in Emotional Reactivity? *Psychology 2*(6), 574–578.

Sawilowsky, S. S. and R. C. Blair (1992). A More Realistic Look at the Robustness and Type II Error Properties of the t Test to Departures From Population Normality. *Psychological Bulletin 111*(2), 352–360.

Scarpello, V. and S. M. Carraher (2008). Are Pay Satisfaction and Pay Fairness the Same Construct? A Cross-Country Examination Among the Self-Employed in Latvia, Germany, the UK, and the USA. *Baltic Journal of Management 3*(1), 23–39.

Schulte-Rüther, M., H. J. Markowitsch, N. J. Shah, G. R. Fink, and M. Piefke (2008). Gender Differences in Brain Networks Supporting Empathy. *Neuroimage 42*(1), 393–403.

Slichter, S. H. (1920). Industrial Morale. *The Quarterly Journal of Economics 35*(1), 36–60.

Sutter, M., R. Bosman, M. G. Kocher, and F. van Winden (2009). Gender Pairing and Bargaining—Beware the Same Sex! *Experimental Economics 12*(3), 318–331.

The Economist (2014). Executive Pay: Moneybags – Should CEOs really be paid less?, 25 October 2014. http://www.economist.com/news/business-books-quarterly/21627553-should-ceos-really-be-paid-less-moneybags, last accessed November 2017.

The Guardian (2014). Tesco boss orders senior staff back to the shop floor, 1 October 2014. https://www.theguardian.com/business/2014/oct/01/tesco-boss-orders-senior-staff-work-shop-floor, last accessed December 2017.

The Guardian (2015a). Companies forced to disclose CEO-workforce pay gap. US income equality, 5 August 2015. http://www.theguardian.com/us-news/2015/aug/05/companies-disclosure-ceo-workforce-pay-gap, last accessed December 2017.

The Guardian (2015b). Morrisons head office managers head to the shop floor in bid to improve trading, 19 March 2015. https://www.theguardian.com/business/2015/mar/19/morrisons-head-office-managers-head-to-the-shop-floor-in-bid-to-improve-trading, last accessed December 2017.

The Guardian (2017a). The Republican tax bill is not just immoral. It is an act of violence, 1 December 2017. https://www.theguardian.com/commentisfree/2017/dec/01/republican-tax-bill-immoral-violence, last accessed December 2017.

The Guardian (2017b). Time to take on greed: why business schools must engage in intellectual activism, 17 January 2017. https://www.theguardian.com/higher-education-network/2017/jan/17/taking-on-greed-business-schools-must-engage-in-intellectual-activism, last accessed December 2017.

Van Boven, L. and G. Loewenstein (2005). Empathy Gaps in Emotional Perspective Taking. In *Other Minds: How Humans Bridge the Divide Between Self and Others*, pp. 284–297. Guilford Press.

Venkatasubramanian, V., Y. Luo, and J. Sethuraman (2015). How Much Inequality in Income is Fair? A Microeconomic Game Theoretic Perspective. *Physica A: Statistical Mechanics and its Applications 435*, 120–138.

Wang, L., D. Malhotra, and J. K. Murnighan (2011). Economics Education and Greed. *Academy of Management Learning & Education 10*(4), 643–660.

Williams, G. (1956). The Myth of "Fair" Wages. *The Economic Journal 66*(264), 621–634.

A Appendix

A.1 Study Details

Our double-blind and gender-controlled experiments were conducted between March and September 2015 (*Baseline*, *Self*) and between September and November 2016 (*ExpBaseline*, *ExpSelf*). There was a total of 500 participants, 250 managers and 250 workers (Compare Figure 6 which excludes 44 participants of the control treatment *BoxBaseline* which is described below). We used the software ORSEE (Greiner, 2015) and HROOT (Bock et al., 2014) to recruit from a mixed student subject pool. The data was elicited at the KD2 Lab of the Karlsruhe Institute of Technology, a German university. To be eligible to participate in economic experiments at the KD2 Lab, potential participants must register to be added to the subject pool. The registration serves as a declaration of intent to participate in experiments. Additionally, specifically for our two studies, all participants signed a contractor's declaration before being admitted into the lab. It has been carefully ensured and stressed before and during the experiment that answers would be handled confidentially and that managers make their decision under complete anonymity. There was no contact between managers and workers at any time.

A.2 Control treatment: *BoxBaseline*

In *ExpBaseline* and *ExpSelf*, managers not only gain experience with the working task but also with the materials (i.e. the boxes and pens workers use). To make sure the sole presence of these materials is not responsible for a change in the perception of the work, we conduct an additional control treatment: *BoxBaseline*. In this treatment, managers know the task not only from a description and pictures, they are provided with the actual working materials (cardboard boxes and pens), all else is held constant to *Baseline*. *BoxBaseline* should be considered an additional control treatment. The additional data from *BoxBaseline* is only included in further robustness checks in section A.3.1. We do not find a significant difference in pay between *Baseline* and *BoxBaseline* (two-sided t-test, p=0.8630,

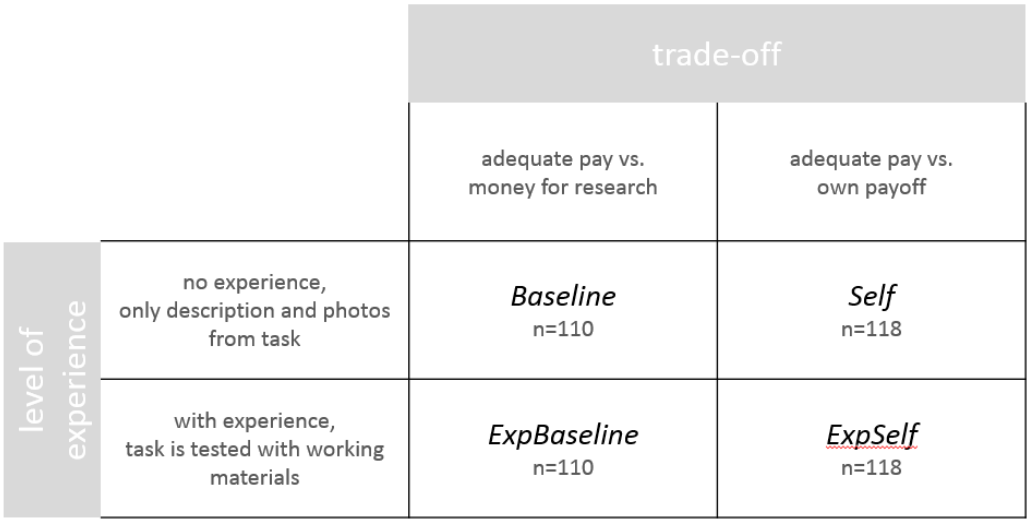


Figure 6: Distribution of participants across treatments

n=77) or the evaluation of the working task (two-sided t-test, p=0.6099, n=77). We thus conclude that changes in *ExpBaselie* and *ExpSelf* do not originate from the presence of the materials provided but from the experience with the task.

A.3 Additional Findings

In the following sections of the appendix, we provide further findings of our experiments. First, we provide a comprehensive analysis of our findings as well as a robustness check in section A.3.1. Furthermore, we report the effects of worker gender in section A.3.2.

A.3.1 Consolidation of Main Results

In the following section, we analyze the results from both experiments in a comprehensive manner. For that, we include both, the treatments with and without personal experience with the working task in our considerations. If suitable, we may also include our data from the *BoxBaseline* treatment. We find that our treatment effects are robust for a variety of controls. We also consolidate the findings on consistency and find the patterns repeated. At last, we discuss the

characteristics and distribution of our data.

Interaction effects of gender and incentives are robust. When we compare the diff-in-diff measures of the treatments with and without experience, we find that in both cases, females decide more consistently across contexts. To further check our findings for robustness, we pool the data from all treatments[7] and conduct an OLS regression (compare table 1). We can confirm that gender of the manager, incentive scheme and the interaction of those two matter in decisions over adequate compensation (see column (1) in table 1). Including not only a control variable for experience, but also measurements for the task evaluation, the opinion on minimum wages and the university entrance degree (Abitur), we can, again, substantiate robustness of our findings (see column (2) in table 1). Furthermore, the regression shows that managers who evaluate the task as more challenging, demanding and worthy, are more likely to set higher pay as an adequate compensation. A positive opinion on minimum wages by law and own personal experience with the working task in our experiments is also correlated with a higher valuation for the work. We also include a control variable for the university entrance degree (Abitur) as a proxy for cognitive ability and find that managers without a university entrance degree tend to consider higher pay adequate. Surprisingly, we do neither find any effects of the Big-5 personality measures (Allport and Odbert, 1936) nor a correlation between a score for Machiavellianism (Christie and Geis, 1970) and the behavior of managers. We do find a correlation between participants' subject of study and the pay determined: students of business and economic sciences determine significantly lower amounts as an adequate pay (10.32 euro for other subjects vs. 9.11 euro for business and economic sciences, two-sided t-test, p=0.011**, n=250). Wang et al. (2011) addressed education in economics as a driver for selfish behavior and a more positive attitude towards greed. However, some bias and demand effects, for instance with regard to prior lessons on profit maximization, can not be ruled out in our data.

[7] As we do not find a significant difference between *Baseline* and *BoxBaseline*, we also include data from *BoxBaseline* in this regression.

	(1)	(2)
Self	-1.410^{**}	-1.174^{**}
	(0.623)	(0.591)
Male	1.218^{**}	1.609^{***}
	(0.602)	(0.572)
Self*Male	-2.624^{***}	-2.801^{***}
	(0.877)	(0.827)
Task Evaluation		0.159^{***}
		(0.045)
Opinion on Minimum Wage		0.322^{***}
		(0.118)
Education		-1.944^{*}
		(1.017)
Experience		1.299^{***}
		(0.419)
Constant	10.441^{***}	7.775^{***}
	(0.426)	(1.349)

Table 1: OLS Regression. The table shows OLS regression coefficients (wage as dependent variable, pooled data, n=250) standard errors in brackets. $***/**/*$ indicate significance on a 1-/ 5-/ 10- percent level respectively.

Looking at the distribution of chosen wages (compare figure 7 and figure 8), we find that the most common pay is 10.50 euro (12.8%) which equals a 50/50 split of the maximum amount between worker and third party or manager, respectively. Inequity aversion according to Fehr and Schmidt (1999) could be one potential explanation for this finding. We furthermore find accumulations at salient points like round numbers (6, 9, 12, 15 euro) and at 8.7 euro which is very close to the current minimum wage in Germany of 8.84 euro (BMAS Bundesamt für Arbeit und Soziales, 2017). Compare e.g. effects of salience or anchoring (Einhorn and Hogarth, 1981; Kahneman, 2003) – specifically, anchoring effects of minimum wages (Fehr et al., 2009) – and relative pay in perceptions of pay fairness (Scarpello and Carraher, 2008), for a potential explanation of these findings.

Our data slightly deviates from a normal distribution (according to a Shapiro-Wilk test, a Kolmogorov-Smirnov test and our interpretation of the plot in figure 8). As mentioned above, we mostly report results of t-tests which is a rather robust test regarding violations of assumptions – like deviations from normal distribution for the case of our data (Sawilowsky and Blair, 1992). Please note that our treatment effects are robust for using Wilcoxon rank-sum (Mann-Whitney) tests or Kolmogorov-Smirnov tests instead.

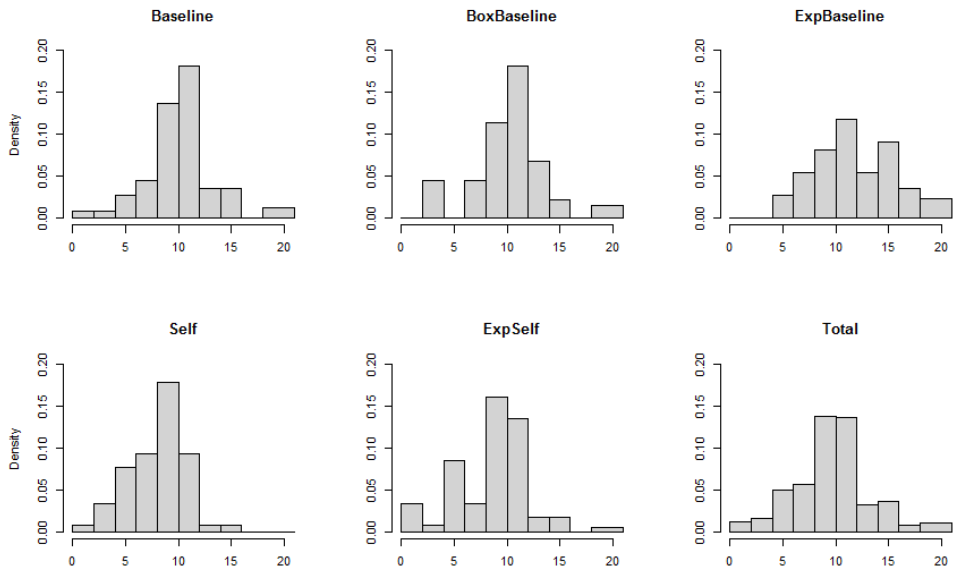


Figure 7: Histograms of pay. This figure illustrates (in a histogram for each treatment and in total) how pay is distributed between 0 and 21 euro.

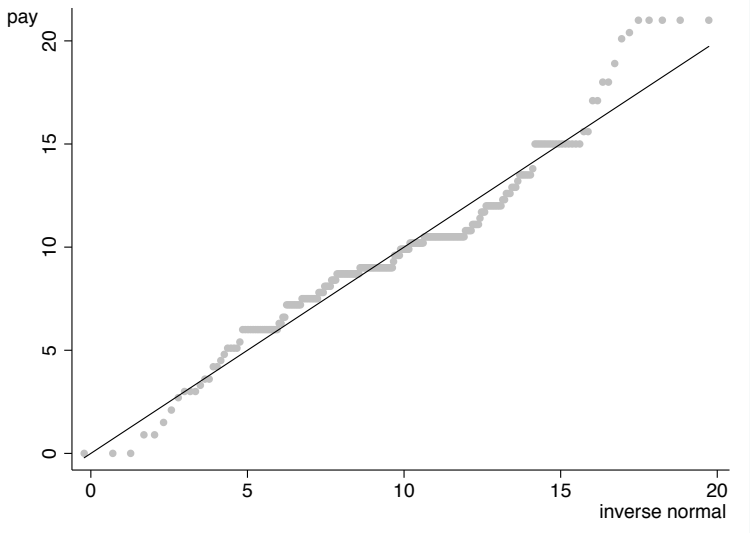


Figure 8: Distribution of pay. This figure illustrates the distribution of pay in comparison to a normal distribution (solid line).

A.3.2 Effects of Worker Gender

In the following section, we provide further findings on the effects of worker gender. In our double-blind and gender-controlled experiment, we also systematically vary the gender of workers to get some first insights whether worker gender matters. Overall, we do not find a significant difference in pay between female and male workers.

In *Baseline* and *ExpBaseline*, we do not find a difference in pay due to workers' gender overall (11.24 euro for male vs. 11.23 euro for female workers, data of *Baseline* and *ExpBaseline* pooled, two-sided t-test, p=0.994, n=110) or in the diff-in-diff measure (male vs. female, diff-in-diff, p=0.763, n=110, compare figure 9). Thus, our data shows no effect of workers' gender or the interaction of workers'- and managers' gender on the wages chosen in *Baseline* or *ExpBaseline*.

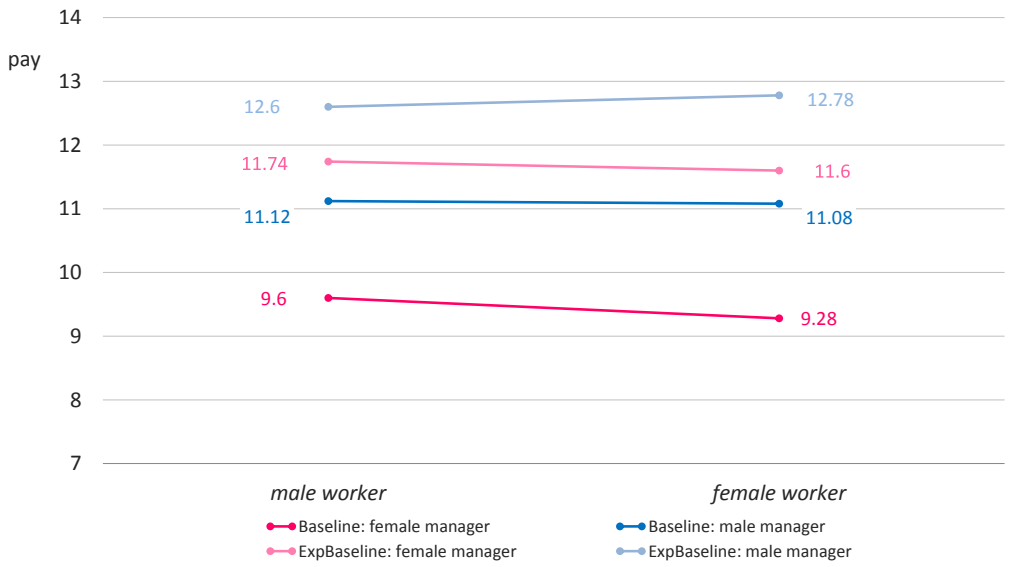


Figure 9: Interaction effect of manager gender and worker gender for *Baseline* trade-offs. Interaction effect of manager gender and worker gender in *Baseline* and *ExpBaseline* (male vs. female manager, diff-in-diff, p=0.763, n=110).

In the *Self* trade-offs, we find suggestive evidence that the gender of a worker affects pay. Again, we do not find an overall difference in pay for female vs. male

workers in *Self* and *ExpSelf* (8.36 euro for male vs. 8.27 euro for female workers, two-sided t-test, p=0.876, n=118). We find in our data that for contexts in which self-interest plays a role, male and female mangers both seem to slightly favor workers of their own gender (pooled data of *Self* and *ExpSelf*, diff-in-diff male vs. female managers, p=0.072*, n=118, compare figure 10). As this result was not hypothesised and all four pairwise differences (male vs. female worker, male or female managers, with or without experience) are not statistically significant, further investigation is necessary for confirmation.

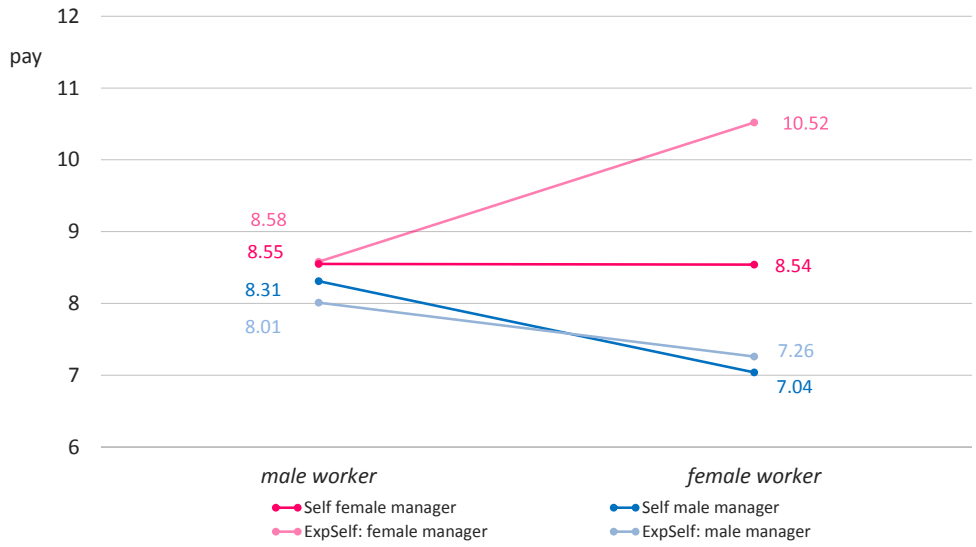


Figure 10: Interaction effect of manager gender and worker gender for *Self* trade-offs. Interaction effect of manager gender and worker gender in *Self* and *ExpSelf* (male vs. female manager, diff-in-diff, p=0.072*, n=118).

In psychology, but also other related fields, gender differences in compassion and empathy have been widely discussed (compare e.g. Eisenberg and Lennon (1983); Goetz et al. (2010); Rueckert et al. (2011)). Although evidence is somewhat mixed, females tend to be considered more compassionate and empathic (compare e.g. Schulte-Rüther et al. (2008)). Thus, one potential explanation for the gender difference we observe could be that female managers are simply more empathic and compassionate when they experience the task prior to the decision.

Considering the additional difference between male and female workers, a potential explanation could be some sort of in-group bias originating from a feeling of belonging to a group of certain gender (Charness and Rustichini, 2011).[8] Also, gender specific role perceptions or even stereotypes might suggest that female workers are more in need of support than males (who could be stereotypically seen as stronger and more resilient (Eagly, 2013; Diekman and Clark, 2015)). Maybe, female managers develop special commiseration towards female workers after having experienced the task themselves. Of course, further research would be needed to clarify the exact mechanisms at work.

Auspurg et al. (2017) have argued that females accept disadvantages in pay. Please note that we do not find an overall disadvantage for female workers in our data. Also, we do not find a difference in pay satisfaction due to gender of the worker (nor due to the gender of the manager). Overall, as well as for very low and very high wages, females and males are equally (un)satisfied with their pay. Satisfaction with pay is elicited using a 7-point Likert-scale.

We measure working times for completion of the task as a control for possible gender differences in performance. Due to technical and procedural limitations, we only have data on a subset of workers. In this subset of 156 workers, we do not find a significant difference in working times due to gender. On average, it takes participants about 48 minutes to complete the working task. About 5 to 10 more minutes are needed to check working results for completeness and to process payoffs. Thus, the description of the working task slightly overestimates actual working times. Yet, in our data, performance does not differ between male and female workers.

[8]Please note that there is also experimental research pointing into the direction, that cooperativeness is lower towards others of the same gender (compare e.g. Ben-Ner et al. (2004); Sutter et al. (2009)).

A.4 Instructions

All participants receive the instructions on paper, managers furthermore take their pay decision on paper. The instructions consist of three parts: a welcoming sheet explaining the general rules of economic experiments (1 page), a description of the experiment, the work and a short summary (3 pages) as well as – for the manager – an answer sheet (2 pages).

We provide examples for the instructions of a manager as well as a worker that include all relevant text sections for the conducted experiment. The welcoming sheet is identical for all participants (compare figure 11). According to treatment, the instructions differ in three aspects: gender of worker or manager[9], description of the manager's trade-off and exemplification or experience of the working task. Otherwise, the instructions are held as constant as possible across treatments and as symmetric as possible for the roles of managers and workers.

The first example shows the instructions for a manager in the *ExpSelf* treatment deciding over the pay of a male worker (compare figures 12 - 14 for the description of the experiment, the working task and a summary; compare figures 15 - 16 for the respective answer sheet). The second example shows the instructions for a worker in the *Baseline* treatment in the case of a female manager (compare figures 17 - 19). Complete instructions for all other treatments and combinations are available upon request.

[9]Due to the characteristics of the German language, we used the gendered version of the word "employer" (for managers) or "employee" (for workers) in the sections after the gender has been revealed. By that, we tried to reveal gender in the most natural way possible. Overall, the gendered/female version of these words is included a total of 4 times in the instructions and once on the answer sheet for managers. The neutral/male version of the word is being used more often in the instructions.

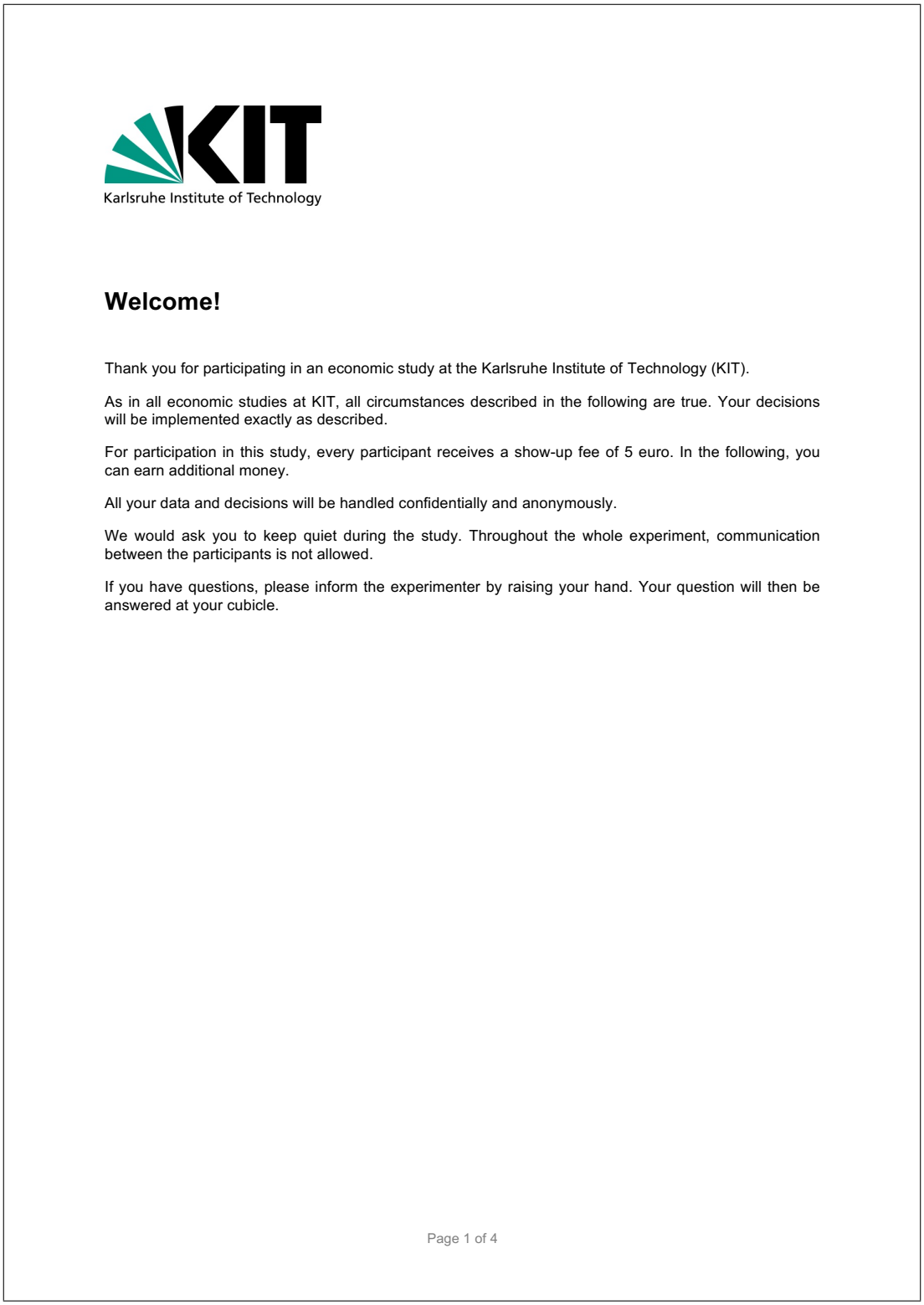


Figure 11: Welcome page for managers and workers. The welcome page from instructions is identical for all participants.

Instructions

In this study, there are employers and employees.

One employer decides upon the wage of one employee.

Regardless of your person, it was decided whether you are an employer or an employee.

You are an employer.

You decide upon the wage of an employee. The employee does not take **any active decision** on the wage.

As you, each employee receives 5 euro for participating in this study and additionally a payment – determined by you – for a work done. This employee is a man who also participates in this study like you.

The maximal wage for this work is 21 euro. Please determine the wage as you consider it adequate. You will receive the other part of the money in a sealed envelope at the end of this study, additionally to the 5 euro for participation. The experimenter will not know what wage you determined. Thus, you decide on the division of 21 euro, of which one part is the wage for your employee and the other part is benefitting you.

Each employee carries out the following work:

Complete disassembly of 100 pens as well as

assembly of 100 pens.

This task requires about **1 hour** of working time for each employee.

For exemplification, you will find a photo attached. On the photo, you can see an assembled pen and a completely disassembled pen. There are wo boxes with pens in front of you on the table. In one box, you will find 100 assembled pens and in one box there are 100 completely disassembled pens. All employees will work with exactly the same sorting boxes and pens.

The task will be done today or in the following days. As all employees, your employee will get to know which payment he will receive after complete execution of the work.

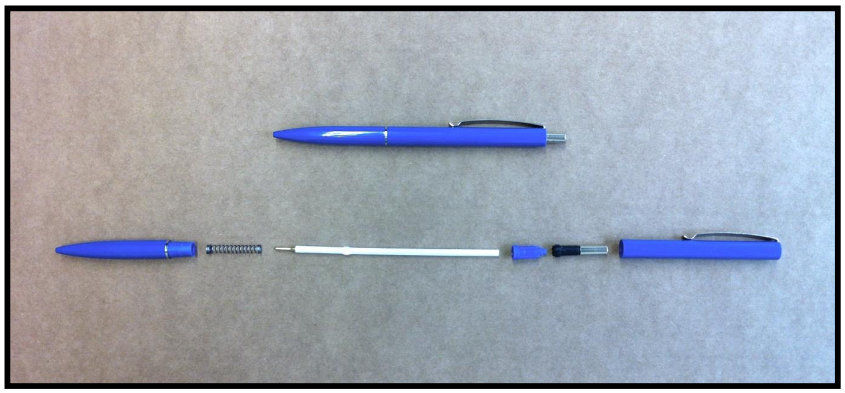
The employees will not know who decided upon their wage.

After you have taken your decision, we would like to ask you to anonymously and briefly answer some questions.

Figure 12: Instructions for managers in *ExpSelf*. The example depicts the instructions for managers in *ExpSelf* deciding over a male worker (1/3).

Photo for Exemplification of the Work

An assembled pen (above)
and a completely disassembled pen (below):



Please completely disassemble one pen and assemble one pen, now.

Please use the provided boxes for this.

Then, please continue reading the instructions.

Figure 13: Instructions for managers in *ExpSelf*. The example depicts the instructions for managers in *ExpSelf* deciding over a male worker (2/3).

Summary

Earlier and regardless of your person, it was decided that you are an employer.

You will decide upon the wage of an employee who will completely disassemble 100 pens and completely assemble 100 pens.

Your employee is a man who also participates in this study like you.

Please determine the wage how you consider it adequate. The other part of the 21 euro will benefit you. You will receive the money in a sealed envelope together with the show-up fee.

You decide with the answer sheet which lies in front of you.

Figure 14: Instructions for managers in *ExpSelf*. The example depicts the instructions for managers in *ExpSelf* deciding over a male worker (3/3).

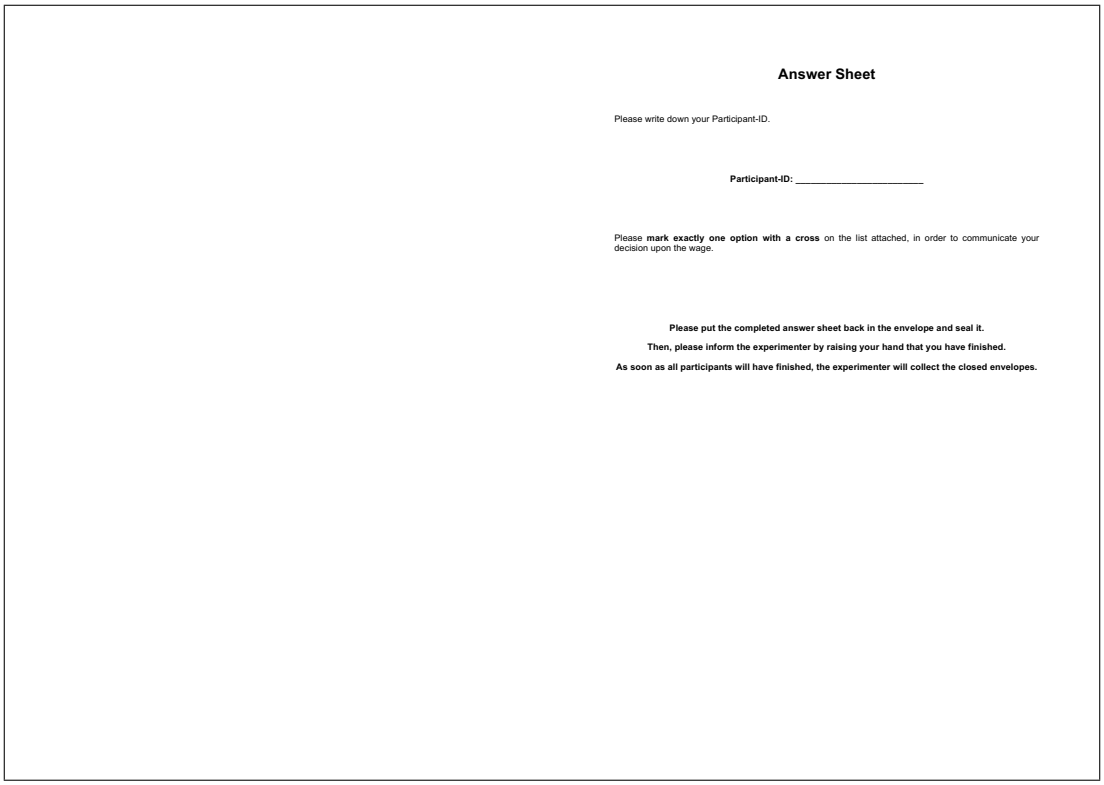


Figure 15: Answer sheet for managers in *ExpSelf*. The example depicts the answer sheet for managers in *ExpSelf* deciding over a male worker (1/2).

Please determine the wage how you consider it adequate. Please make an X in **exactly one box** in the following list:

Your decision (mark with an X)	Wage of Employee
☐	+ 0.00 €
☐	+ 0.30 €
☐	+ 0.60 €
☐	+ 0.90 €
☐	+ 1.20 €
☐	+ 1.50 €
☐	+ 1.80 €
☐	+ 2.10 €
☐	+ 2.40 €
☐	+ 2.70 €
☐	+ 3.00 €
☐	+ 3.30 €
☐	+ 3.60 €
☐	+ 3.90 €
☐	+ 4.20 €
☐	+ 4.50 €
☐	+ 4.80 €
☐	+ 5.10 €
☐	+ 5.40 €
☐	+ 5.70 €
☐	+ 6.00 €
☐	+ 6.30 €
☐	+ 6.60 €
☐	+ 6.90 €
☐	+ 7.20 €
☐	+ 7.50 €
☐	+ 7.80 €
☐	+ 8.10 €
☐	+ 8.40 €
☐	+ 8.70 €
☐	+ 9.00 €
☐	+ 9.30 €
☐	+ 9.60 €
☐	+ 9.90 €
☐	+ 10.20 €
☐	+ 10.50 €
☐	+ 10.80 €
☐	+ 11.10 €
☐	+ 11.40 €
☐	+ 11.70 €
☐	+ 12.00 €
☐	+ 12.30 €
☐	+ 12.60 €
☐	+ 12.90 €
☐	+ 13.20 €
☐	+ 13.50 €
☐	+ 13.80 €
☐	+ 14.10 €
☐	+ 14.40 €
☐	+ 14.70 €
☐	+ 15.00 €
☐	+ 15.30 €
☐	+ 15.60 €
☐	+ 15.90 €
☐	+ 16.20 €
☐	+ 16.50 €
☐	+ 16.80 €
☐	+ 17.10 €
☐	+ 17.40 €
☐	+ 17.70 €
☐	+ 18.00 €
☐	+ 18.30 €
☐	+ 18.60 €
☐	+ 18.90 €
☐	+ 19.20 €
☐	+ 19.50 €
☐	+ 19.80 €
☐	+ 20.10 €
☐	+ 20.40 €
☐	+ 20.70 €
☐	+ 21.00 €

Figure 16: Answer sheet for managers in *ExpSelf*. The example depicts the answer sheet for managers in *ExpSelf* deciding over a male worker (2/2).

Instructions

In this study, there are employers and employees.

One employer decides upon the wage of one employee.

Regardless of your person, it was decided whether you are an employer or an employee.

You are an employee.

You do work and receive a wage for that. You do not take **any active** decision on the wage.

You receive 5 euro for participating in this study as well as a wage for a work done which has been determined by your employer. Your employer is a woman who also participates in this study like you.

The maximal wage for your work is 21 euro. Your employer has determined the wage as she considered it adequate. The other part of the money will be used for other research projects which means it will be used productively. Thus, your employer decided upon the distribution of 21 euro, of which one part is your wage and the other part benefits research.

You will carry out the following work:

Complete disassembly of 100 pens as well as

assembly of 100 pens.

This task requires about **1 hour** of working time for each employee.

For exemplification, you will find two photos attached. On the first photo, you can see an assembled pen and a completely disassembled pen. On the second photo you can see a box with 100 assembled pens and one box with 100 completely disassembled pens. You will work with exactly the same sorting boxes and pens.

An employer decided today or in the last days upon your wage. The amount of your wage will be disclosed and paid out in cash after the complete execution of the work.

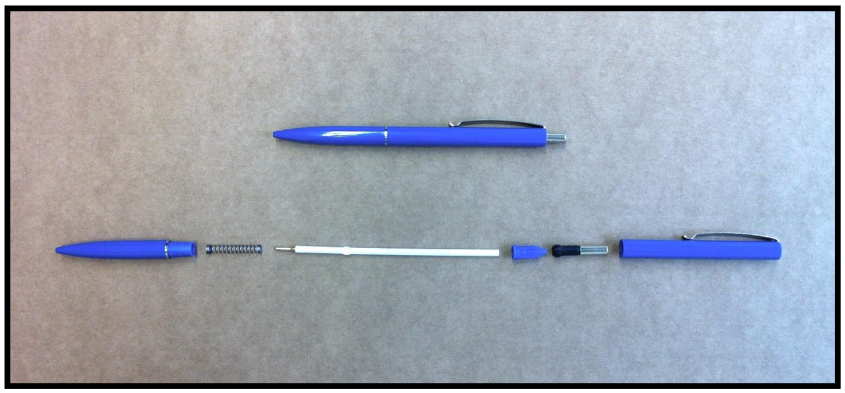
You will not know who decided upon your wage.

Before you start your work, we would ask you to anonymously and briefly answer some questions.

Figure 17: Instructions for workers in *Baseline*. Instructions for workers in *Baseline* in the case of a female manager (1/3).

Photo for Exemplification of the Work

An assembled pen (above)
and a completely disassembled pen (below):



A sorting box with 100 assembled pens (left)
and a sorting box with 100 completely disassembled pens (right):

Figure 18: Instructions for workers in *Baseline*. Instructions for workers in *Baseline* in the case of a female manager (2/3).

Summary

Earlier and regardless of your person, it was decided that you are an employee.

You will carry out the following work:

Complete disassembly of 100 pens as well as assembly of 100 pens.

An employer decided upon your wage beforehand. Your employer is a woman who participates in this study like you.

Your employer determined the wage how she considered it adequate. The other part of the 21 euro will benefit research.

You will be informed about the amount of your wage after you have completed your work and you will receive it in cash.

Figure 19: Instructions for workers in *Baseline*. Instructions for workers in *Baseline* in the case of a female manager (3/3).