Determinants of Bonus Payments for Employees in Companies.
A Multi-Level Factorial Survey Study.

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Allocation Games

Giving behaviour is studied in allocation games

- Dictator Games (Kahneman et al. 1986)
- Ultimatum Game (receiver has veto power) (Güth et al. 1982)

Behavior in allocation games sensitive to

- anonymity (Cherry et al. 2002)
- property rights (Oxoby/Spraggon 2008)
- group membership (Tajfel/Turner 1979)
- social status (Liebe/Tutic 2010)
- fairness ideals (Cappellen et al. 2005)
- and to several other factors (Camerer 2003)
Possible restrictions

What are possible restrictions of these studies?

- isolated evidence for effects
- student sample (Levitt/List 2007)
- neutral setting
Approach

factorial survey study

field sample (entrepreneurs of small/medium sized companies)

field setting (allocation of a jointly produced resource with employees differing among other things in their efficiency, their duration of belonging, their occupational position)

bonus payment 0 – 10,000 Euro for employees as an indicator of prosociality
Motives for giving

- egoistic preferences
- social preferences

When is the "giver" expected to give nothing?

- no shadow of the future
- anonymity

- "earned" wealth
Mechanisms for social preferences

internal mechanisms
- empathy
- ”warm glow”

external mechanisms
- reputation/signalling
- social desirability

fairness norms/reciprocity norm
- altruistic motives
- egoistic motives
- interdependent preferences
Research interest

What are we investigating?

- What is the relative effect of strategic motives and the preference for a fair allocation?

- How is the allocation affected by the transparency of the situation?

Example: Bonus payments in companies
Hypotheses- Fairness

The employees’ contribution to the jointly produced resource are evaluated according to fairness norms. We refer to the rule of proportionality (resp. equity norm).

- \(H1.1:\) The bonus payment is higher the better the employees’ performance.

- \(H1.2:\) The bonus payment is higher the higher the employees’ tenure.
Hypotheses- Strategic Motivation

Ultimatum Games show that people with bargaining power (veto) get a higher share than people without (Camerer 2003). Average amount given in DG: 28% (Engel 2011) and in UG: 20-50% (Henrich et al. 2009).

- **H2.1**: The bonus payment is higher if the employee is member of a union.

- **H2.2**: The bonus payment is higher if the employee has job market advantages.

- **H2.3** The bonus payment is higher the higher the occupational status of the employee.
Hypotheses- Transparency

If the employees know that a pie exists the incentive to pay a bonus is increased, since employees may expect a reward.

If the employees know how the pie is allocated the incentive to pay a bonus is increased further, since employees can judge the employers generosity.

$H3 : The \textit{more transparent the allocation situation, the higher the average bonus payment}.$
Information dimensions generate different social expectations and therefore affect social preferences differently.

Strategic preferences get only activated when employees know that a pie exists.

\textit{H4.1} : \textit{The effects of sanctioning power do not appear in the completely intransparent situation.}
Since the employer wants to avoid dissatisfaction among less rewarded employees, the pie is allocated more equally when his employees know how the pie is allocated. Therefore the equity norm is inhibited due to \textit{signal} a more agreeable fairness ideal.

\textbf{H4.2: The hypothesized effects of the fairness are weaker under complete transparency.}
### Table: Indicators and levels

<table>
<thead>
<tr>
<th></th>
<th>levels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>tenure</strong></td>
<td>1 year</td>
</tr>
<tr>
<td></td>
<td>5 years</td>
</tr>
<tr>
<td></td>
<td>10 years</td>
</tr>
<tr>
<td><strong>performance</strong></td>
<td>below-</td>
</tr>
<tr>
<td></td>
<td>average</td>
</tr>
<tr>
<td></td>
<td>above-</td>
</tr>
<tr>
<td><strong>union membership</strong></td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>no</td>
</tr>
<tr>
<td><strong>occupation</strong></td>
<td>worker</td>
</tr>
<tr>
<td></td>
<td>craftsman</td>
</tr>
<tr>
<td></td>
<td>manager</td>
</tr>
<tr>
<td><strong>job market opp.</strong></td>
<td>in favour of employee</td>
</tr>
<tr>
<td></td>
<td>in favour of employer</td>
</tr>
<tr>
<td><strong>age</strong></td>
<td>30 years</td>
</tr>
<tr>
<td></td>
<td>45 years</td>
</tr>
<tr>
<td></td>
<td>60 years</td>
</tr>
<tr>
<td><strong>sex</strong></td>
<td>male</td>
</tr>
<tr>
<td></td>
<td>female</td>
</tr>
</tbody>
</table>
118 Vignettes (population: 648; design drawn with SAS) randomly distributed on 9 vignette decks

12 vignettes for each respondent

7 vignette dimensions (factors)

Each respondent randomly put into one of three different decision environments
Transparency of allocation

Table: Decision environments differing in information given to employees

<table>
<thead>
<tr>
<th></th>
<th>Payment secret</th>
<th>Payment open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know pie exists</td>
<td>part. transparent</td>
<td>compl. transparent</td>
</tr>
<tr>
<td>Don’t know pie exists</td>
<td>compl. intransparent</td>
<td></td>
</tr>
</tbody>
</table>
Email addresses were drawn from Gelbe Seiten

Online survey via UNIPARK

1,392 addresses (Leipzig, Hannover, Cologne, areas in Bavaria)

171 started the questionnaire; 73 finished; response rate 5%
### Sample characteristics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Mean/Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>all situations</td>
</tr>
<tr>
<td>human resource</td>
<td>100%</td>
</tr>
<tr>
<td>age</td>
<td>51</td>
</tr>
<tr>
<td>in company for ... years</td>
<td>15</td>
</tr>
<tr>
<td>company existing for ... years</td>
<td>32</td>
</tr>
<tr>
<td>company size</td>
<td>37</td>
</tr>
<tr>
<td>service</td>
<td>46%</td>
</tr>
<tr>
<td>industry</td>
<td>31%</td>
</tr>
<tr>
<td>craft</td>
<td>23%</td>
</tr>
</tbody>
</table>
Constant information for all decision environments:

- company has been existing for 10 years
- unexpected high success within the last two years
- employer has not been rewarded yet
- employees don’t know their maximum reward
- each employee is rewarded independently
Hier sind noch einmal die wichtigsten Punkte der Ausgangssituation zusammengefasst:

- Das Unternehmen existiert seit zehn Jahren
- Großer wirtschaftlicher Erfolg in den letzten beiden Jahren
- Die MitarbeiterInnen sind über die wirtschaftliche Situation informiert
- Die Bonuszahlung erfolgt geheim
- Die MitarbeiterInnen wissen nicht, wie viel sie maximal an Bonus bekommen können
- Sie haben selbst noch keinen Bonus erhalten

Fall 7:


Welchen Betrag zahlen Sie dieser Person aus? Der Restbetrag geht in ihr eigenes Vermögen über.
(Please unter die Leiste klicken)
Distribution of bonus payment: students vs. employers
Distribution of bonus payment between decision environments

Boxplots for bonus payments by situations
AME without differentiating between decision environments

Average Marginal Effects with 95% CIs

- age (60 years)
- age (45 years)
- sex (f)
- tenure (10 years)
- tenure (5 years)
- above avg. perform.
- average perform.
- unionmember
- job market opp.
- manager
- craftsman
- transparent sit.
- part. transparent sit.

Effects on Linear Prediction

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Determinants of Bonus Payments for Employees in Companies.
## Effects by situations

<table>
<thead>
<tr>
<th></th>
<th>situation intraparent</th>
<th>interaction terms intran vs. other</th>
<th>situation partly transparent</th>
<th>interaction terms comp. trans vs. other</th>
<th>situation comp. transparent</th>
</tr>
</thead>
<tbody>
<tr>
<td>age (45 years)</td>
<td>0.29</td>
<td>-0.23</td>
<td>-0.14</td>
<td>0.35</td>
<td>0.38*</td>
</tr>
<tr>
<td>age (60 years)</td>
<td>0.10</td>
<td>0.45</td>
<td>0.75*</td>
<td>0.87</td>
<td>0.50**</td>
</tr>
<tr>
<td>sex (f)</td>
<td>-0.12</td>
<td>-0.02</td>
<td>0.07</td>
<td>-0.28</td>
<td>-0.30*</td>
</tr>
<tr>
<td>tenure (5 years)</td>
<td>0.87***</td>
<td>-0.03</td>
<td>1.06***</td>
<td>-0.38</td>
<td>0.63***</td>
</tr>
<tr>
<td>tenure (10 years)</td>
<td>1.78***</td>
<td>-0.40</td>
<td>1.41***</td>
<td>-0.35</td>
<td>1.31***</td>
</tr>
<tr>
<td>average performance</td>
<td>0.83***</td>
<td>-0.18</td>
<td>0.77**</td>
<td>-0.26</td>
<td>0.56**</td>
</tr>
<tr>
<td>above average performance</td>
<td>2.44***</td>
<td>-0.37</td>
<td>2.63***</td>
<td>-1.11***</td>
<td>1.53***</td>
</tr>
<tr>
<td>unionmember</td>
<td>-0.07</td>
<td>-0.03</td>
<td>-0.40</td>
<td>0.30</td>
<td>-0.07</td>
</tr>
<tr>
<td>job market opp. (employer)</td>
<td>-0.38*</td>
<td>0.23</td>
<td>-0.43</td>
<td>0.45*</td>
<td>0.06</td>
</tr>
<tr>
<td>craftsman</td>
<td>0.30</td>
<td>0.31</td>
<td>0.62*</td>
<td>0.02</td>
<td>0.53**</td>
</tr>
<tr>
<td>manager</td>
<td>0.18</td>
<td>0.39</td>
<td>0.82*</td>
<td>-0.23</td>
<td>0.30</td>
</tr>
<tr>
<td>constant</td>
<td>1.87***</td>
<td>1.29**</td>
<td>2.68***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sigma_u</td>
<td>1.96***</td>
<td>1.96***</td>
<td>1.94***</td>
<td></td>
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<tr>
<td>sigma_e</td>
<td>1.47***</td>
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<tr>
<td>rho</td>
<td>0.64</td>
<td>0.64</td>
<td>0.63</td>
<td></td>
<td></td>
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<tr>
<td>N vignettes</td>
<td>861</td>
<td>861</td>
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<tr>
<td>N probands</td>
<td>81</td>
<td>81</td>
<td>81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Random intercept models: *p < 0.05, **p < 0.01, ***p < 0.001
Summary and discussion

Effects of fairness norm (H1)

- stable and consistent effects of fairness
- fairness norm important in context of companies
- observed social preferences do not necessarily indicate subjective social preferences

Effects of sanctioning power (H2)

- expected effects of occupational status
- contradictory effects of union membership and job market opportunities
- is sanctioning power less important because of fairness norms?
Effects of transparency ($H3$ and $H4$)

- increase in average bonus payment with increasing transparency
- inhibition of performance effect
- signalling of trustworthiness and cooperativeness
- establishing reputation
Restrictions

- fictional setting (resource, employees, payment)
- theoretical mechanism may overlap
- lower internal validity, higher external validity
- low return rate (small sample); selection bias?
- no control over data collection
- incomplete responses (especially questionnaire); therefore no use of control variables


