

Measuring Trust in Companies

Introduction

Trust is not directly measurable. What can be measured are only indicators for trust. Therefore researchers mostly use questionnaires. Sometimes also interviews have been applied. But these methods have serious weaknesses: what they measure are not facts, they measure the self-perception of the participants. And there is another fact that has to be criticized: Many researchers create interaction by a special test assembly. They take randomly chosen people (mostly students) and simulate leadership relations. So what they observe or measure is trust in an artificial situation which may differ from trust in real existing leadership relations.

This paper is going to go a different way. It discusses an experimental design which is going to be applied in real employer/employee relationships, in order to observe gender specific trusting behavior by the actions of superiors and subordinates. This paper is a concept which tries to solve problems of validity regarding a quasi-experimental design applied in the environment of companies. The concept is based on the trust- or investment-game, originally designed by Berg, Dickhaut and McCabe¹. The author has adopted and adapted the design of the trust game so that it easily can be used directly in companies. The leaders are in a situation to invest virtual money in their followers as budget for an interdisciplinary project and the followers have the opportunity to reciprocate a certain amount to the leaders.

Foundation of the Methodology

Reviewing literature, trust research has mostly been measured by questionnaire. In 1996 Schein criticizes the approach of measuring organizational culture instead of observing it.

¹ Berg, J.; Dickhaut, J.; McCabe, K. Trust, Reciprocity, and Social History. *Games and Economic Behavior* 1995, No. 10, 122–142

27 With this Schein criticized himself, as he measured organizational culture for many years.
 28 And he states that only observation can bring organization studies to advance.²

29 Some years later Glaeser et. al. criticized also measurement (of trust) by questionnaire. In
 30 their paper they compared the outcomes of questionnaires with real behavior. They stated:
 31 "In recent years, economists have tried to identify the impact of social capital by using
 32 attitudinal measures of trust from survey questionnaires."³ And further they criticized that
 33 the questions often were "vague, abstract, and hard to interpret"⁴. But the most astonishing
 34 finding is that the standard attitudinal questions generally did not predict subject choices in
 35 their experiments⁵. But they found out that specific behavioral questions did correlate (at
 36 least marginally significant) with the participant's behavior in their experiments.⁶ In spite
 37 of these findings surprisingly some years later Dietz et.al. thought that they found a gap:
 38 "However, of further interest here is whether the intention to act is translated into actual
 39 risk-taking behaviours. This "gap" is ripe for research."⁷

40 Yet the author cannot fully understand this statement as Glaeser et al. seem to have already
 41 closed that gap, as trusting behaviour also always is risk-taking behaviour.

42 One of the two experiments applied by Glaeser was an adapted version of the trust game
 43 which will be described later on.

44 Beside the method of measuring trust by questionnaires instead of observing trusting
 45 behavior there is another reason for critique regarding trust in leadership relations: mostly
 46 the participants are not in a real leadership relation but students – about 75 %, which a
 47 meta study from 2011 found out⁸.

48

² Schein, E. H. Culture: The Missing Concept in Organization Studies. *Administrative Science Quarterly* **1996**, 41 (2), 229–240

³ Glaeser, E. L.; Laibson, D. I.; Scheinkman, J. A.; Soutter, C. L. Measuring trust. *The quarterly journal of economics* **2000**, 115(3), 811–846

⁴ Glaeser, E. L.; Laibson, D. I.; Scheinkman, J. A.; Soutter, C. L. Measuring trust. *The quarterly journal of economics* **2000**, 115(3), 811–846

⁵ Glaeser, E. L.; Laibson, D. I.; Scheinkman, J. A.; Soutter, C. L. Measuring trust. *The quarterly journal of economics* **2000**, 115(3), 811–846

⁶ Glaeser, E. L.; Laibson, D. I.; Scheinkman, J. A.; Soutter, C. L. Measuring trust. *The quarterly journal of economics* **2000**, 115(3), 811–846

⁷ Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5), 557–588.
<http://www.worldcat.org/oclc/670199743>

⁸ The percentages of Johnson and Mislin's results have been counted by hand by the author of this thesis. Johnson, N. D.; Mislin, A. A. Trust games: A meta-analysis. *Journal of economic psychology : research in economic psychology and behavioral economics* **2011**, 32 (5), 865–889

Often students have been recruited for creating a leadership simulation. For example Friedrich investigated trust in virtual leadership relations. And so Friedrich limited, that her results were not qualified to make statements to cooperative behavior in real leadership relations⁹. Experiments regarding trust in real (not virtual or simulated) leadership relations are rare i.e. the author didn't find such publications.

Traditional measurement of trust

The latter statement can be underlined by Dietz et al. who reviewed 14 different measures of measuring trust inside organizations. This paper provides a good and actual overview over the most common measurements of trust. And at the very beginning of their paper they were arguing that the existing measurements are not fully satisfying: "Such a range of possible operationalisations may reflect the multi-disciplinary interest in trust, and its multi-dimensional nature, but it also hints at continuing dissatisfaction with the existing set of measures, an impression strengthened by the fact that there has been very little in the way of repeat testing of the instruments that we do have."¹⁰ So this motivated the authors to review the most common measures of trust.

They stated that "all of the measures have been used in high-quality research studies that have either been published in international journals or, [...] presented at the Academy of Management."¹¹

But all measures were "only" questionnaires. Yet answering questionnaires is quite common in in practice. Most of employees and executives are used to them and may feel hardly disturbed in their workflow. Beside that the distribution and the analysis of questionnaires are easy. Observing trusting behavior or doing experiments within the staff might cause disturbance in workflow and reactance within the probands. These problems are going to be discussed later but surely are the explanation for applying questionnaires instead of alternative approaches.

⁹ Friedrich, C. *Determinanten der Einschätzung vertrauenswürdigen Verhaltens von Transaktionspartnern. ein anwendungsorientierter Erklärungsbeitrag zur Bildung subjektiver Wahrscheinlichkeiten*, 2004

¹⁰ Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5), 557–588. <http://www.worldcat.org/oclc/670199743>

¹¹ Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5), 557–588. <http://www.worldcat.org/oclc/670199743>

76 The aim of Dietz et al. was to ask whether the questions really measure what they intend to
77 measure: namely trust. Following Bryman et al. the cited Dietz et al. reviewed the
78 "measurement validity"¹² of the questionnaires. Therefore they divided trust into three
79 parts:

- 80 1. Trust as a belief
- 81 2. Trust as a decision
- 82 3. Trust as an action.¹³

83 Briefly they saw the „belief“ as an assessment of the trustworthiness of the trustee. This
84 may lead to the „decision“ to trust an probably (not necessarily) to a trusting action. For
85 the evaluation of the trustee's trustworthiness they found that the following four attributes
86 appear most often in literature:

- 87 • Ability
- 88 • Benevolence
- 89 • Integrity and
- 90 • Predictability¹⁴

91

92 After preparing this theoretical background they reviewed whether the questionnaires ask
93 valid questions. They came to the result that most of the reviewed questionnaires focus on
94 trusting belief and „Few test for the respondent's intention to act, and still fewer for actual
95 trust-inspired behaviours.“¹⁵ Unfortunately the trusting belief is the weakest predictor for
96 future behaviour. The stronger predictor is the intention to trust and strongest are
97 behavioural estimation items.¹⁶ But as strong the predictors may be – they are only
98 predictors and probabilities. Trusting behaviour can never be fully captured with
99 questionnaires.

¹² Bryman, A.; Bell, E. *Business research methods*, 2nd; Oxford University Press: Oxford ;, 2007

¹³ Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5), 557–588.
<http://www.worldcat.org/oclc/670199743>

¹⁴ Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5), 557–588.
<http://www.worldcat.org/oclc/670199743>

¹⁵ Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5), 557–588.
<http://www.worldcat.org/oclc/670199743>

¹⁶ Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5), 557–588.
<http://www.worldcat.org/oclc/670199743>

100 As already stated it is easier to „measure“ trust with questionnaires than observing real
101 behaviour as questionnaires can be distributed broadly while observation of behaviour
102 needs exactly defined settings. So the aim of this paper is to create a methodology, based
103 on the trust game, which allows observing trusting behavior in existing leadership
104 relations. This goes along with organizational problems and requires some adaption in
105 order to get valid results.

106 The Trust Game

107 The trust game has initially been created by Berg et. al. At this time they called this
108 experiment “investment game”. Later on researchers, like Glaeser or Sutter, called this
109 setting “trust game”. Here we are going to use the term “trust game” – synonymously for
110 the investment game. Berg et. al. designed this special experiment to study trust and
111 reciprocity before the background of the fundamental assumption that individuals act
112 selfishly.¹⁷ The core of the setting was that person A, called the trustor, transfers money to
113 person B, called the trustee. Sending money from the trustor to the trustee means that he or
114 she is going to place trust. The money that the trustor sent has been tripled. So the trustee
115 received the tripled amount. Then the trustee had to decide how much money she or he is
116 willing to send back, i.e. to reciprocate, which means to keep trust, i.e. to act trustworthy.¹⁸

117 This experiment has been adopted and adapted by many researchers. The already cited
118 Glaeser et. al. took this design and adapted it in some ways and applied it to 274 students
119 from which 189 completed all parts of the study.¹⁹ While Berg took the trusting partners
120 randomly, Glaeser decided to take also participants who had already known each other.
121 Furthermore they doubled the money sent, instead of triple it; they did not repeat the
122 procedure (as Berg did it); they combined the experiment with questionnaires and promises
123 about future action.²⁰

124 One of the recent studies using the trust game, applied by Sutter et. al., is devoted to the
125 question of how trust and trustworthiness behavior occur over different age groups. There
126 were 662 subjects of six different age groups in this experiment. The participants were

¹⁷ Berg, J.; Dickhaut, J.; McCabe, K. Trust, Reciprocity, and Social History. *Games and Economic Behavior* **1995**, No. 10, 122–142

¹⁸ Berg, J.; Dickhaut, J.; McCabe, K. Trust, Reciprocity, and Social History. *Games and Economic Behavior* **1995**, No. 10, 122–142

¹⁹ Glaeser, E. L.; Laibson, D. I.; Scheinkman, J. A.; Soutter, C. L. Measuring trust. *The quarterly journal of economics* **2000**, 115(3), 811–846

²⁰ Glaeser, E. L.; Laibson, D. I.; Scheinkman, J. A.; Soutter, C. L. Measuring trust. *The quarterly journal of economics* **2000**, 115(3), 811–846

127 asked to transfer money to another person, who gets three times the amount that has been
128 sent. The person who transfers the money, so the trusting person, hopes that the recipients
129 returns some money to him again.²¹ Sutter found "...differences in trustor behavior across
130 the six age groups. In particular, we find that transfers x increase monotonically from 8-
131 year-old children to students, ranging from 2.0 for primary school children to about 6.6 out
132 of 10 units of money for students.⁹ Within our adult groups of students, professionals, and
133 retired persons, we find that average transfers are almost identical for students and
134 professionals, and (insignificantly) lower in our group of retired persons."²²

135 So regarding the game-design in the recent thesis there are two possible ways for
136 measuring the outcome:

137 1. Simple reciprocity - sometimes also called "one-shot" (as used by Sutter et
138 al. or Glaeser et al.): Person A transfers money, person B returns an amount, then
139 the game ends.

140 2. Multiple reciprocity (as initially used by Berg et. al): After person A
141 received money back from person B, person A transfers another time and the game
142 is only stopped by the researcher.

143 For the recent research it is only possible to use the simple reciprocity. It is crucial to not,
144 or hardly, disturb the ongoing leadership relation. So for this reason it is not useful to let
145 the superior know how much money the subordinate returns.

146 The experimental design of the trust game corresponds to the theory of reciprocal altruism.
147 Briefly described, the altruist gives something that causes him less loss then the other gets
148 profit. And he does so because he trusts that his counterpart acts simultaneously on a later
149 moment.²³

150 In the above mentioned experiments the one who trusts (or "the trustor") is the altruist. He
151 sends less money than the other gets. The only difference is the fact that the returned
152 amount will not also be tripled, and thus the benefit for the one who trusts is lower,
153 compared to the reciprocal altruist. This fact may therefore require a higher level of trust
154 from the trustor because of his lower potential profit and the higher potential loss.

²¹ Sutter, M.; Kocher, M. G. Trust and trustworthiness across different age groups. *Games and Economic Behavior* **2007a**, 59, 364–382

²² Sutter, M.; Kocher, M. G. Trust and trustworthiness across different age groups. *Games and Economic Behavior* **2007b**, 59, 364–382

²³ Buss, D. M. *Evolutionäre Psychologie*, 2., aktualis; Pearson-Studium: München [u.a.], 2004

The Trust game in a company

At this time it is useful to make clear that the diction sometimes is misleading. Following traditional business research methods (e.g. Bryman et al.) an experimental design has to follow strict rules. An experiment always requires a control group. If there is no control group they describe the design as a quasi-experiment²⁴. Although Sutter describes the trust game as an "experimental trust game"²⁵ the author recommends to omit the word "experiment" and to just use the word "game" in this respect – of course being aware that this design is also known as a quasi-experiment.

The trust game should be conducted in a real company with real leaders and their subordinates in order to reduce the level of simulation. The author intends to apply the trust game to 50 female and 50 male leaders, each of them interacting with two of their subordinates.

Yet it is challenging to find companies with 50 female leaders. After evaluating some ideas of which companies come into question the author decided to apply the trust game in a mid-size Hospital. Especially the following arguments are underlining the decision for this kind of company:

- The author assumes that the proportion of female leaders may reach the aim of 50.
- The socialization caused by education of female and male physicians run almost parallel for a long time (school, university, junior doctor). So the influence of socialization in this case is less than in companies with employees with heterogeneous education.
- Trust can be assumed to be extremely important in the job environment of a hospital.

This last assumption can be underlined by Eberl: "trust is a moderator variable, which is only relevant if spontaneous self-coordination rather than hierarchy is preferred as the dominant organizational integration mechanism."²⁶ And further: "it can be argued that the

²⁴ Bryman, A.; Bell, E. *Business research methods*, 2nd; Oxford University Press: Oxford ;, 2007

²⁵ Sutter, M.; Kocher, M. G. Trust and trustworthiness across different age groups. *Games and Economic Behavior* **2007c**, 59, 364–382

²⁶ Eberl, P. The development of trust and implications for organizational design: A game- and attribution-theoretical framework. *Schmalenbach business review* **2004**, 56 (3), 258–273

181 conditions for using trust-based self-coordination are only given if task ambiguity is high,
182 and measurability of job performance is low.”²⁷

183 Following this we can conclude:



184

185 Figure 1: Trust and self-coordination

186 When taking a look at the everyday life in a hospital it is apparent that task ambiguity must
187 be high (e.g. “Healing the patient”) and measurability is low (e.g. “Success of the cure”).
188 In contrast for example in a peace work factory task ambiguity should be low and
189 measurability of the output is high. And this, referring to Eberl, requests low trust.

190 **Problems and solutions of the trust game within a company**

191

192 In the following paragraphs there will be discussed which problems may occur in applying
193 the trust game within a running company. The solutions of the problems are twofold: first
194 the experiment must not disturb company and employees and second must be granted that
195 the outcome of the experiment has to be scientifically valid. As mentioned before almost
196 all measures of intra-personal trust in organizations use questionnaires – according to
197 literature review the trust game never took place in a company. May be the challenge in
198 both solving the organizational problems and gathering valid data can be the reason for
199 that.

200 **Acceptance within the company**

201 Nowadays companies may have broadly realized that trust is a crucial competitive
202 advantage. And the impression exists that our recent crisis is more seen as a crisis in trust
203 but in finance. Before this background it can be argued that most companies do not really

²⁷ Eberl, P. The development of trust and implications for organizational design: A game- and attribution-theoretical framework. *Schmalenbach business review* **2004**, 56 (3), 258–273

204 appreciate the interpersonal trust to be measured by an external researcher because the
205 outcome of the investigation may be different to the management's expectations. Probably
206 the company has to face a trust level which is not satisfying which can go along with
207 questions regarding management and leadership. When the outcome is not properly
208 communicated it could be quite uncomfortable for the executives. For getting the
209 company's acceptance at this early state of research three points appear important: the
210 company's benefit, security of data, and integration of the employee organization.

211 **The company's profit:**

212 The outcome of the research is not predictable but the data has to be delivered anonymous
213 and brought to the executives in the form of a presentation. If they want they have to get
214 the full survey (with anonymous data) in order to derive action. Whatever the findings may
215 be, the company must get the chance to see them as profit: when the trust level appears
216 high, the company can publish it; when the trust level seems to be low, the management
217 gets the chance to foster a trusting work environment. This has to be communicated
218 beforehand – in the first contact.

219 **Security of data:**

220 Data about the trust level within the leadership relations are sensitive. Therefore the data
221 must be confident and partly anonymous. The company must have the right to set a
222 restriction note in the survey. This must assure that publications of the outcomes are only
223 possible with the agreement of the company.

224 **Integration of the employee organization:**

225 The investigation should take place in an Austrian company. In Austria traditionally the
226 employee organizations are involved in management matters. So the members of the
227 employee organization have to be involved beforehand – at the same time, or even right
228 after getting the principal o.k. from the management. Their commitment may be (not
229 necessarily but probably) valuable for the acceptance of the experiment within the
230 employees (e.g. superiors and subordinates).

231 **Acceptance within the participants**

232 While the acceptance within the company is the fundamental requirement for applying the
233 trust game in a company, the acceptance of the game within the participants is necessary to
234 get valid data. For the probants it is a broadly new situation to state their trust in another
235 party in such a clear and measurable way: in transferring money. So for fostering the
236 acceptance the following points are essential:

- 237 - Open communication: This must be done in cooperation with the management and
238 the employee organization.
- 239 - Procedure: Before applying the trust game every participant has to be informed
240 about the exact procedure.
- 241 - Results: Dealing with the results is a sensitive task. So the outcome will be
242 communicated in a cumulative way. The data must neither allow any conclusion
243 about the trust level within single relationships nor within the departments. Also
244 this fact has to be brought to the probants before doing the game.

245 **Organizational challenges:**

246 As already pointed out an experimental design for measuring trust in companies is likely to
247 disturb the work flow. In consequence the trust game has to be prepared carefully in order
248 to get the disturbance as low as possible. This may sound banal but the solution of this
249 point is crucial for the company. Three factors are important: time, duration and location.

- 250 - Time: The timing of the trust game has to be in accordance with the schedule of the
251 participants. As hospitals are running 24 hours and 7 days per week it will be
252 necessary to prepare the setting in a way that the participants (superiors and
253 subordinates) can pass it separately.
- 254 - Duration: The trust game itself can be done in a few minutes. But in order to get
255 valuable data it has to be combined with a questionnaire which will be described
256 later. Furthermore the probants have to get a brief description of the game. The aim
257 is to keep the procedure as short as possible and not longer than necessary.
- 258 - Location: The trust game is going to observe trusting behavior within an
259 organization. So it is necessary to apply it inside the organization. Not only in order
260 to do the game time efficient but also to keep the simulation level low. The
261 participants must have the feeling that they are acting within the environment
262 where they are used to.

263 **Accompanying questionnaire**

264 The aim of the study is to find out whether there exist gender differences in trust within
265 leadership relations. It explicitly is not intended to discover any correlations between
266 answers of a questionnaire and behavior. This work has already been done for example by
267 the before cited Glaeser.

268 In order to reduce the influence of other factors on trust some items have to be checked
269 with an accompanying questionnaire. Beside the demographic data like gender and age,
270 also questions regarding socialization seem to be crucial. Above this also the duration of
271 the leadership position may be important. The following paragraphs will describe this
272 deeper.

273 **Demographic data**

274 Beside gender also age and nationality seem to be important. Gender of course because
275 there is the main focus on. Age because there might be differences in trusting behavior. An
276 interesting findings stems from the already cited Sutter who explored differences in trustor
277 behaviour across six age groups. His findings support the assumption that there are
278 differences of trusting behaviour over the reviewed age groups. But there is only one single
279 age group covering the targeted probants: The age group of the “professionals”.²⁸ So while
280 he has discovered the principle that trusting behaviour is connected to age he did not
281 discover differences within the age group of the professionals. In order to avoid possible
282 differences within this age group the questionnaire will capture smaller age groups. To
283 avoid conclusions on the probants (their data will be anonymous) based on the
284 demographic data the definitions of the age groups must not be too narrow. A possible
285 approach might be a 10-year interval, starting at -30 and ending at +60.

286 The third Item which will be covered by the questionnaire is the cultural affiliation of the
287 participants. In this matter Hofstede’s research gives us hints that cultural differences
288 concerning trust may exist. He did not explicitly explore trust but he explored a
289 contradictive item: Individualism. He defines that term as follows: “Individualism (...) is
290 the degree to which people (...) prefer to act as individuals rather than members of
291 groups.”²⁹ Comparing trust with individualism we can come to the conclusion that trust is
292 fostering the “we” while Hofstede states that individualism fosters the “I”. And trust
293 research supports the assumption that trust is the glue between individuals to become a
294 team or a “collective”. Shorter: the assumption can be:

²⁸ Sutter, M.; Kocher, M. G. Trust and trustworthiness across different age groups. *Games and Economic Behavior* **2007c**, 59, 364–382

²⁹ Hofstede, G. Cultural constraints in management theories. *Academy of Management Executive* **1993**, 7 (1), 81–94

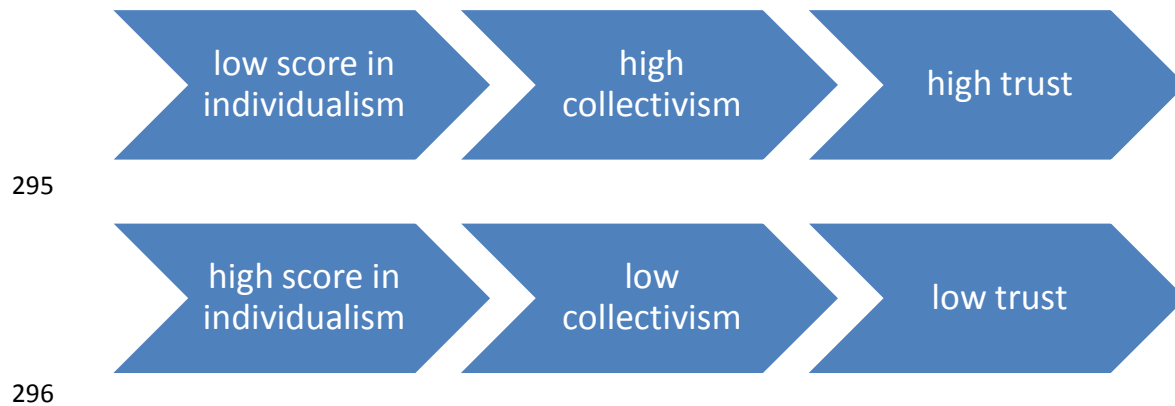


Figure 2: Connecting individualism with trust

Despite the fact that the connection between individualism and trust results from definitions of terms and lack empirical evidence, the influence of cultural affiliation will be excluded by the integration of this item.

The fourth item which will be covered is the level of education in order to evaluate whether different educational backgrounds of trustor and trustee influence the levels of trust and trustworthiness within a leadership relation.

Duration of leadership

Again citing Billing and Alvesson they see another influence on leadership style. They experienced that differences removed over time because women adapted their style to that of male managers: (women) "... consciously chose not to use their original way of handling matters because they felt that it would not be effective/good/acceptable." ³⁰ In trust literature the influence of the factor time is seen by most researchers (explicitly or implicitly) for a precondition for trust formation. For example Graeff states that the longer someone knows a person the more information he gets. And so he can either use these information rationally or generate an emotion out of the information in order to create a meta decision level. ³¹ And this is the decision level for trusting behavior.

The impact of the leadership duration will be deleted by an item which asks for it.

³⁰ Billing, Y. D.; Alvesson, M. *Gender, managers, and organizations*; W. de Gruyter: Berlin ;, New York, 1994

³¹ Graeff, P. *Vertrauen zum Vorgesetzten und zum Unternehmen. Modellentwicklung und empirische Überprüfung verschiedener Arten des Vertrauens, deren Determinanten und Wirkungen bei Beschäftigten in Wirtschaftsunternehmen*; Wiss. Verl.: Berlin, 1998

315 Executing the trust game

316

317 The major reason for not applying the trust game in companies may become clear when we
318 are going to look at the game situation itself. The classical setting is that the trustor sits
319 opposite the trustee and transfers him or her some money. Afterwards the trustee is sending
320 money back to the trustor. This sounds easy, at least in an experimental and artificial
321 situation. Now imagine: the superior sits opposite of a subordinate; both are engaged in an
322 existing leadership relation; the situation is observed by the researcher; both, the trustor
323 and the trustee, argue that their decision has impact on their relationship. So in this setting
324 it has to be argued that both are acting trustful in order to leave a good impression and not
325 to disturb their relationship. This may differ to real behavior and leads to invalid data.

326 Now when the design is going to be changed in a way that both, superior and subordinate,
327 are anonymous, the data may seem to be valid but will not reflect the trust level within the
328 leadership relation. There is no anonymity in real relationships. So the outcome lacks
329 internal validity – “we do not measure what we intend to measure”. Beside that the quasi-
330 experimental design changes into a quasi-questionnaire.

331 A possible solution for this dilemma may be the following design:

- 332 - The superior gets a name of one subordinate and a specific virtual amount, called
333 “budget”, (e.g. € 1.000,--), accompanied by the call to define an amount (out of
334 these € 1.000,--) she or he is going to transfer to this person.
- 335 - The superior writes an amount on a paper, the researcher triples the amount and
336 puts it into an envelope. For example the superior gives € 600,-- and keeps € 400,--,
337 the subordinate gets € 1.800,--.
- 338 - The subordinate has already been informed that the amount the superior can give
339 varies. This assures that the subordinate cannot conclude which proportion of the
340 budget she or he receives. This is assumed to be crucial when the ongoing
341 leadership relation has not to be (negatively) influenced by the trust game. In fact
342 the budget of the superior will not be varied very much. If the amount varies too
343 much (e.g. from € 10,-- to € 10.000,--) the budget itself may influence the decisions
344 and questions the validity of data. So the suggestion is to vary the budget in
345 maximum 10 %.

- 346 - This envelope with the tripled amount will be given to the subordinate. She or he
347 has the opportunity (not the obligation) to return an amount to the superior, i.e. to
348 reciprocate.
- 349 - The subordinate writes an amount on a sheet of paper and puts it into an envelope.
350 This happens anonymously. The superior must not conclude from whom the
351 reciprocated money comes from – again in order to not influencing the ongoing
352 leadership relation. Only the researcher knows the identity of this subordinate
353 because logically this is necessary for research and analyses.
- 354 - As the game will be conducted with separated superiors and subordinates, for the
355 game itself it is not necessary to inform the superior about the reciprocated
356 amount(s). Of course the researcher will do so to give the superior the opportunity
357 to derive action from the trust level, but the game itself ends when the subordinate
358 defines the money to be returned.

359 Yet the job of the researcher is to record the budget and the transferred amounts in
360 combination with the identity of the probants. The amounts will be transferred into
361 percentages because the budget changes. The analyses itself has to take place in
362 consideration of the accompanying questionnaire with the items of socialization duration
363 of the leadership relation as moderator variables.

364 **Conclusions and Remarks**

365 Management and leadership literature regarding trust leave some lacks in internal and
366 external validity. Probants are seldom professionals, the number of participants often is
367 low and the Measurement with questionnaires often does not predict real trusting behavior.

368 As this design is totally new it will be tested beforehand with university students. After this
369 some adaption in operationalization may take place. The principle design of the trust
370 game applied in an organization will stay the same. If the suggested solutions and the
371 adaption of the game are fruitful this method of measuring trust in organizations can close
372 a gap in trust research. It may have been provided a new way of measuring trusting
373 behavior in leadership relations. Of course the participants are facing an artificial situation
374 but the aim of the game is to keep the simulation level as low as possible. Of course the
375 probants have to deal with virtual money so they have to abstract. As the majority of
376 money running around the world is just virtual it can be assumed that the participants are

377 able to abstract. To boost the outcome some can use real money. But this opens not only
378 budgetary questions but also ethical ones.

379 The aim of this new design is to create a completely new approach to the topic of trust
380 within companies with the lowest possible level of simulation and the highest level of
381 validity.

382 Robert Jong

383 2012-02-25

384 References

- 385
386 Schein, E. H. Culture: The Missing Concept in Organization Studies. *Administrative*
387 *Science Quarterly* **1996**, 41 (2), 229–240.
388 Glaeser, E. L.; Laibson, D. I.; Scheinkman, J. A.; Soutter, C. L. Measuring trust. *The*
389 *quarterly journal of economics* **2000**, 115(3), 811–846.
390 Dietz, G.; Deanne N., D. H. Measuring trust inside organisations [Online] **2006**, 35 (5),
391 557–588. <http://www.worldcat.org/oclc/670199743>.
392 Johnson, N. D.; Mislin, A. A. Trust games: A meta-analysis. *Journal of economic*
393 *psychology : research in economic psychology and behavioral economics* 2011, 32 (5),
394 865–889
395 Friedrich, C. *Determinanten der Einschätzung vertrauenswürdigen Verhaltens von*
396 *Transaktionspartnern. ein anwendungsorientierter Erklärungsbeitrag zur Bildung*
397 *subjektiver Wahrscheinlichkeiten*, 2004.
398 Bryman, A.; Bell, E. *Business research methods*, 2nd; Oxford University Press: Oxford ;,
399 2007.
400 Berg, J.; Dickhaut, J.; McCabe, K. Trust, Reciprocity, and Social History. *Games and*
401 *Economic Behavior* **1995**, No. 10, 122–142.
402 Sutter, M.; Kocher, M. G. Trust and trustworthiness across different age groups. *Games*
403 *and Economic Behavior* **2007a**, 59, 364–382.
404 Sutter, M.; Kocher, M. G. Trust and trustworthiness across different age groups. *Games*
405 *and Economic Behavior* **2007b**, 59, 364–382.
406 Buss, D. M. *Evolutionäre Psychologie*, 2., aktualis; Pearson-Studium: München [u.a.],
407 2004.
408 Sutter, M.; Kocher, M. G. Trust and trustworthiness across different age groups. *Games*
409 *and Economic Behavior* **2007c**, 59, 364–382.
410 Eberl, P. The development of trust and implications for organizational design: A game-
411 and attribution-theoretical framework. *Schmalenbach business review* **2004**, 56 (3),
412 258–273.
413 Hofstede, G. Cultural constraints in management theories. *Academy of Management*
414 *Executive* **1993**, 7 (1), 81–94.
415 Zimbardo, P.; Angermeier, W.; Westhoff, K. *Psychologie*, 4., neubearbeitete Aufl.;
416 Springer: Berlin [etc.], 1983.
417 Billing, Y. D.; Alvesson, M. *Gender, managers, and organizations*; W. de Gruyter: Berlin
418 ;, New York, 1994.

419 Graeff, P. *Vertrauen zum Vorgesetzten und zum Unternehmen. Modellentwicklung und*
420 *empirische Überprüfung verschiedener Arten des Vertrauens, deren Determinanten und*
421 *Wirkungen bei Beschäftigten in Wirtschaftsunternehmen*; Wiss. Verl.: Berlin, 1998.