

Article

# An Experimental Investigation of Trusting Behaviour

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**Abstract:** In this paper, we present the results of an experiment conducted in Italy on trusting behaviour. Our subjects participated in a trust game and filled in a questionnaire on trust and trustworthiness based on the attitudinal questions reported in the European Value Survey. The aims of the research are twofold. Firstly, using the experimental dataset, we construct two measures of trustworthiness among all recipients in the experiment, one based on the questionnaires’ answers and another based on the strategy method. We then compare the ex-ante behavioural decision to trust (before participants are allocated to a group) with the ex-post decision to trust (after participants are allocated to a group and trustors are informed of the level of trustworthiness of all the recipients who have been randomly allocated to each group). Our main finding is that trust strongly varies once the information is disclosed to trustors. The effect on trust is greater when the strategy method is used. Secondly, we compare the behavioural measure of trust with the attitudinal measures of trust and trustworthiness and find that there is only a weak correlation between the two measures, thus confirming, for the Italian case, similar findings in country-based studies on trust.

**Keywords:** social capital; trust; experiments; social influence; group behaviour



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## 1. Introduction

Trust and trustworthiness are important components of individuals’ social capital, and much attention has been devoted to the problems of their correct evaluation. Attitudinal survey questions as reported in the European Value Survey (EVS hereafter) are often regarded as inefficient indicators of trust, since self-reported measures are subject to incentive issues.

Self-reported attitudinal measures of trust can be affected by three different types of behavioural biases. In fact, when answering the question, “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?”, respondents may underestimate the importance of the issue, considering the abstract context as only a hypothetical setup (*hypothetical bias*); individuals may also wish to represent themselves as more virtuous than they actually are (*idealised persona bias*); finally, the lack of incentives may induce false responses (*lack of incentive bias*).

Another unsatisfactory aspect of attitudinal measures is the abstract definition of trust and trustworthiness, seen as dependent only on the individuals’ social preference utility functions. In the EVS survey, the basic measurement of trust is provided by the answers to the above-reported question, “Generally speaking, etc.”, which portrays the subject’s unconditional intention to trust another individual, which may depend on the individual’s past experience or inner preferences, or rather be connected to his/her cultural and ethical values.

Similarly, measures of trustworthiness are defined on the basis of the answers provided to questions involving civic cooperation, in which individuals report their dislike for free riding behaviour (tax evasion), which again may depend on the individual’s ethics or experience, or even political views.

As for the trust question, the rationale beyond the self-reported measures of trustworthiness relies mainly on the individual's characteristics, but it can be poorly correlated to the actual trusting behaviour in real-world situations.

Another possible source of bias of attitudinal measures lies in the fact that trusting decisions are seen as independent of the level of observed trustworthiness of individuals with whom the economic interaction takes place.

Recent research in game theory and the experimental implementation of bargaining games has, however, clearly shown that trust can be viewed as the strategic response to trustworthiness. In fact, according to Fehr (2009) [1], individuals tend to reciprocate and to respond to the social behaviour that they observe in real-life contexts. Beyond the absolute levels of trust, as in the EVS survey, what we should therefore study and measure are the conditional levels of trust, where we take into account not only the ethical, cultural and psychological foundations of trusting behaviour but also the strategic behavioural decision rule that is inserted in the concept.

Furthermore, research by Alesina and La Ferrara (2002) [2] has argued that race and ethnic heterogeneity are key factors in explaining the overall decrease in the level of trust. According to this point of view, one may argue that when individuals are aware of the social preference attitudes (therefore both trust and trustworthiness) of the agents with whom they currently interact and, moreover, when they share with them some of their views and values, then there is a higher individual incentive to trust them.

Thus, trusting attitudes depend not only on the information on the community level of trustworthiness but also on the ethical similarities between individuals.

In other words, the arguments reported above seem to point out that, when measuring trust, we should ideally separate two definitions of trusting behaviour: an *ex-ante* definition of trust, which is dependent only on the individuals' ethical and social characteristics, and an *ex-post* definition of trust, which reflects, in addition to these characteristics, the behavioural response to the perceived trustworthiness (and heterogeneity) of the social environment in which the individuals operate.

Attitudinal biases (hypothetical and idealized persona biases), a lack of behavioural underpinnings and incorrect decision model specifications of the concepts of trust and trustworthiness have led to alternative lines of empirical research in the study of the primitives of social capital.

An important field of study relates to economic experiments on bargaining games, where individuals are financially motivated. Experimental research has focused on the trust game model, in which two individuals interact strategically.

The main results of experiments on the trust game support the hypothesis that trusting behaviour is conditional on the expectation that co-players will reciprocate kindness and generosity. However, very little research has been conducted to evaluate the relevance that social networks and groups have in shaping such expectation. In fact, in real-world markets, individuals' interaction takes place in specific social environments, such as firms, families, schools, etc. Thus, it is reasonable to assume that the expectation of trustworthiness will reflect the observed values of reciprocation within the individuals' social networks.

In order to test such a hypothesis, the present research reports the results of a three-stage laboratory experiment that tries to assess whether the decision to trust changes once the level of trustworthiness (within the individuals' social group) is revealed to trustors.

In fact, in the second stage of the experiment, trustors were informed about whether they operated in a "trustworthy" or "untrustworthy" social environment (see Jeongbin et al., 2019) [3], before repeating their choices. The experiment was conducted in Italy in the period 2010–2015.

Specifically, in stage 0 (the recruiting stage), the experimental subjects were first asked to fill in a questionnaire on trust and trustworthiness, as reported in the European Value Survey. Subsequently (stage 1), they were asked to participate in a trust game (Berg et al., 1995) [4] in the roles of trustors and recipients.

Finally, in stage 2, all subjects were allocated to groups and trustors repeated their choices, after being informed about the level of trustworthiness of recipients in the same group.

The information on the recipients' trustworthiness was constructed through two *relative measures* of trustworthiness (RBM1 and RBM2 hereafter).

Specifically, in the case of the RBM1 measure, we adopted a social preference elicitation technique (see Selten, 1967) [5], known as the strategy method, in order to derive the level of trustworthiness of the subjects who were then asked to participate as recipients in the trust game, both in stage 1 and 2.

In the case of RBM2, we derived the recipients' level of trustworthiness directly from the attitudinal questionnaires' answers. In both cases, trustors, in stage 2, were informed of the level of the recipients' trustworthiness, before repeating their decision.

The aim of our research is to estimate how trust changes in stage 2 as an effect of the information provided. In fact, evaluating trusting behaviour in stage 1 and 2, we are able to assess the difference between the individuals' ex-ante (or unconditional) decision to trust, and the individuals' ex-post decision to trust (conditional on the observed levels of trustworthiness within the group).

The main result is that the decision to trust is strongly affected by the information on the recipients' trustworthiness. In particular, we find that (i) trustors vary their decision moving from stage 1 to stage 2; (ii) decisions in stage 2 are highly correlated to the relative indices of trustworthiness; (iii) finally, all correlations between questionnaire answers (stage 0) and individuals' behaviour disappear when the information on the co-players' types is introduced (stage 2).

The second hypothesis that we test is whether there exists a correlation between the individuals' decision to trust and the questionnaire answers on trust and trustworthiness. Several studies have examined trust by studying the reliability of alternative definitions and measures (Glaeser, 2000; Thoni, 2017; Sofianos, 2022) [6–8]. Our finding is that there is only a weak correlation between behavioural and attitudinal trust, thus confirming, for the Italian case, a similar result previously reported in country-based studies on trust.

The paper is organized as follows. Section 2 provides a description of the trust game and provides a survey of the experimental literature. Section 3 describes the experimental design in detail. Section 4 states the experimental hypotheses, while Section 5 reports the results of our research. Section 6 concludes and suggests new possible extensions to our line of research.

## 2. The Trust Game and the Experimental Literature

The trust game was first introduced and experimentally tested in Berg et al., 1995 [4]. Their results clearly demonstrated that trustors invested a part of their endowment by sending positive amounts of money to the recipients. Thus, subjects violated the perfect rationality paradigm, according to which no trust should be observed, in the majority of cases.

However, it is more complex to evaluate the determinants of trust. The vast experimental literature has focused on two distinct motivations, one a pure social preference motivation (kindness, generosity, "warm glow", altruism) and another connected to a strategic motivation (increase in one's welfare, based on the expectation of reciprocity of co-players).

Many studies have tried to assess the relative importance of these components of trusting behaviour.

In Ashraf et al., 2006, Costa-Gomes and Weizsäcker, 2008 and Sapienza et al., 2007 [9–11] the relative weight of generosity and expected profits are analysed. In addition to this, the individual attitude towards risk is taken into account.

The main result is that the strategic component, i.e., the expectation of reciprocity, tends to be more important than kindness and altruism.

The research question motivating the present work is, however, how trust is affected by groups' interactions and preferences; in other words, we try to assess whether trust may be affected by the observation of the behaviour of the individuals who are part of the same social group.

Several papers indicate that trusting behaviour is not only affected by individuals' motivation, but also by social effects.

For example, in Berg et al. (1995) [4], the authors find that social history (i.e., being informed on the behaviour of subjects participating in previous sessions) is important in that, under particular conditions, trust and reciprocity are stronger when individuals can observe peers' behaviour. Indeed, in the absence of rewards and sanctions, endogenous social norms can emerge if individuals clearly identify with a group. Accordingly, social history, by providing common information on the use of trust in groups, may increase social identity.

Recently, a number of experimental papers have focused on the effects of peer influence on behaviour in economic environments, an area that had not previously received attention. Similar to our research work, an example of the analysis of peer effects in the trust game is presented by Mittone and Ploner (2011) [12]. Their paper focuses on the behaviour of recipients and studies the effects of peer pressure (when the recipients' choices are being observed by other players) and the effect of social spillovers (when recipients' can observe each other's choices). They find that peer pressure has a positive effect on reciprocity and so do social spillovers.

Similarly, in Luini et al., 2014 [13], the behaviour of trustors positioned in neighbourhoods is examined, with the intent to study whether trusting decisions in groups tend to converge as an effect of peer pressure and conformity seeking. The "neighbourhood" was constituted by three subjects who played independent trust games, each interacting with different participants. However, trustors were able to see (period after period) how many tokens their neighbours were sending to recipients. After a few periods, trusting decisions converged in all neighbourhoods, independently of the individuals' attitudes.

Very little research has been carried out on how trust is determined and shaped in groups. In Alberti et al., 2020 [14] subjects were allocated to social networks in order to assess whether social relationships were able to build trust.

More similarly to our work, in Jeongbin et al., 2019 [3] the results of a two-stage experiment show that group members cooperate more in what they perceive to be a "highly trusting environment" and such effects persist also in the condition of "highly trustworthy environments".

Recent research using field experiments has dealt with the problem of how trust and social preferences are affected by norms and institutional culture in real-world social groups. Bigoni et al. (2016) [15] find a striking difference in trust and cooperation between the north and the south of Italy. In the same line of research, Aassve et al. (2018) [16] document the regional differentials in trust and social preferences in Italy. Using the TRUSTLAB dataset (OECD) the authors find that differences between the north and the south of Italy are less marked than in the previous research by Bigoni et al. (2016) [15] and differences are more consistent in trustworthiness (with the southern regions being at a lower level compared to the northern regions), but are less relevant as far as cooperation and trust are concerned.

### 3. The Experimental Design

The experiments were conducted in Siena and Salerno (2010–2015), and 184 students participated in the 7 sessions in which each of the two experiments was organized. Participants were first- and second-year undergraduate students and they were recruited in the Faculty of Law, Political Science and Economics.

Sessions 1–4 were designed to test the relative behavioural measure RBM1, while the experimental design of Sessions 5–7 aimed to test the relative measure RBM2.

All sessions were divided into three different stages. In the first stage (stage 0, the recruitment stage), the subjects were asked to fill in a questionnaire in which the EVS

questions in relation to trust and trustworthiness were reproduced. Table 1 reports the whole set of questions that appeared on the students' computer screens.

**Table 1.** Questionnaire on trust and trustworthiness.

Subjects' Characteristics		Trust	
1 s	Sex (M/F)	1 t	Trust in others ( <i>y/n</i> )
2 s	Age (19/30)	2 t	Trust in family (1–4)
3 s	Father education (1–6)	3 t	Trust in friends (1–4)
4 s	Mather education 1–6	4 t	Trust new encounters (1–4)
5 s	Degree (1–3)	5 t	Trust immigrants (1–4)
6 s	Year (1–3)	6 t	Ethnical diversity (1–10)
7 s	Family income	7 t	(S) Trust others' motivations (1–10)
Trust and Institutions		Trustworthiness	
1 ti	Trust Government (1–4)	1 tw	Accept undeserved benefits
2 ti	Trust Parliament (1–4)	2 tw	Tax evasion
3 ti	Trust Parties (1–4)	3 tw	Stealing and using car
4 ti	Trust Public Sector (1–4)	4 tw	Lying
5 ti		5 tw	Deceiving partner
6 ti		6 tw	Accepting bribery
7 ti		7 tw	Paying for illegal work, e.g., immigrants
8 ti		8 tw	Evading bus fares

The criteria that we followed in selecting these specific questions were related to our hypothesis testing. In fact, we concentrated our attention on the set of questions that were aimed at assessing the individual's level of trust and trustworthiness, together with some general characteristics that, in past research, have proven to be influential as far as trusting behaviour is concerned.

At the beginning of stage 1, the computer randomly assigned the roles of A and B and subjects were reminded that they would keep the same role throughout the experiments. Subjects A (trustors) were endowed with 12 experimental tokens (exchange rate: 0.50 Euro cent = 1 token) both in stage one and two. Each session lasted around 40–50 min.

Subsequently, trustors were asked to indicate a sum of experimental tokens that they would send in a trust game in which they were matched with an anonymous recipient (subject B). In the trust game, the value of  $\alpha$  was set to 3.

In stage 1, subjects B were asked to indicate—for each number of tokens sent—the minimum and the maximum number of tokens that they would return, according to the strategy method (see Table 2).

**Table 2.** The strategy method (RBM1).

Tokens sent by A	1	2	3	4	5	6	7	8	9	10
Tokens received by B	3	6	9	12	15	18	21	24	27	30
Tokens sent back										

Finally, in stage 2, subjects were divided into groups. (Subjects were randomly allocated to a group by the computer and groups were referred to as G1, G2, etc. We adopted a random allocation mechanism, in fact, trustors were aware that there was no interaction among trustors of the same group or trustors of a different group in the same session. The only information that trustors received and shared was the *type of recipient* (trustworthy or untrustworthy) with whom they would be matched. However, trustors did not know the specific B subject with whom they would play.) There were 8–12 individuals in each group, according to the total number of participants, equally divided between A and B, and they repeated the trust game, keeping the roles assigned by the computer at the beginning of stage 1.

However, before making their choice, subjects A (the trustors) received information on the level of trustworthiness of the subjects B (the recipients) of their group. Such information differed between Sessions 1–4 and Sessions 5–7.

In Sessions 1–4, we assessed the recipients' trustworthiness using the strategy method; in Sessions 5–7, we assessed recipients' trustworthiness using the questionnaires' answers.

On the trustors' screens, a table would consequently appear. The table contained a summary of the main statistics related to the declared behaviour of the recipients allocated to their group. Specifically, in Sessions 1–4, where B players completed the table of the strategy method, we classified B players into three main categories: "untrustworthy" (number of B players in the group who would return an amount of tokens smaller than  $y$ ); "trustworthy" (number of B players who would return a number of tokens,  $R$ , in the interval  $y - \alpha y/2$ ) and "very trustworthy" (B players who would return a number of tokens greater than  $\alpha y/2$ ).

In Sessions 5–7, we constructed an index of trustworthiness based on the questionnaire answers.

Specifically, the index was constructed from the responses to the questions 7 t, 1 tw, 4 tw and 8 tw, with the first of these being given greater weight. Formally, the index was defined as

$$\text{Trust Index} = 2 \times 7t + (11 - 1tw) + (11 - 4tw) + (11 - 8tw)$$

The categories were then formed as follows: (Trust Index  $\leq 10$ ) 1: completely untrustworthy; ( $10 < \text{Trust Index} \leq 20$ ) 2: untrustworthy; ( $20 < \text{Trust Index} \leq 30$ ) 3: more or less trustworthy; ( $30 < \text{Trust Index} \leq 40$ ) 4: rather trustworthy; and ( $40 < \text{Trust Index} \leq 50$ ) 5: completely trustworthy.

Trustors were then given complete information on the distribution of values attributed to the recipients in their group (from which the actual correspondent would be drawn at random). As in the previous sessions, a table would appear on their screens and then trustors would have the opportunity to repeat their choice for a second time.

In the experiments, the measures of trustworthiness varied between answers to the questionnaire according to the behavioural setting of the strategy method.

The rationale behind this choice is that trustors were given detailed information on the recipients' individual characteristics, both in terms of self-reported measures of civic cooperation and ethics and in the observed incentivized return ratios, as in the strategy method. Thus, it is possible to assess whether conditional trust is more affected by the ethical and civic characteristics of recipients or rather by the effective measures of reciprocity and generosity as in the strategy method. In both cases, the tables reported on the trustors' screens were designed with the aim of providing a wide description of the recipients' types in the group. Our methodologies were in line with the most used methodologies in the experimental field.

In fact, we recall here the use of questionnaires, pre-play, one-shot or repeated games and finally some variations of the strategy method (see Burlando and Guala, 2005 [17] for extensive references). In the case of the strategy method, possible disadvantages are related to the weakening of incentives, since each state of the world occurs with less than unitary probability and problems of cognition and understanding may arise, as the number of observations of the players' behaviour increases (in our case, recipients were asked to indicate 10 values of the number of tokens they would return to the trustors). Finally, the strategy method may have an impact on individuals' social preferences, thus weakening the validity of its application as a means to classify reciprocating behaviours. In our opinion, however, similar remarks may be made about the methodologies of the one-shot and the repeated pre-play games, whilst, in the case of the questionnaires, the reliability of the answers may be questioned.

Furthermore, the strategy method has the important advantage of providing each player with a wide representation of the other player's choices, motivations and incentives,

thus reproducing “a full information” setting that the trustors may use to construct their beliefs about the recipients’ behaviour.

Finally, the experiment adopted a within-subject design, in which the same individual participated (in the same role) in all stages.

Within-subject designs are used in almost all previous experiments aimed at assessing social effects. However, they are often criticized because they might generate framing effects.

In order to minimize such problems, we adopted a totally random assignment of roles and groups. Subjects were aware that they were playing with different co-players in stages 1 and 2. Furthermore, payment was postponed until the end of the experiment and each subject could view the earnings only in the final stage.

In fact, after stage 2 ended, participants entered the “payment stage”. In this stage, the computer randomly formed couples in stage 1 and 2 (in stage 2, couples within groups). For each value of tokens sent by A, the computer assigned the expected value of return as expressed in the strategy method of the B player and profits would be distributed. Following Di Cagno et al., 2018 [18] and Luini et al., 2014 [13] we preferred to adopt a stranger partner matching protocol, rather than introducing control sessions. Furthermore, although the subject had a written copy of the instructions on their table, participants read the instructions privately on their screen, and the information on the functioning of the experiment was given only for the ongoing stage.

#### 4. Research Hypotheses and Theoretical Discussion

Moving from stage 1 to 2, would the sub-game perfection solution (0,0) be affected? Would trustors change their choices as an effect of the extra piece of information on the recipients’ behaviour? Under the assumptions of perfect rationality and common knowledge, in a one-shot trust game, A players’ decisions are unaffected by the observation of the tables in stage 2, since they only describe B players’ self-reported behaviour in response to A players’ choices, without changing the structure of the game. We can therefore state the following research hypothesis:

**Claim 1:** If the observed levels of trustworthiness of B types operating in the group affect As’ decisions, then we state that trusting behaviour varies between the ex- ante individuals’ attitudes to trust (stage 0) and the behavioural choice to trust (stage 1) and the ex-post response to observed levels of generosity and trustworthiness (stage 2).

**Claim 2:** If the change is greater in the RBM1 context, then we state that trustors’ behavioural changes are more sensitive to the observed financially motivated recipients’ types (the strategy method) than to the self-reported measures of civic cooperation and the ethical values of B players (RBM2).

In addition to the previous claims, by comparing the results in stage 0 and 1, we can study the correlation between questionnaire answers on trust and trustworthiness and individuals’ behaviour in the trust game.

#### 5. Results

The analysis of the experimental evidence is divided into two different sections. In Section 5.1, we will examine the attitudinal measures of trust and trustworthiness. Subsequently, we will provide answers to claims 1 and 2, by estimating trustors’ behaviour both in connection to the questionnaire answers and in response to the observed levels of reciprocity of recipients.

##### 5.1. Attitudinal Measures of Trust and Trustworthiness in the Italian Sample

We first look at the questionnaires’ answers as they result from our experiments. Table 2 focuses on the relation between the individuals’ social characteristics (sex, age, parental social status and education) and the self-reported measures of trust and trustworthiness. In this regard, indices were calculated from the questionnaire corresponding to different aspects of these concepts. Specifically, indices were calculated for trust in the

family (from 2 *t*), trustworthiness (from 1–8 *tw*), trust in institutions (from 1–4 *ti*) and trust in others (from 3–5 *t* and 7 *t*). For each of the trust indices, the values of the index are increasing in trust (e.g., a value of 40 for “trust in others” is indicative of a person with a high degree of faith in others), whereas the index of trustworthiness might better be seen as an index of untrustworthiness inasmuch as the index increases as the “trustworthiness” of the respondent falls, so that, for example, a respondent indicating that “untrustworthy” behaviour is always justified would end up with an index value of 50. Table 2 reports the values of these indices across different characteristics of the experimental participants, including also the summary index variable of trust, the Trust Index, which was used to provide information on the trustworthiness of counterparts in the RBM2 sessions.

As a preliminary result, we can then state the following.

**Result 1:** Overall, we find a weak, inversely related correspondence between trust and trustworthiness at the individual level. Furthermore, we find that (1) trust increases with income; (2) female subjects tend to be more trusting and less trustworthy than male subjects.

### 5.2. Evaluating Trust and Trustworthiness in Groups

In this section, we evaluate the change in trusting attitudes as an effects of the groups’ formation and the information on trustworthiness provided by the indices of RBM (stage 2 of the experiment).

Furthermore, we examine the impact of individual characteristics, as emerged from questionnaire answers, on the behaviour in the trust game (stage 0 and 1 of the experiment). Precisely, we employed ordered Probit models to estimate (1) the number of tokens sent by trustors in stage 1; (2) the variation in the number of tokens sent by trustors between stages 1 and 2.

The first model is intended to examine, in particular, the relation between the degree of trust of trustors and their behaviour in the absence of information on the nature and/or behaviour of their correspondents.

Some of the individuals’ characteristics and self-reported measures of trust and trustworthiness were included in the model. Various specifications were tried. Table 3 reports the results of our preferred specification including only age, sex and trust indices.

**Table 3.** Indices of trust and trustworthiness by individual characteristics.

		Trust in the Family (1–4)	Trustworth Iness (5–50)	Trust in In- stitutions (5–50)	Trust in Others (5–50)	Trust Index (5–50)
<b>Sex</b>	Male	3.9	16.4	24.7	27.2	30.9
	Female	3.8	14.4	26.4	27.1	31.9
	<i>Economics</i>	3.9	15.5	25.0	25.9	31.0
<b>Degree Course</b>	<i>Communication Sciences</i>	3.9	16.8	25.9	27.6	31.4
	<i>Political Science</i>	3.7	14.8	26.5	27.3	30.8
	<i>Specialisation</i>	4.0	15.5	26.1	30.0	32.9
	<i>Masters</i>	3.9	14.7	24.3	30.4	32.7
	<i>Doctorate</i>	3.7	14.0	27.8	31.0	32.6
<b>Family Income</b>	<i>High Income</i>	4.0	17.5	26.6	18.2	19.5
	<i>Mid-High Income</i>	3.9	15.9	26.3	28.1	30.7
	<i>Mid-Low income</i>	3.8	15.5	24.8	26.8	31.5
	<i>Low Income</i>	3.8	14.1	25.4	26.8	33.5

Table 3 allows us to state a preliminary result, connecting attitudinal and behavioural measures of trust and trustworthiness. Glaeser et al. (2000) [6] conducted a similar experimental investigation connecting attitudinal and experimental measures of trust and trustworthiness in the US. It is interesting to notice that our results are in line with the US

study, inasmuch as we find a low correlation between questionnaire answers and behaviour in the trust game.

**Result 2:** There is a low correlation between the answer to the basic “trust” question and the effective behaviour in the first stage. As in the previous study, however, it can be observed that “trust in others” is positively related to the number of tokens sent and this is clearly statistically significant.

Tables 4 and 5 report the results of estimation models that include the second stage of the experiment, where trustors repeat their decision, after viewing the tables on the level of trustworthiness in their group.

**Table 4.** Ordered Probit model of the number of tokens sent during the first round of the trust game.

	Coefficient	Standard Errors	z
<b>Female</b>	<b>−0.522</b>	<b>0.228</b>	<b>−2.28</b>
Age	0.039	0.050	0.78
Trust in the Family	−0.163	0.252	−0.65
Trustworthiness	0.0015	0.016	0.92
Trust in Institutions	−0.005	0.018	−0.29
<b>Trust in Others</b>	<b>−0.043</b>	<b>0.017</b>	<b>2.62</b>
Log-Likelihood	−185.72		
Pseudo-R <sup>2</sup>	0.04		
N	92		

**Note:** Coefficients that are statistically significant at at least  $p < 0.05$  are reported in bold; coefficients with statistical significance of  $0.10 > p > 0.05$  are reported in italics.

**Table 5.** Ordered Probit model of the variation in the tokens sent in the second round, RBM1.

	Coefficient	Standard Errors	z
<b>Tokens sent during round 1</b>	<b>−0.238</b>	<b>0.075</b>	<b>−3.16</b>
Female	0.653	0.387	1.69
Age	−0.005	0.068	−0.08
Trust in the Family	−0.044	0.027	−1.64
Trustworthiness	0.040	0.028	1.42
Trust in Institutions	−0.0036	0.025	−1.45
Trust in Others	−0.310	0.307	−1.01
<b>Observed Rate of Return</b>	<b>0.114</b>	<b>0.047</b>	<b>2.44</b>
Log-Likelihood	−77.96		
Pseudo-R <sup>2</sup>	0.13		
N	47		

**Note:** Coefficients that are statistically significant at at least  $p < 0.05$  are reported in bold; coefficients with statistical significance of  $0.10 > p > 0.05$  are reported in italics.

In Tables 5 and 6, in fact, the estimated effect of information is reported. As for the strategy method, in order to include the essence of the information in the estimation of A players’ behaviour, the average “rate of return” (i.e., (no. of tokens to be sent back) / (no. of tokens received) averaged over the possibilities (3–30)) observed by trustors was included in an ordered Probit model of the variation in the number of tokens sent between the first and second rounds of the trust game. The results are reported in Table 5.

Here, there are two interesting observations to be made. First, the model is better identified this time, despite the fewer observations. Second, information on the observed (or in this context, expected) rate of return is positive and strongly statistically significant.

In other words, if we compare the results in Tables 3 and 4, we can say that information on co-players’ behavioural trustworthiness is influential in determining trustors’ behaviour.

All correlations between “trust in others” and the amount sent in the first and second stage are in fact overshadowed by the weight that individuals place on the information on

the reciprocal behaviour of recipients. Thus, the measurement of the ex-post trust differs from that of ex-ante trust, mainly based on the unconditional individual values.

**Table 6.** Ordered Probit model of the variation in the tokens sent in the second round, RBM2.

	Coefficient	Standard Errors	z
Tokens sent during round 1	−0.077	0.064	−1.21
Female	−0.036	0.390	−0.09
Age	0.084	0.099	0.85
Trust in the Family	−0.008	0.023	−0.36
Trustworthiness	0.031	0.026	1.19
Trust in Institutions	−0.004	0.027	−0.16
Trust in Others	0.402	0.574	−0.7
<b>Observed Rate of Return</b>	<i>0.112</i>	<i>0.064</i>	<i>1.74</i>
Log-Likelihood	−71.56		
Pseudo-R <sup>2</sup>	0.05		
N	45		

**Note:** Coefficients that are statistically significant at at least  $p < 0.05$  are reported in bold; coefficients with statistical significance of  $0.10 > p > 0.05$  are reported in italics.

Turning now to the alternative experimental design in which trustors received information concerning the general trustworthiness of correspondents (based on the questionnaire answers), a similar exercise was undertaken.

As before, a summary indicator of the information provided to trustors was constructed. In this case, the mean value of the “score” for the group of recipients on which trustors had information was included in the model. Table 5 reports the results.

It is observable that the model has less explanatory power than the strategy method estimation reported in Table 4. Moreover, the impact of information, although almost exactly the same as before, in terms of the value of the estimated coefficient, is in this case much less statistically significant, only slightly breaking the 10% threshold.

It might be added that, although not reported here, the key results—the statistical significance of the information variable in the strategy method and weak or no statistical significance of the behavioural trust indicator—along with the parameter values themselves, are consistent across a range of specifications.

The implication is then that it is actions rather than words that are important. People are more willing to trust when they see that such trust is likely to be reciprocated, rather than being prepared to place their fate in the hands of those whom they believe to act more “fairly”. Therefore, self-reported measures of social capital are not only biased indicators of trusting behaviour, but they are also inefficient signals of trusting behaviour.

**Result 3:** Comparing the attitudinal measure to the behavioural measure of trusting behaviour (stages 0 and 1), we find a low correlation only with the answers to the questionnaire question on “trust in others”. Introducing the information on the recipients (stage 2), we find that the correlation between questionnaire answers and choices in the trust game disappears, while the variation in the tokens sent between stages 1 and 2 is significantly affected by the information on trustworthiness. The influence is greater in the case in which trustworthiness is measured with the strategy method.

## 6. Concluding Remarks

In this paper, we present the results of a laboratory experiment on individuals’ trusting attitudes and behavioural choices. Our research hypothesis is that trusting decisions can be affected by information on the recipient types allocated to each group. Our results confirm this hypothesis and prove that individuals adapt their trusting behaviour to the observed aggregated level of reciprocity. Although the economic research on trust is extensive, there are only a few contributions that focus on trusting behaviour in groups. Only recently, both laboratory and field experiments have proven the relevance of the issue.

The most important result in this area of the literature is that groups' effects are higher when individuals share similar attitudes towards trust and reciprocity. The scope of the experiment presented in this paper is to test whether such an effect persists or is even higher when individuals perceive themselves to operate in a trustworthy social environment, where trustworthiness is measured, using both an attitudinal and a behavioural index. As a second research hypothesis, we also tested whether there was a correlation between attitudinal and behavioural measures of trust and trustworthiness, by comparing the evidence in stages 0 and 1. Our experiment expanded on some points recently raised in the literature on trust (see Conte A., 2020 [14]; Jeongbin et al., 2019 [3]; Sophianis A., 2022 [8]; Thoni C., 2017 [7]), where the effects of groups' decision making were examined. The importance of this area of the literature lies in the fact that—in the real world—trusting decisions are likely to be affected by the social environment in which we currently operate, such as one's family, workplace or school. Therefore, in our opinion, more research in the area of group effects on trusting behaviour is needed in order to examine all the relevant aspects.

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