

The effects of monetary and social monetary incentives on performing favors

A small-scale experiment under university students

Abstract:

In this thesis, an effort is made to reveal what type of monetary incentives trigger people to perform favors for others. Through a small-scale experiment where students of the Erasmus University Rotterdam were asked to fill in surveys for various rewards (money, social presented money or no money at all), the effect of the applied monetary incentives is measured and interpreted. The results imply that social monetary incentives have a greater effect on performing favors than monetary incentives or no incentives at all. Most of the results are not statistically significant because of the small scale of the experiment. However, this research is both interesting and important for two reasons, namely, because it provides experimental evidence about a subject which is not only relatively unknown under economists, but will also show that social monetary incentives can effectively trigger people to perform favors for one another. Furthermore, favor performance can be of great importance to managers of companies in their workforce. The experiment and results can be used as a stepping stone for further research on this subject.

Bachelor Thesis Economics

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Preface

During the process of this bachelor thesis, I have learned a lot about experiments in economics, a subject that I had not yet experienced in practice. When I was looking for a subject to write my thesis on, I had an idea on what subject would interest me and how I could write it. Initially, I had the plan to write my thesis about a topic in social relationships on the workplace. However, due to the lack of relevant data and the difficulty of conducting a small experiment within this sector, this was a subject that was not feasible for me.

After a few conversations with my thesis supervisor, the subject of favors in economics and the influence of monetary and social monetary incentives came out as the thesis subject. I am very happy investigating this part of economics. It is not only an interesting topic within economics, but also a topic which has not had much attention in recent literature. Creating an experiment was definitely the hardest part for me. Analyzing the results and the writing process was going with ups and downs. I learned a lot during the writing of this thesis and I am very happy with the result.

I would like to thank my thesis supervisor, Susanne Neckermann, for helping and guiding me through the whole thesis process. I am also very grateful to my parents, who have not only supported me when I was writing my thesis, but through my whole bachelor study and before. Also many thanks to my friends Bart, Felix and Bob for helping me with questions when I was learning the statistical program STATA and with whom I spend way too much cups of coffee for the past years. Finally, I want to thank Sharyn Toner for checking my thesis on English spelling and grammatical errors.

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1. Introduction

Economics of favors is a subject that is relatively new in the economic literature. In the past years, very little attention is given to the type of incentives that trigger people 'go the extra mile' for both within and outside the working environment. Especially the social aspect of this subject is very underestimated within economics.

In the economic literature, various models of principal-agent problems have been used to form a benchmark to optimal rewards for employers. Dur et al (2009) is an example of one of the many papers written on the basis of models on how employees would react in their effort on various changes in reward and how to optimize their effort in terms of utility that would affect the company in a positive way. However, monetary rewards within a company is not the only factor that plays a role in the effort a person conducts. Reciprocal behavior and altruism are possible other factors that could influence their effort for one another. Related literature on these subjects will be discussed. Since this thesis experiment uses surveys as a research tool, literature is discussed on the design of surveys and the response rate of surveys. Related literature on these subjects will be discussed.

Another interesting facet of this subject is experimental evidence. As there is enough literature on principal-agent problems, the same cannot be said for experimental evidence on the topic of favors. So far, only the field experiment of Kube et al (2012) provided evidence regarding social incentives on the workplace having a positive influence on performance. They combine these two strands of the literature: they look at whether the reciprocal response of agents depends on whether or not the reward is financial or nonfinancial. Their findings are that monetary incentives, presented in a social package, has significant influence on the performance of employees in comparison with plain monetary incentives. A part of this thesis is referring to the results of this experiment. This thesis links all of these literatures by investigating the effectiveness of unconditional financial and social rewards in inducing people to perform favors for one another.

The objective of this thesis is to contribute to the experimental evidence on economics of favors. The focus on doing these favors is set on different kinds of incentives. These

incentives vary from monetary to social monetary incentives. The central questions that this thesis endeavors to answer are:

- 1) *Can small gifts affect individuals' willingness to do a favor?*
- 2) *Does it make a difference whether the gift is purely financial or put into a social context?*
- 3) *Do the different rewards differentially affect "helpers" willingness to do a second favor?*

The sample groups are bachelor and master students of the Erasmus University Rotterdam. Individual students are randomly approached and ask to help out a fellow student by filling in a survey that the student needs for their thesis. Subjects are either merely asked, or (ex ante) given a financial reward of a 1 euro coin, or of a 1 euro coin presented in a nice way (attached to a card). Performing favors are simulated through filling in surveys for different kinds of rewards and comparing the results with each other. One treatment group is receiving one plain euro, which will be referred to as the treatment group 'money'. Another treatment group is getting one euro presented on a thank-you card, which will be referred to as the treatment group 'social'. These treatment groups allow to distinguish the effect of a social approach in the rewarding system versus the regular reward system. Subsequent to the first survey, each participant is asked whether they were willing to help out again, by filling in a second survey (the second favor). This survey is portrayed as being part of a thesis of my best friend. The survey actually measures a students' social value orientation, which will be used in the analysis below. Lastly, there is also a control group, who do not receive any money for filling in the first survey. This controlled will be referred to as 'control'. The second survey is seen as a (second) favor of the respondents and a measure of the altruistic level of that respondent (i.e. the ones who perform the second favor) is included in the experiment. The second survey is a survey from Murphy et al (2011) about Social Value Orientation (SVO). Through the SVO slider measure the altruistic level of the respondents of the second survey will be determined. The result may help to find a link between altruism and reciprocity and the performance of favors. The SVO slider measure is a relatively new method and never used before in such an experiment. It is therefore very interesting to apply. The statistical program STATA and Excell are used to analyze the experimental results. The Mann-Whitney Test (also known as the Wilcoxon Rank Sum Test) is used to test the results on significance. The primary SVO slider measure is used to identify the altruistic level of the respondents.

Social monetary incentives appear to influence the sample group in the most positive way. The respondents in that group also scored the most on 'prosocial' in comparison with the other treatment group, who received a plain euro, and the control group, who did not receive any money. The observation that stands out is that some students refused to accept the offered euro for the first favor and performed also the second favor for free. Remarkably enough, most of the students who performed the second favor scored 'individualistic' on the SVO slider measure survey. A credible explanation for this cannot be given due to the fact that there are too little observations. The remainder experimental results are in line with the expectations that are also based on the experiment of Kube et al (2012): monetary rewards presented on a social way have a positive influence on performing favors. However, it must be said that almost all the results tested are statistically insignificant. This can be explained by the fact that the sample size of the respondents is too small to form significant results.

Despite the insignificance of most of the results, the relevance of this experiment is high. As there is very little literature and information available about this subject, this thesis gives an insight into the relevant available literature so far about economics of favors. Additionally, it tries to reveal the relationship with reciprocate behavior and altruism, in the experiment as well as in the related literature research. Furthermore, this thesis experiment should be seen as a small-scale experiment, which can be used at a bigger scale to gain better insight about the results and influence regarding this research.

When the findings are significant, the results may be used to analyze and, if possible, improve human resources management. Companies and managers often rely on their workforce to achieve optimal performance in the workplace and in the end for the company as a whole. It could be important for companies as well as employees to have the possibility of a high willingness of favor-performance. When treating employees in a more kind way by, for example and in light of this thesis, rewarding them on a more social way (showing them appreciation by more socially presented rewards), employees might reciprocate that gesture with a higher level of effort. Also, favors between employees could have beneficial effects. However, it is not clear how favors can be elicited. One way could be through social monetary and plain monetary incentives, which is tested in this thesis. The outcomes can be very interesting for companies and their workforce. Therefore, favor performance and the

elicitation by incentives is a very useful topic to investigate and also for companies to possibly apply on their own workforce.

This thesis is structured as follows. The second chapter discusses the related literature on economics of favors and will also give some attention to related subjects as reciprocate behavior and altruism. The third chapter will explain the experimental design and methodology used to analyze the results. Additionally, some predictions and expectations will be made regarding the outcomes of the experiment. The fourth chapter will describe the experimental results in detail. Finally, the fifth chapter will discuss and interpret the results and form a conclusion of this research. The limitations of this experiment and directions for future research will also be given.

2. Related literature

Favors are a very important factor in economics in general and in economics in gift exchange. Though, partly due to the fact that favors are very hard to measure and reveal, there is very little academic literature available in this sector. This chapter will give an insight in the available literature regarding favors in economics and gift-exchange and try to link the two in the practice of this thesis. I will start with an overview of the knowledge in economics of favors and reciprocal behavior, based on the various literature available. Second, I will zoom in on the papers of Kube et al (2012) and Gneezy et al (2014), papers that stand closest to this thesis. Lastly, the possible role of altruism on favors will be discussed.

2.1 Economics of favors

As stated before, favors are an important part of economics within organizations. It is interesting to see in the context of this thesis what the impact of favors are for the effort of employees and the relationship between employees reciprocally and between employees and employers.

William S. Neilson (1999) examines the favors people perform for each other, using a theoretical model he created in an infinitely-repeated Prisoner's dilemma in one-on-one relationships, as well as in group relationships. He states that favor-exchange relationships must be strictly Pareto-improving to be performed. Also, favors can be too expensive to perform, so we should not expect very large favors to be observed in practice. He concluded that both efficient and inefficient favors can be performed in order to preserve the relationship. This could be linked to the fact that people keep their future in mind when in need of favors themselves. Therefore, the model he created shows that the idea of owing or returning a favor is inaccurate. People perform favors because of what they expect to happen in the future.

Fung (1991) had a more extended view on favors within organizations. In his literature research he showed the comparison of favor exchanges (within organizations) against market exchanges. The big contrast between the two is that in market exchanges terms can be specified in advance, whereas in favor exchange it cannot. In addition, there are more factors that can influence the type and frequency of favor exchanges. Uncertainty about the market

values of favors may let people be skeptical about accepting favors. Therefore, it could be explained that favors are normally more frequently accepted among people who trust each other (friends, co-workers who worked a long time with each other).

Besides the theory, there are also empirical researches conducted, regarding favor-exchange in a (natural) work environment. In a natural experiment, the effect of an unannounced salary raise on performance was measured (Gneezy & List, 2006), through tasks as data-entry in a university library and fundraising, where a short-term effect was being observed. However, that effect was not persistent, as it waned at the long-term and mirrored the performance of the group who did not get a salary raise.

Englmaier et al (2011) did research to the influence that characteristics of employees might have on the performance of the company and behavior. Through trust games with employers they tried to examine the effect of the productivity and trustworthiness on performance. Results imply that workers' characteristics, especially trustworthiness, have a great influence on firm's profits. Although this is not to be directly linked to this thesis, it is interesting to see that worker characteristics are having a significant influence on the performance of a company. Unknown is the effect of characteristics on reciprocal behavior and favor exchanges. Therefore, it might be an interesting subject to extend for future research.

2.2 Reciprocity and gift-exchange

Another field experiment by Armin Falk (2007) was conducted, where he was testing the gift-exchange hypothesis. This field experiment differed from Gneezy et al (2006) in the fact that this was a one-shot experiment. Solicitation letters to possible donors were sent with and without a small/big gift. People who received a solicitation letter with a large gift were more likely to donate, followed by people who received the small gift and people who received no gift at all. Also, the donations vary with the size of the gift. Therefore, the results were consistent with the gift exchange hypothesis. However, there is a link made to the research of Gneezy et al (2006), who, as stated before, concluded that the gift-exchange effect would only last on the short-term. Falk (2007) claims that gift-exchange may not work under all circumstances, due to external factors. For example, his experiment is a one-shot experiment, but there is no hard evidence that the gift-exchange hypothesis will last when initiated repeatedly. People may act differently when they are getting used to receiving gifts, which

would be supported by the results of Gneezy et al. They also did the same experiment a second time in the same natural environment one day after the first one. No significant different result was observed.

Reciprocal behavior can also be seen as a form of favor exchange. For example, in a principal-agent relationship, a high wage offer can be seen as a reason for the employee to work harder than necessary for that height of wage. Hannan et al (2002) investigated reciprocity through a field experiment in the labor market. They tried to reproduce partial gift exchange by applying a game theoretical experiment in the work place. Firms were willing to offer their employees an excess of the market clearing wage if they would reciprocate with a high(er) effort level. The experiment was conducted in two stages. In the first stage, firms posted wage offers, where in the second stage employees could accept or reject the wage offers and, when accepting, choose an effort level. The experiment was a one-stage game, so there was no chance that firms or workers could build up a reputation. In this way, firms were hoping on reciprocate behavior of their employees due to the higher wage they were offering. That is, a higher level of effort than they would normally enhance when getting that height of wage after more years of working. They also made a separation in performances between MBA's and undergraduates. Although the firms offered a higher wage than usual, the result was that workers did not reciprocate that with a substantially higher effort than necessary for that wage. Moreover, MBA's are enhancing more effort than undergraduates.

In the economic literature, there are thousands of studies conducted on reciprocal behavior, empirical as well as literature studies. However, reciprocity has a very broad definition and can be interpreted in many ways in economics. Therefore, I limited the selection of researches. The papers that were discussed in this chapter were chosen, because, in my opinion, they fit the best in the topic of economics of favor(-exchange) in their research model as well as the fact that they are useful for topic-related interpretation.

2.3 The paper closest to this thesis: Kube et al

Although there is not very much known about favors and repeated gift-exchange, it would be interesting to see if people would act differently if the gift exchange or incentive would be presented more socially. In the light of this research, the paper of Kube et al (2012) will be

used partly as a benchmark and also to predict outcomes. This paper also stands more closely to the research conducted in this thesis.

Kube et al (2012) conducted a natural field experiment with non-monetary, monetary and social-monetary incentives. The social monetary incentive consists of money presented in a social way. The experiment tries to fill the gap between monetary gifts and the nature of gifts. They recruited participants for a task, again data-entry in a university library, rewarding them in different ways. Six treatment groups were rewarded with money, a bottle of the same value or an artistically wrapped cash gift. Also, there was a treatment group who were given the choice in which of the three ways they would like to be rewarded. Their main-finding was that the nature of gifts crucially determines whether or not the reward was strongly reciprocated. Money, cash gift as it is called in the paper, had no big impact on the productivity of the participants. However, the first treatment group who received the bottle did reciprocate this gift more and their production lies significantly higher. Workers who received the artistically wrapped gift reciprocated with the highest production (30% more than in the baseline). Therefore, the conclusion of this experiment can be drawn. The presentation of the reward given to the worker has a great effect on their work performance.

The next step is to link this paper towards this thesis. As stated before, this thesis tries to fill the gap between the nature of gifts and getting favors/reciprocate behavior. As this paper is similar to my research goal, the outcomes could help in making predictions in the outcome of my experiment. The most interesting factor in the experiment of Kube et al (2012) was the way of presenting the origami reward (presenting the reward more socially). It seems that the effort in presenting the reward for workers is more crucial than the (amount) of money that is rewarded for the productivity, effort or reciprocity in the company performance. Therefore, it can serve as an important factor in influencing company performance, by rewarding workers in a certain way. It is not the same as favor-exchange relationship, but it definitely can contribute to doing favors as reciprocity behavior and performance improvements for managers and workers, and thus the company as a whole. Second, there could also be different reciprocity behavior in other forms as loyalty, absenteeism, retention (Kube et al, 2012). However, there is not enough research done in the past to make a definite conclusion about the social way of rewarding and reciprocate behavior in the workplace.

Gneezy & Rey-Biel (2014) investigated the effect of contingent and non-contingent incentives on relative efficiency through survey response rates. He conducted a solid experiment with a company which he worked with where he sent 7,250 letters asking customers to fill in a survey (they were not aware that they were part of an experiment). In return the customers got a contingent and non-contingent reward varying from \$1 to \$30 or no reward at all. The results state that when comparing with no payment at all, the response rate is higher in small contingent payments (\$1), whereas the \$1 conditional payment reduces the response rate. The non-contingent payment beyond \$1 raises the response rate, but the increase flattens out when payments are getting higher. In contrast, increase in contingent payments lead to a higher increase in response rates of \$30. The interpretation of the results of this experiment would be that people may be different in types and characteristics and therefore respond differently to various incentives (in this specific experiment). Because of the limited data they received from the company, further interpretations could not be made on an accurate base. However, also in this experiment it is evident that people respond strongly on the way rewards or gifts are given.

2.4 Altruism

So far, only related literature on economics of favors and gift exchange has been discussed. However, a possible underestimated factor that could also lead to reciprocal behavior is altruism (in general). It is unknown what the role of altruism is in the context of favors in economics, because of the lack of research and related literature about this specific subject. Altruism is included in this research survey, which will be further explained in the next chapter, to check if there is a possible link with the outcome of this research.

Altruism can take many forms and may be of influence in different ways. Workers may reciprocate a lower wage more than a higher wage, because of the altruistic behavior of their employer (Dur, 2009). In a model of manager-employee relationships where employees care more about their employer, the role of altruism was tested. By giving attention to their workers, they signal a feeling of altruism towards them, whereas the employee also gets altruistic towards the employer. Employers could offer lower wages and the workers still worked harder in comparison to higher wages and a more egoistic employer. Another research by Dur & Sol (2010) implies via a principal-agent model that social interaction and co-worker

altruism is more important to workers than a higher wage. When experiencing social interaction and altruism, the workers' performance is increasing.

A research by Rottemberg (2006) lead to the findings that motives to good performance on the workplace is altruism and the desire to reciprocity. He also emphasizes the important difference between altruism and reciprocity. In situations where people exhibit reciprocal behavior, good or bad deeds are responded by the good or bad deeds, whereas in situations where people are altruistic, a deed is not expected to be returned. This one-sided altruism is also observed in this research.

In many researches, economists are trying to reveal altruism through a dictator-game experiment. It is the most common and easy experiment to test for altruism and also for the level of altruism. In practice most people are maximizing their own utility by keeping (almost) the entire amount of money when they are in a dictator game anonymously with another random-selected person. However, research also finds that altruism is a motivating factor in general and in dictator games in particular (Eckel et al, 1996).

Altruism might enforce doing favors for some types of persons. As is seen in Rottemberg (2006) altruism behavior on the workplace is done very often. It might be that altruistic people are more likely to do favors in comparison with less altruistic persons. In this experiment, altruism is measured through a survey, where we might get more information and possibly find a link between altruism and favors in economics.

2.5 Survey response rates

As this experiment is done via survey responses, some research has also been done to response rates in survey literature. No literature was found on response rates when surveys were taken in person. However, literature was found on response rates via mail surveys and the outcomes of the selected literature are useful in the light of this thesis.

Church (1993) investigated the effect that incentives had on mail response rates. He conducted an (applied) meta-analysis for the area of monetary and nonmonetary incentives. Next to the extensive literature research, he conducted an experiment under different groups

where he sent a mail survey with an incentive for the respondents. Four grouping types of survey were created:

- Monetary and nonmonetary incentives that were mailed with the surveys
- Monetary and nonmonetary incentives given on the return of the questionnaire

In the outcomes, it seems that incentives indeed have a positive effect on the mail survey return rates. However, this was only for the incentives that were provided with the initial mailing of the surveys. People responded more favorably to incentives that were included with the questionnaire, than incentives that were only provided when the questionnaire was sent back.

Porter and Umbach (2006) have done some literature research and investigated which factors and characteristics has influence on the survey response rate from students via web-based and paper-based surveys in several college schools. They controlled for various variables, such as gender, environment, ethnicity and so on. Their main (relevant) findings were that high ability students are more likely to respond than low ability students and that female students are more likely to respond than male students. Also, student of color in general are less likely to respond to surveys. Social environment has a small impact, but in this research, it varies by mode of administration (schools could choose whether they would like web-based or paper-based surveys). Respondents of paper-based surveys might also be affected by reciprocity, because of the mail expenses in comparison with web surveys.

Adams and Umbach (2012) did research to the nonresponse in SETs course evaluation, by sending students the course evaluation via e-mail, where they got a link to the evaluation form. The results states that possible explanations of nonresponse could be topic salience and survey fatigue. The student is more likely to respond if the topic of the survey is salient to their interests (field of study). Survey fatigue is the consequence of the many surveys general respondents get and could suppress response rates. Also, a negative relation is found between the grade of the course and the likelihood of response.

Kaplowitz et al (2004) compared web mail survey responses with hard-copy sent survey under a random sample of students at the MS University. Students also received a notification over the mail. The results states that web surveys generated a higher response rate in

comparison with the hard-copy surveys. Also, the mail pre-notice conducted had a positive impact on the response rate.

This survey research is relevant when looking to this thesis experiment, because it gives a small example of what to expect and how to explain possible rejections when generating data through surveys.

3. Data & Methodology

3.1 Experimental design

For this thesis, the dataset was collected through one or two surveys (depending on the willingness of the respondents) that were taken under 45 students at the Erasmus University Rotterdam over a period of approximately two weeks. The first survey asked about the factors that could possibly influence the study choice and the choice of the Erasmus University of the students, the second survey was copied from Murphy et al (2011) and tries to reveal the degree of altruism of the students. Both surveys will be controlled for age, gender, study degree and current study.

Students all over campus were asked individually to fill in a short survey for my bachelor thesis, for which they were either given money, or not, depending on the treatment. Students, which would receive money, were given the money before they would fill in the first survey. The students were divided into two treatment groups and one control group. The first treatment group was given one euro plain for filling in the survey. This treatment group will be referred as “money”. The second treatment group was given one euro, presented on a handwritten thank you card, which can be found in the appendix. This group will be referred as “social money”. The control group did not receive any money at all and will be referred as “control”. After the students filled in the first survey, I asked them if they could do me a favor by filling in a second survey, which is for the thesis of a very good friend of mine, to whom I have promised dearly to also find respondents for. They have the choice of doing me the favor or refuse it, regardless of the money they got (because it is ex-ante).

The survey which functioned as the second favor in this experiment is about altruism. This survey gives students some choices about the distribution in a hypothetical situation where they receive some money and have the possibility to distribute it between themselves and some non-identified person. The distribution of the amount that would be distributed varies per question. The first favor survey subject is chosen randomly and has no further use in this research. The survey about altruism however is, next to that it is used as the second favor asked from students, a good tool to find out if there would be a possible connection between altruism and favors in monetary vis a vis non-monetary rewards. This would be an additional

dimension in this research, whereas it is unknown what outcome to expect (and if there would be any connection at all).

This experiment is conducted randomly by approaching the respondents individually and per treatment. First, the “control” group is approached followed by the “money” group, then the “social” group, then again the “control” group and so on. Those two approach methods are very important to apply, because it ensures that the experiment is randomized and there is no bias in the research. If the respondents would not be approached individually, students could see that other respondents gained rewards and they did not or in a different way. In that way, there could be a crowding-out effect and the students could refuse to fill in the second survey.

3.2 Methodology

After gathering the data through surveys, it will be looked over and analyzed through the statistical program STATA. An overview of the experimental results will be given through bar graphs and tables. Non-parametrical analysis will be applied in the form of a Mann-Whitney Test. A significance level of .05 will be used. The main objective will lie in the investigation of treatment effects on the performance of the first and the second favor, where the second favor is seen as the most important factor. Also, afterwards the level of altruism gathered in the second survey will be uncovered for the respondents in the different treatment groups who did the favor.

The second survey is a survey about choices that the respondents make about an amount that they would distribute between themselves and a random person they do not know. This survey is taken over from Murphy et al (2011) about Social Value Orientation, who openly supported the use of his research tool for other researchers. The outcome of this survey assigns a value of sociality to the respondent in four different levels: altruistic, prosocial, individualistic and competitive. The objection of using this second survey is to examine if there is a link between the treatment groups who filled in this survey and the type of social value that they score. In the next sections, the use and computation of the Social Value Orientation (SVO) will be explained in detail, before the outcome will be elaborated. This will be done via the primary SVO slider measure. The six primary items of the SVO slider are implemented in the second survey, so the level of altruism can be defined per person who did the second favor. These

results will also be analyzed on treatment effects and controlled for demographic variables as gender, education level and age.

3.3 Predictions

Based on the description of the experimental design and the related literature on gift-exchange and favors in the previous chapter, expectations and predictions about the outcome of the experiment can be made:

Hypothesis 1: The willingness of help with the first survey should be higher with reward than without. Social money might work better than money (Kube et al).

Hypothesis 2: The willingness of help with the second survey should be higher with a social money reward than with plain money reward or no reward at all.

Favors might be more likely to occur when giving no money in comparison when giving the students one euro for filling in the first survey. This would be because of the crowding-out effect: by giving them money for the first survey but not for the second survey, respondents might be more likely to refuse the second survey in comparison with the situation where they do not receive any money at all for both surveys.

What to expect when comparing to the control treatment (giving no money) is hard to predict. It could be that a social reward would give a stimuli to do the favor, therefore would be more likely to get the favor in comparison with no money.

Hypothesis 3: Students who receive social money for doing the first survey, and who also filled in the second survey, are more likely to score a higher altruism level in the SVO slider measure than students who receive plain money or no money at all.

This hypothesis is based on the former prediction, because of the fact that the expectation is that socially presented money affect respondents more positively. Also, as stated before, the predictions are partly based on the results of the paper of Kube et al (2012). However, one cannot exclude the possibility of reciprocate behavior, because of the fact that you gave them

one euro in a social way that took some (small) effort. Therefore, it would also be very interesting to compare this data with the outcomes in the control group who received no money. Although the expectation is that they do not acquire a higher level of altruism, there is a lack of confidential data to make the prediction credible. The danger of reciprocate behavior makes the outcome of the second survey biased. However, it would be interesting for future research to test this hypothesis in a better way.

4. Results

4.1 Experimental results and demographics

Before the results will be revealed, the progress and demographics regarding the experiment conducted will be discussed.

In a period of two weeks, the target of 45 respondents were asked to fill in the surveys for me. Due to some rejections, the number of respondents became 51 (including the respondents who rejected to perform favor 1). Of the 45 respondents who performed favor 2, 27 were males and 18 were females. In my analysis I also control for education level and age. 31 of the respondents were in their bachelor phase at that moment. The other 14 respondents are studying for their master degree. The mean age was 22.11 years with the youngest person being 18 years old and the oldest person being 35 years old. The study the respondents were following varied, but were mostly in the economic direction. All of the respondents are students and/or exchange students at the Erasmus University Rotterdam.

After the surveys were taken from the students the following outcomes were observed:

- From the 15 respondents of the control group, 11 performed both favors (73.3%), whereas 4 respondents rejected favor 2 (26.6%).
- In the treatment group 'money' 11 respondents performed favor 2 (73.3%) and 4 respondents did not (26.6%). A notable observation is that 4 of the respondents in this treatment group refused to accept the offered euro. However, 3 of these respondents performed both favor 1 and favor 2 and only one rejected to perform favor 2. Secondly, 5 people in this treatment group rejected to cooperate with my thesis research and rejected favor 1 (33.3%).
- In the treatment group 'social money' 13 students performed favor 2 (86.6%), whereas 2 students rejected it (13.33%). Also in this treatment group, two students refused to accept the social euro and performed both favor 1 and favor 2. Only one person rejected favor 1 though.

The results and demographic data are summarized in various tables and graphs, which can be found in appendix A1 and A2.

4.2 Statistical analysis

In this paragraph, the outcome of the experiment will be analyzed, using the statistical program STATA. After entering the data in the STATA editor, the standard demographic graphs and tables are made, which (as mentioned earlier) can be found in the appendix. Secondly, the data will be analyzed via statistical tests.

The data consists of several variables, whereas the following are the most important and will be analyzed in detail: treatment, control, money, social money, favor1, favor2, rejected money. The objective of the statistical analysis is to investigate the effect of the different treatment groups on doing the first and second favors (surveys) and the interaction effect between those treatment groups. A non-parametric analysis will be conducted in the form of a Mann-Whitney Test to analyze the outcome.

4.2.1 Money Rejected

An interesting observation during the experiment was that six out of the 30 respondents who got money offered (as well in the social treatment group as in the money treatment group) refused to accept the money and did the favor(s) for free. These observations were tested against the treatment groups. When testing this phenomenon against the money and social group, both tests gave the same insignificant p-value (.6714). Therefore, the type of treatment group does not have a significant effect on the likelihood that students reject the money they were offered.

Due to the scarcity of observations (only six were made) this phenomenon cannot be interpreted with a high certainty and is therefore open for various interpretations.

4.2.2 Treatment versus Favor

When testing treatment effects on filling in the first survey, the effect is significant for the treatment group 'money' ($p=.0196$) and insignificant for the other two groups. This implies that giving money to respondents in order to fill in the first survey, which would only help me

for my thesis, has a side effect, because they are more likely to refuse. This is supported by the fact that the most rejections on the first survey concerns respondents in the ‘money’ treatment group. However, it must be said that during this test I did not control for the few respondents who rejected the money I offered them.

The treatment groups are also tested separately against the second favor to investigate if the type of treatment group has an effect on performing the second favor. Unfortunately, but not surprisingly, the outcome of all three treatment groups were insignificant. However, when comparing the ‘social’ treatment group with favor2, the p-value is lower in comparison with the other two groups (.3159 versus .6161). The p-values of the control group and the ‘money’ group are the same, because of the fact that the outcome in performing the favors are also exactly the same.

4.2.3 Differences between treatment groups

To control for the mean differences between the treatment groups in this experiment, several dummy variables were created: control_money, control_social and money_social. These variables were tested against respectively favor1 (the first survey) and favor2 (the second survey) in a Wilcoxon Rank Sum Test. The tables in the appendix show the results of this specific test.

The treatments were tested against the Favor1 (filling in the first survey). Different outcomes were observed during these tests. The outcomes of these tests can also be found in the Appendix. When first testing for Control versus Money, respondents were more likely to respond to control in comparison to money. This test had a P-value of (.0393) and is therefore significant, which implies that there is a difference in mean between the Control group and Money group, when testing it against Favor1. This is explained by the differences in the amount of respondents in the two groups. The Money group has 20 respondents versus 15 respondents for the Control group, which is because of the fact that the possibility of doing the second favor must be available for sufficient respondents (15 at least).

Secondly, the test was conducted for Control versus Social. In this case there were also more observations for Social in comparison with Money, because of the fact that one respondent in the Social treatment group refused to fill in the first survey. For the same reason as in the

Money treatment group, one extra observation was obligated to be made. The outcome of this test is highly insignificant (.3329), which implies that there are no differences in mean between these groups in relation to Favor1.

Lastly, the treatment groups Money versus Social were tested against Favor1. In this case, there were more observations for Money than for Social (20 versus 16). The outcome of this test was not significant (.1391).

The same was done with the treatment groups against favor 2. When looking to the Control versus Money treatments, we can see that (as was also stated in the former paragraph) the responses are exactly the same. However, the results are not significant. Consequently, there are no mean differences between Control and Money group. When testing Control versus Social, Social is more likely to get responses in comparison to Control. This is in line with the non-statistical observations made earlier. However, also this result is highly insignificant (.3694). Therefore, there is no interaction effect to be found between the Control treatment and the Social treatment. Lastly, the test was conducted for the variables Money versus Social treatments. Because of the fact that the experimental outcomes in the treatments Control and Money were exactly the same, the outcome of this test is also exactly the same as testing Control versus Social. Therefore, this test is also highly insignificant (.3694) and Social is more likely to get responses in comparison with Money. No differences in mean between all the treatments were observed against Favor2.

4.2.4 Gender effects and education level

The same statistical analysis is conducted when controlling for gender effects and education level. The reason of the presence of these controlling variables is that there might be a possibility that gender and education level have a small effect on the outcome of the experiment.

The same dummy variables for the treatment groups were used for the Wilcoxon Rank Sum Test. Gender of respondents was tested for effects on performing the second favor, however results were not to be found significant as well ($p=.4692$). Secondly, the test was also performed on the first favor. This outcome was insignificant (.0565). Consequently, the effect of genders on performing Favor1 and Favor2 is not to be found, although the insignificance was very low in relation to Favor1, which implies that there might be a possibility of a very

small effect of genders when more observations were made. This can be explained by the fact that Favor1 had five extra observations, due to the necessity of sufficient observations that must be made for Favor2. In those five observations, all respondents, male, rejected Favor1.

I also checked on possible interaction effect between gender and the separate treatment groups. However, no interaction effect was found between gender and the control, money treatment, and social treatment group.

In the surveys taken from the students, I also controlled for the education level they were involved at the moment. Bachelor students dominated the respondents group (31 versus 14). It seems that the education level does have an effect on doing the second favor, since there is a significant effect (.0269).

4.3 Social Value Orientation (SVO)

To measure the role of altruism in this experiment, I used the SVO measurement method from Murphy et al (2011). In this paper, measuring the magnitude of the concern people have for others, was the central point of attention. According to the scientists this phenomenon is called Social Value Orientation (SVO). Before exploiting the results of this measurement, a short introduction to the process of Social Value Orientation will be given.

The SVO Slider Measure is an ideal tool in this thesis to evaluate the social preference of the respondent. The SVO slider evaluates the responses for comprehension and transitivity. It implicates that random responses are likely to result in an intransitive set of responses. ‘Normal’ respondents (e.g. respondents who are filling in this survey seriously) should conform to transitivity. Also, the responses yield a full ranking of preferences over motivations (Murphy et al, 2011). Lastly, SVO can be measured in a very simple way through these score forms.

There are two measurement methods regarding the SVO method: the primary and secondary SVO slider measures. The meaning of the SVO slider measure is to reveal the type of altruism people have towards others in certain situations. These situations are based on hypothetical amounts of money respondents could receive and distribute between them and random other persons. The respondents have to choose one of the possible distributions shown on the form. The primary SVO slider measure consists of the first six items and the secondary SVO slider measure of the remainder nine items. Figure 1 shows the primary SVO slider in the second survey as seen by the respondents.

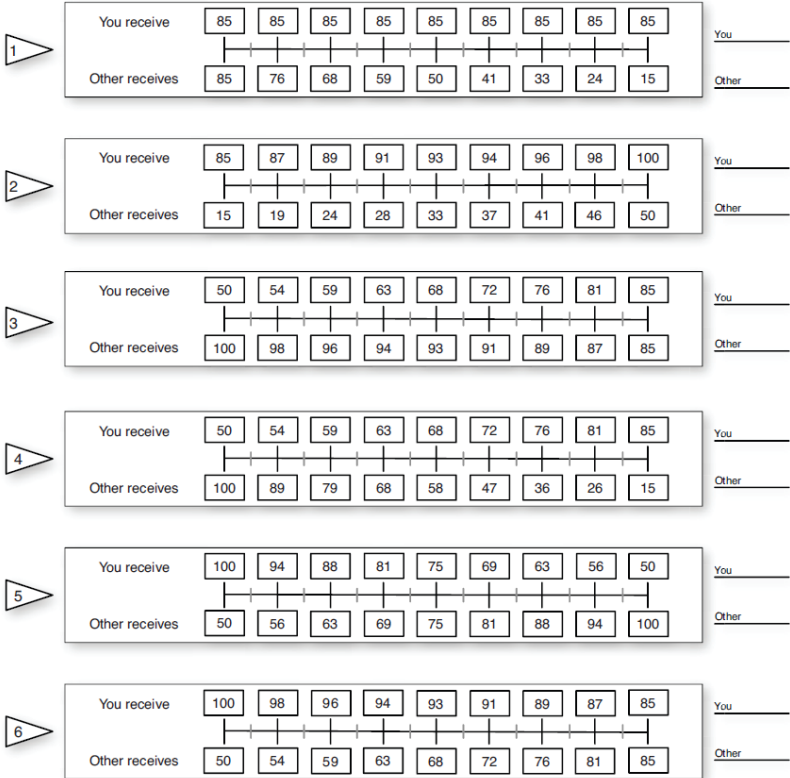


Figure 1: Primary SVO slider

As it can be seen, the amount and distribution in the choices the respondents can make are not always the same. The total amounts and distributions are varying per choice. After the respondents fill in these first six choices, their level of altruism can be defined through a special method from the SVO slider.

The process of identifying the level of altruism from each respondent is as follows:

First, the scores of the distribution between what they would give themselves and what they would give to others is entered in an excell file separately for each respondent. Second, 50 is subtracted from each score. Third, the average of both scores (self and others) is computed. Fourth, the SVO angle must be computed via the inverse tangent of the proportion between the mean of the payoffs allocated the others minus 50 and the mean of the payoffs allocated to themselves minus 50. This described formula is as follows:

$$SVO^\circ = \arctan \left(\frac{(\bar{A}_o - 50)}{(\bar{A}_s - 50)} \right)$$

Through this formula, the arc tangent of the ratio of the mean payoffs are calculated and converted into degrees. The next and last step is to find the level of altruism through the computed angles (in degrees). The subjects are categorized through the following scheme (Murphy et al, 2011):

- Altruism: $SVO^\circ > 57.15^\circ$
- Prosociality: $22.45^\circ < SVO^\circ < 57.15^\circ$
- Individualism: $-12.04^\circ < SVO^\circ < 22.45^\circ$
- Competitiveness: $SVO^\circ < -12.04$

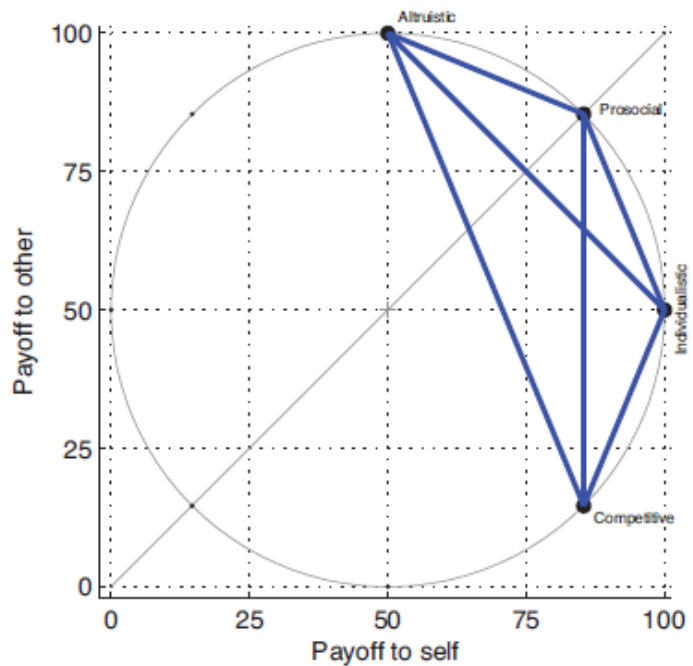


Figure 2: This figure shows the allocation of the altruistic level as a consequence of the six primary items of the SVO slider

The degrees are entered in the graph in figure 2, which shows the location (defined in degrees) where the subjects are allocated on the basis of the six primary items from the slider measure. ‘Altruistic’ is the highest form of altruism’, whereas ‘competitiveness the lowest form according to this model.

There is also a secondary SVO slider. This is used to zoom in on the results of the SVO sliders that scored ‘prosocial’. These secondary SVO Slider items must separate the prosocial motivations of joint maximization from inequality aversion through various computations. When the outcomes of the computations satisfy the conditions that are required, the Inequity-Aversion Index (IA-index) can be computed and the level inequality aversion versus joint maximization can be given. If the outcomes of the computation do not satisfy the conditions, there will be no categorization of the prosocial motivations. However, this data is not used, because a categorization of prosocial respondents is seen as irrelevant in light of this thesis. The outcomes of this test cannot contribute to the question if prosocial respondents that are more categorized as ‘inequity-averse’ or ‘joint-maximization’ affect their choice of performing favors.

4.3.1 Experimental results SVO measurements

As concluded earlier in this chapter, 35 of the 51 observations filled in the survey regarding the SVO measurement. A first striking observation in this response group was that only the levels 'prosocial' and 'individualistic' came out as altruistic levels. None of the respondents performed 'altruistic' or 'competitive', also the two highest and lowest level in this sector. An overview of the altruistic level of the respondents can be found in the appendix.

As can be seen in the overview, there is a splitting in the distribution of prosocial and individualistic respondents. It occurs that the respondents in the 'Social' treatment group are mostly prosocial respondents (22 versus 13). Remarkably, respondents in the 'Money' treatment group have exactly the same amount of individualistic and prosocial levels as the respondents in the 'Control' treatment group. This is consistent with the results of performing the second favor from the test that was conducted earlier in this chapter. Respondents seem to react more reciprocate towards the 'social' treatment group, than towards the control group and 'money' group.

When looking into gender, we can see that under the respondents in these group, there were 13 females versus 22 males. Divided into the social altruistic level, both the gender groups were more likely to be prosocial than individualistic (56% of the females versus 60% of the males). Within these gender groups, females are more likely to be individualistic than men (44% versus 40%). However, as stated above, males are dominating the respondents group in this sector.

In the next section, these results are also tested via the Wilcoxon Rank Sum test, to see if there is a link between the treatment groups and the altruistic level. Also other demographic result will be taken separately into account (education level, money rejected).

4.3.2 Effect treatment groups

Respondents seem to be more likely prosocial in the treatment group 'social' than in the other two treatment groups. Respondents in the groups 'control' and 'money' have an equal probability to be at the altruistic level 'prosocial'. Although these results lie in the line of expectations, they are not significant. Though, the p-value of the 'social' group is lower than the p-value of the other two groups (.1920 versus .4971). When testing the level

‘individualistic’ against the treatment groups, same outcomes are observed. This is explained by the fact that these are the only two levels observed in this experiment, so it is unlikely that this result is significantly different than the ‘prosocial’ group.

Also, no differences in means are observed when testing between the treatment groups. Although there seemed to be an effect when looking at the interaction between ‘money’ and ‘social’, the outcome is insignificant. Furthermore, all the other outcomes that are observed are insignificant.

4.3.3 Gender effects and education level

It would be interesting to see if respondents score differently on the altruistic level when looking into genders and education level. When testing gender against SVO-level, it seems that females are more likely to score prosocial than males, and males more individualistic than females. However, this observation is not significant.

Education level seems to have a different influence on the SVO score. Bachelor students are more likely to be prosocial than individualistic on a significance level of .0958. Although this is insignificant, it could be significant when this phenomenon would be tested on a greater scale.

4.3.4 Rejected money

Remarkably enough, it seems that the people who rejected the euro or social euro, are more likely to score individualistic at the SVO than the people who accepted the euro. However, two reasons could contradict this result. First, the sample size is too small and dominated by one variable (gender and/or level). Second, the results are not significant.

5. Discussion & conclusion

The results of this thesis experiment gave some interesting results, though mostly insignificant. This can be explained by the fact that the study population is too small to represent a significant outcome. However, that is not the objective of this thesis, since that is impossible to achieve for me as a bachelor student. In this chapter, the interpretation and meanings of the outcomes in the result section will be interpreted and will lead to the conclusion regarding this thesis experiment. Also, the limitations of this experiment and some directions for future research will be discussed.

5.1 Discussion

The first part of the analysis tested the results of the effect of treatment groups on performing the first and second favor. The results were that treatment groups had no significant influence on respondents performing the second favor. It seems that the p-value of the ‘social’ treatment group was the lowest among all three treatment groups. This could imply that in a much larger treatment group, this observation would be likely to turn significant at first. It would meet the expectations which were made earlier in this thesis, that a social treatment has greater effect on respondents than other treatments.

In contrast to the second favor, a significant effect was found when testing on the first favor for the ‘money’ group. This is an interesting observation, because it has not such a big effect on performing the second favor. Therefore, it could imply that people respond differently on performing favors for my thesis when offering them money (meaning through monetary incentives) on the one hand and performing the second favor, which has no importance for me, on the other hand (no meaning). However, it is also interesting to see that five of the respondents refused to accept the money and perform the favor(s) anyway. Although this observation was also insignificant, too less information is available and too few of such observations were made to form a sufficiently well fit explanation for this phenomenon.

No significant differences in means were found between the treatment groups and the second favor. However, there seems to be a significant treatment effect between ‘control’ and ‘money’ treatment and the first favor. This may be supported by the fact that more respondents in the ‘money group’ refused to perform the first favor and therefore did not have

the possibility to perform the second one. Therefore, there were also more observation for that treatment group than for the others. Because of the few respondents that refused the first favor, the mean difference between these groups could become significant.

There were also no gender effects found on both favors. However, gender effects on the first favor was lightly insignificant and, as stated before, may be found significant when tested on a bigger scale. That could imply that, assuming the same line of results will be found, males would be more likely to perform the first favor in comparison to females. Later on, it might also be interesting to see if there would be a link with the altruistic level of males in comparison to females. Education level has an influence on performing the second favor according to the results. Although bachelor students were dominating the sample size, also many master students performed the second favor. A possible explanation could be that, because they also conducted a bachelor thesis, they would be more likely to help fellow students out.

After testing on the SVO scale, all outcomes were insignificant. However, when looking observational to the results, it seems that 'social' treatment respondents score more 'prosocial' than the other group. Also, when linking this to the result of the favors (more respondents for favors in the treatment group 'social') it would be a logical outcome. A very interesting observation in this section of result was the SVO score of the respondents who rejected the money in the 'social' or 'money' treatment group. Where you would expect that they would score 'prosocial', most of them are scoring individualistic. It is very remarkable when you see that five of these six respondents also performed the second favor. It contradicts the expectations of rejecting the money as a signal of altruism towards me and that meaning would have a big influence on this phenomenon. However, as stated in the chapter of results earlier, this is insignificant and the sample has an insufficient size to form a credible explanation.

5.2 Conclusion

Overall, it can be said that social monetary incentives have the most positive influence on the performance of favors, since they represent the most respondents for the second favor. The money and control treatment did not differ much. It can imply that giving respondents one euro or nothing does not matter very much in performing favors, or that the reward is too low. This could be supported by the fact that the six respondents refused to accept the offered euro. Therefore, it would also be interesting to see if there would be a difference in the result if rewards would vary towards a much higher level. Unfortunately, I could not increase the reward due to the fact that it did not fit my personal budget. However, it would be an interesting point for future research. Although the control group and the money treatment group did not differ in this experiment, it cannot be said with certainty that plain monetary incentives does not matter at all. As stated many times in this thesis, the sample size of this experiment is too small to conclude this. It may be that the difference could be smaller than expected, but it must be tested on a bigger scale.

The influence of the used incentives in performing the first favor (i.e. the first survey) is very small. Almost all the respondents performed the first favor and in a few cases even for free when offered money. When looking at the results (refusing money offered), but also at the behavior when asking the respondents, the students (and especially master students) seem to do the favor with pleasure, because it is for my thesis. Meaning does play a big role when zooming into the first favor.

A majority of the respondents in the social monetary treatment group scored 'prosocial' on the SVO slider measure. Respondents in the money group are more individualistically rated, which is also according the expectations. As concluded earlier, it seems that people who receive plain money for a favor can have side effects when repeating for asking favors. Also, they only perform it, because of the money offered and therefore seem to be more individualistic. The striking observation that the people who rejected the money are also individualistically rated cannot be supported with hard evidence.

5.3 Limitations and directions for future research

Many results of this thesis experiment came out insignificant. Therefore, a very big part of this thesis cannot be used for a credible prediction of the outcome of favors in general (outside the university). However, as stated in the chapter of results, the fact that the results are for the most part not statistically significant is due to the small sample size. However, for me as a bachelor student, it was not feasible for me to get a bigger sample size, due to time and money constraints. The objective of this thesis was therefore to design a simple small-scaled experiment on this subject, that could be used as a step up for larger research. It would be interesting to see if this experiment, edited more professionally, would meet the results found in this thesis when investigating on a larger scale of respondents, or maybe even within a company. Since there is very little known about this subject, it would be very interesting to investigate this on a larger scale. The research conducted by Kube et al (2012) has proven that rewarding in a social way affects the performance of favors and performance within a company in general. However, it is the only field experiment conducted so far, many other results or interpretations are possible to confirm or maybe extend the results on this subject.

In addition to a larger scale, it would also be interesting to add more treatment groups and more various target groups. In this experiment, only students of the Erasmus University were approached, whereas it would be good to also have non-students and/or working people in the sample size. Another extra possibility could be to add extra treatment groups, where the different sample groups get 2 euro (or more) instead of 1 to see if there would be a difference in favor performance if more money is offered. Also, instead of only a social money treatment group, there could also be an extra treatment group who receives a small nonmonetary gift for performing the first survey. It would be interesting to see the difference in comparison with the social money treatment group. It might be that people are more valued to gifts than to money.

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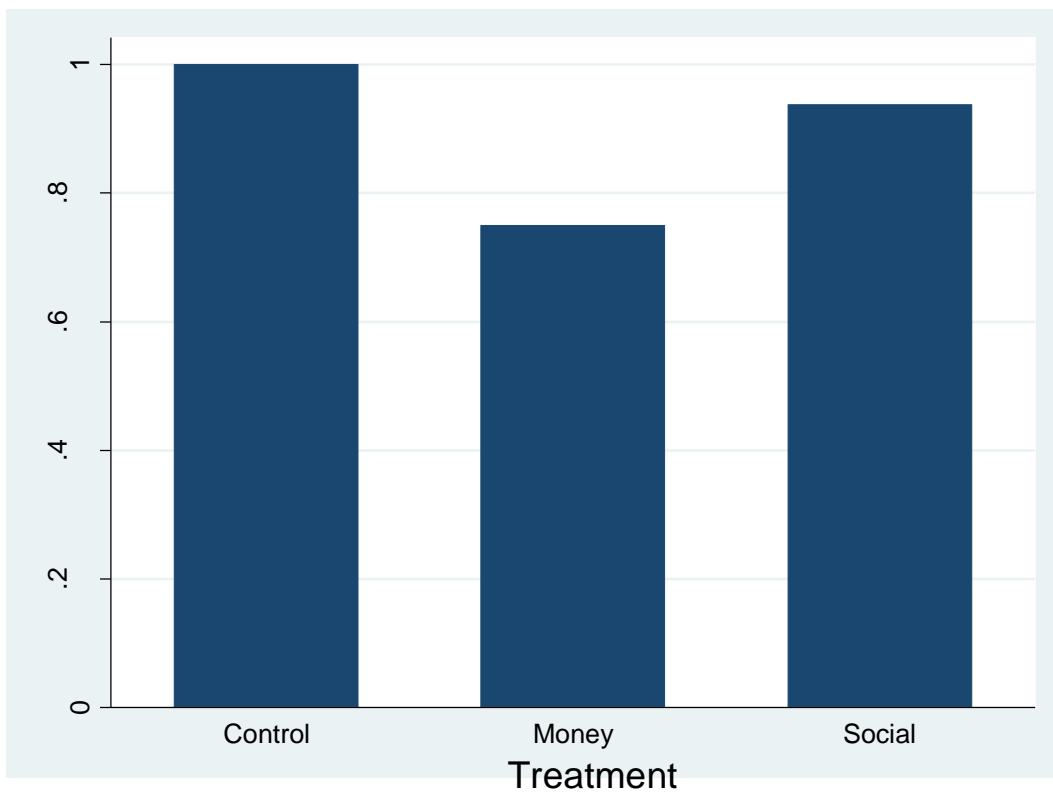
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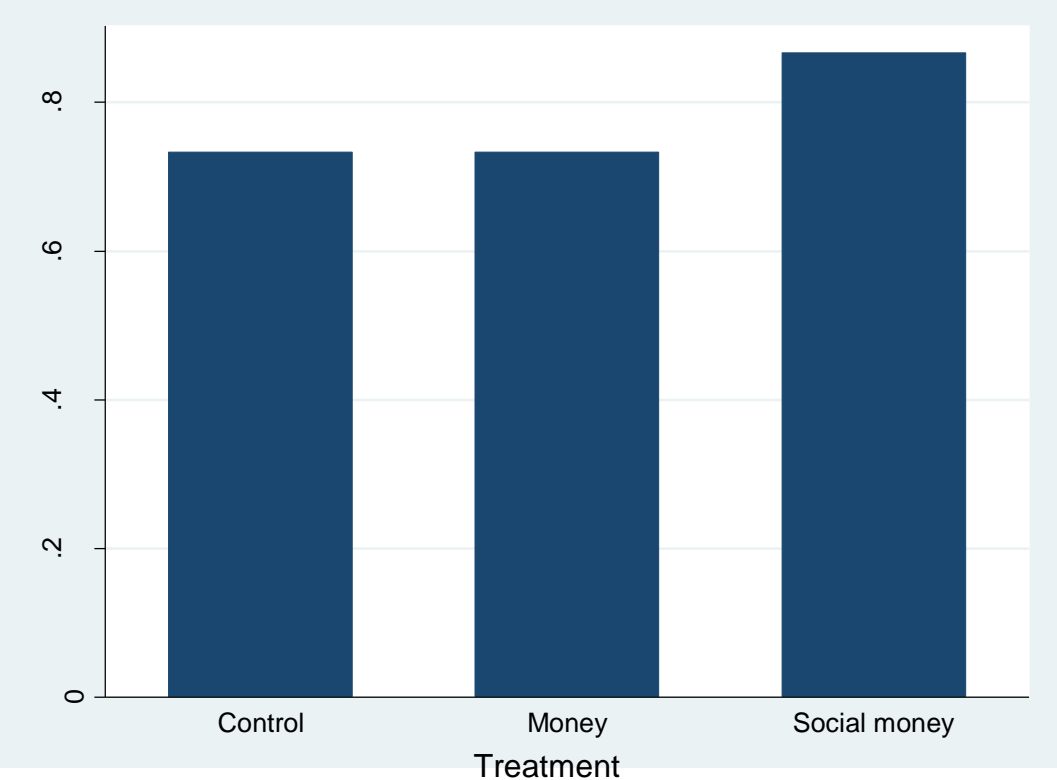
Appendix

A1. Graphs

Graph 1: Proportion of approached subjects that did the first survey by treatment



Graph 2: Proportion of approached subjects that did the second survey by treatment



A2. Tables

Table 1: Rank Sum Test control group – favor 1

Effect of the control group was tested against the performance of favor 1.

Value 1 = control group, 0 = other treatment group

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_cont~1	obs	rank sum	expected
0	36	891	936
1	15	435	390
combined	51	1326	1326

unadjusted variance 2340.00

adjustment for ties -1611.00

adjusted variance 729.00

Ho: Favor1(Dummy~ol==0) = Favor1(Dummy~ol==1)

z = -1.667

Prob > |z| = 0.0956

Table 2: Rank Sum Test money group – favor 1

Effect of the 'money' treatment group was tested against the performance of favor 1.

Value 1 = money group, 0 = other treatment group

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_money	obs	rank sum	expected
0	31	873.5	806
1	20	452.5	520
combined	51	1326	1326

unadjusted variance 2686.67

adjustment for ties -1849.67

adjusted variance 837.00

Ho: Favor1(Dummy_~y==0) = Favor1(Dummy_~y==1)

z = 2.333

Prob > |z| = 0.0196

Table 3: Rank Sum Test social group – favor 1

Effect of the ‘social’ treatment group was tested against the performance of favor 1.

Value 1 = social group, 0 = other treatment group

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_social	obs	rank sum	expected
0	35	887.5	910
1	16	438.5	416
combined	51	1326	1326

unadjusted variance 2426.67

adjustment for ties -1670.67

adjusted variance 756.00

Ho: Favor1(Dummy~al==0) = Favor1(Dummy~al==1)

z = -0.818

Prob > |z| = 0.4132

Table 4: Rank Sum Test control group – favor 2

Effect of the control group was tested against the performance of favor 2.

Value 1 = control group, 0 = other treatment group

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_cont~1	obs	rank sum	expected
0	30	705	690
1	15	330	345
combined	45	1035	1035

unadjusted variance 1725.00

adjustment for ties -830.11

adjusted variance 894.89

Ho: Favor2(Dummy~ol==0) = Favor2(Dummy~ol==1)

z = 0.501

Prob > |z| = 0.6161

Table 5: Rank Sum Test money group – favor 2

Effect of the ‘money’ treatment group was tested against the performance of favor 2.

Value 1 = money group, 0 = other treatment group

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_money	obs	rank sum	expected
0	30	705	690
1	15	330	345
combined	45	1035	1035

unadjusted variance 1725.00
adjustment for ties -830.11

adjusted variance 894.89

Ho: Favor2(Dummy_~y==0) = Favor2(Dummy_~y==1)
z = 0.501
Prob > |z| = 0.6161

Table 6: Rank Sum Test social group – favor 2

Effect of the ‘social’ treatment group was tested against the performance of favor 2.

Value 1 = social group, 0 = other treatment group

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_social	obs	rank sum	expected
0	30	660	690
1	15	375	345
combined	45	1035	1035

unadjusted variance 1725.00
adjustment for ties -830.11

adjusted variance 894.89

Ho: Favor2(Dummy~al==0) = Favor2(Dummy~al==1)
z = -1.003
Prob > |z| = 0.3159

Table 7: Rank Sum test control_money – favor 1

Effect of mean differences between the control group and money group was tested against the performance of favor 1. Value 1 = money group, 0 = control group.

```
Two-sample Wilcoxon rank-sum (Mann-Whitney) test

control_mo~y |      obs      rank sum      expected
-----|-----
          0 |      15      307.5      270
          1 |      20      322.5      360
-----|-----
    combined |      35      630      630

unadjusted variance      900.00
adjustment for ties      -569.12
-----
adjusted variance      330.88

Ho: Favor1(contro~y==0) = Favor1(contro~y==1)
      z =      2.062
      Prob > |z| =      0.0393
```

Table 8: Ranksum Test control_social – favor 1

Effect of mean differences between the control group and social group was tested against the performance of favor 1. Value 1 = social group, 0 = control group.

```
Two-sample Wilcoxon rank-sum (Mann-Whitney) test

control_so~l |      obs      rank sum      expected
-----|-----
          0 |      15      247.5      240
          1 |      16      248.5      256
-----|-----
    combined |      31      496      496

unadjusted variance      640.00
adjustment for ties      -580.00
-----
adjusted variance      60.00

Ho: Favor1(contro~l==0) = Favor1(contro~l==1)
      z =      0.968
      Prob > |z| =      0.3329
```

Table 9: Rank Sum Test money_social – favor 1

Effect of mean differences between the social group and money group was tested against the performance of favor 1. Value 1 = social group, 0 = money group.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

money_social	obs	rank sum	expected
0	20	340	370
1	16	326	296
combined	36	666	666

unadjusted variance 986.67
adjustment for ties -575.24

adjusted variance 411.43

Ho: Favor1(money_~1==0) = Favor1(money_~1==1)
z = -1.479
Prob > |z| = 0.1391

Table 10: Rank Sum Test control_money – favor 2

Effect of mean differences between the control group and money group was tested against the performance of favor 2. Value 1 = money group, 0 = control group.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

control_mo~y	obs	rank sum	expected
0	15	232.5	232.5
1	15	232.5	232.5
combined	30	465	465

unadjusted variance 581.25
adjustment for ties -239.87

adjusted variance 341.38

Ho: Favor2(contro~y==0) = Favor2(contro~y==1)
z = 0.000
Prob > |z| = 1.0000

Table 11: Rank Sum Test control_social – favor 2

Effect of mean differences between the control group and social group was tested against the performance of favor 2. Value 1 = social group, 0 = control group.

```
Two-sample Wilcoxon rank-sum (Mann-Whitney) test
```

control_so~1	obs	rank sum	expected
0	15	217.5	232.5
1	15	247.5	232.5
combined	30	465	465

```
unadjusted variance      581.25
adjustment for ties      -301.94
-----
adjusted variance        279.31
```

Ho: Favor2 (contro~1==0) = Favor2 (contro~1==1)
z = -0.898
Prob > |z| = 0.3694

Table 12: Rank Sum Test money_social – favor 2

Effect of mean differences between the money group and social group was tested against the performance of favor 2. Value 1 = social group, 0 = money group.

```
Two-sample Wilcoxon rank-sum (Mann-Whitney) test
```

money_social	obs	rank sum	expected
0	15	217.5	232.5
1	15	247.5	232.5
combined	30	465	465

```
unadjusted variance      581.25
adjustment for ties      -301.94
-----
adjusted variance        279.31
```

Ho: Favor2 (money_~1==0) = Favor2 (money_~1==1)
z = -0.898
Prob > |z| = 0.3694

Table 13: Rank Sum Test gender – favor 1

Effect of gender was tested against the performance of favor 1.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Gender	obs	rank sum	expected
Female	18	522	468
Male	33	804	858
combined	51	1326	1326

unadjusted variance 2574.00
adjustment for ties -1772.10

adjusted variance 801.90

Ho: Favor1(Gender==Female) = Favor1(Gender==Male)
z = 1.907
Prob > |z| = 0.0565

Table 14: Rank Sum Test gender – favor 2

Effect of gender was tested against the performance of favor 2.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Gender	obs	rank sum	expected
Female	18	391.5	414
Male	27	643.5	621
combined	45	1035	1035

unadjusted variance 1863.00
adjustment for ties -896.52

adjusted variance 966.48

Ho: Favor2(Gender==Female) = Favor2(Gender==Male)
z = -0.724
Prob > |z| = 0.4692

Table 15: Rank Sum Test education level – favor 2

Effect of education level was tested against the performance of favor 2.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

EducationL~1	obs	rank sum	expected
Bachelor	31	778	713
Master	14	257	322
combined	45	1035	1035

unadjusted variance 1663.67

adjustment for ties -800.60

adjusted variance 863.07

Ho: Favor2(Educat~1==Bachelor) = Favor2(Educat~1==Master)

z = 2.213

Prob > |z| = 0.0269

Table 16: Amount students who scored 'individualistic' and 'prosocial' on SVO slider.

SVO	Freq.
Individualistic	13
Prosocial	22

Table 17: Distribution SVO scores - Treatment Groups

SVO	Treatment		
	Control	Money	Social
Individualistic	5	5	3
Prosocial	6	6	10

Table 18: Distribution SVO scores - Genders

SVO	Gender	
	Female	Male
Individualistic	4	9
Prosocial	9	13

Table 19: Distribution SVO Scores - Education Level

SVO	Education Level	
	Bachelor	Master
Individualistic	8	5
Prosocial	19	3

Table 20: Rank Sum Test money group - SVO

The effect of the money group was tested against the SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

SVO	obs	rank sum	expected
Individualis	13	250	234
Prosocial	22	380	396
combined	35	630	630

unadjusted variance 858.00

adjustment for ties -302.82

adjusted variance 555.18

Ho: Dummy_~y(SVO==Individualistic) = Dummy_~y(SVO==Prosocial)

z = 0.679

Prob > |z| = 0.4971

Table 21: Rank Sum Test control group - SVO

The effect of the control group was tested against the SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

SVO	obs	rank sum	expected
Individualis	13	250	234
Prosocial	22	380	396
combined	35	630	630

unadjusted variance 858.00

adjustment for ties -302.82

adjusted variance 555.18

Ho: Dummy~ol(SVO==Individualistic) = Dummy~ol(SVO==Prosocial)

z = 0.679

Prob > |z| = 0.4971

Table 22: Rank Sum Test social group - SVO

The effect of the treatment group 'Social' was tested against the SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

SVO	obs	rank sum	expected
Individualis	13	202	234
Prosocial	22	428	396
combined	35	630	630

unadjusted variance 858.00

adjustment for ties -256.56

adjusted variance 601.44

Ho: Dummy~al(SVO==Individualistic) = Dummy~al(SVO==Prosocial)

z = -1.305

Prob > |z| = 0.1920

Table 23: Rank Sum Test control_money - SVO

Effect of mean differences between control group and money group was tested against SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

SVO	obs	rank sum	expected
Individualis	10	115	115
Prosocial	12	138	138
combined	22	253	253

unadjusted variance 230.00

adjustment for ties -57.14

adjusted variance 172.86

Ho: contro~y(SVO==Individualistic) = contro~y(SVO==Prosocial)

z = 0.000

Prob > |z| = 1.0000

Table 24: Rank Sum Test control_social - SVO

Effect of mean differences between control group and social group was tested against SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

SVO	obs	rank sum	expected
Individualis	8	84	100
Prosocial	16	216	200
combined	24	300	300

unadjusted variance 266.67

adjustment for ties -67.71

adjusted variance 198.96

Ho: contro~l(SVO==Individualistic) = contro~l(SVO==Prosocial)

z = -1.134

Prob > |z| = 0.2567

Table 25: Rank Sum Test money_social - SVO

Effect mean differences between social group and money group was tested against SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

SVO	obs	rank sum	expected
Individualis	8	84	100
Prosocial	16	216	200
combined	24	300	300

unadjusted variance 266.67
adjustment for ties -67.71

adjusted variance 198.96

Ho: money_~1(SVO==Individualistic) = money_~1(SVO==Prosocial)
z = -1.134
Prob > |z| = 0.2567

Table 26: Rank Sum Test gender - SVO

Effect of gender was tested against SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Gender	obs	rank sum	expected
Female	13	248.5	234
Male	22	381.5	396
combined	35	630	630

unadjusted variance 858.00
adjustment for ties -256.56

adjusted variance 601.44

Ho: prosoc~c(Gender==Female) = prosoc~c(Gender==Male)
z = 0.591
Prob > |z| = 0.5544

Table 27: Rank Sum Test education level - SVO

Effect of education level was tested against SVO scores.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

EducationL~1	obs	rank sum	expected
Bachelor	27	521.5	486
Master	8	108.5	144
combined	35	630	630

unadjusted variance 648.00

adjustment for ties -193.76

adjusted variance 454.24

Ho: prosoc~c(Educat~l==Bachelor) = prosoc~c(Educat~l==Master)

z = 1.666

Prob > |z| = 0.0958

Table 28: Rank Sum Test SVO – Rejected money

Effect of SVO scores was tested against the students who rejected the offer of 1 euro.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

SVO	obs	rank sum	expected
Individualis	8	116	100
Prosocial	16	184	200
combined	24	300	300

unadjusted variance 266.67

adjustment for ties -134.49

adjusted variance 132.17

Ho: Reject~y(SVO==Individualistic) = Reject~y(SVO==Prosocial)

z = 1.392

Prob > |z| = 0.1640

Table 29: Rank Sum Test money group – Rejected money

The effect of the money group was tested against the students who rejected 1 euro offered

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_money	obs	rank sum	expected
0	15	225	232.5
1	15	240	232.5
combined	30	465	465

unadjusted variance 581.25

adjustment for ties -268.97

adjusted variance 312.28

Ho: $\text{Reject} \sim y(\text{Dummy}_{\sim y} = 0) = \text{Reject} \sim y(\text{Dummy}_{\sim y} = 1)$

z = -0.424

Prob > |z| = 0.6713

Table 31: Rank Sum Test social group – Rejected money

The effect of the social group was tested against the students who rejected the 1 euro offered.

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

Dummy_social	obs	rank sum	expected
0	15	240	232.5
1	15	225	232.5
combined	30	465	465

unadjusted variance 581.25

adjustment for ties -268.97

adjusted variance 312.28

A3. Surveys used

Survey 1 about educational choice

- Age:

- Gender: Male/Female

- Educational level: Bachelor/Master

1. *What do you study at the moment?*

.....

2. *Was this your first study choice or did you follow another study earlier (and if so, which one)?*

.....

3. *What is your level of satisfaction about your educational choice so far?*

Not satisfied 1 2 3 4 5 Very satisfied

4. *How did you come up to your field of study?*

- University websites
- Visiting open days
- Taking trial classes at universities
- Information from your high school
- Other way, namely

5. *Why did you choose to follow your education at the Erasmus University?*

- Friends

- School advice
- General reputation
- Supply of studies
- Advice parents
- Other

6. Please mark how important the following factors were in your choice of your current study:

Factor	Not very important	1	2	3	4	5	Very important
Parental advice	
Job parents	
Marketing University	
Friends	
High school information	
Future job opportunities	
Financial crises	

7. Please mark how important the following factors were in your choice of the Erasmus University Rotterdam:

Factor	Not very important	1	2	3	4	5	Very important
Parental advice	
Job parents	
Marketing University	
Friends	
High school information	
Future job opportunities	
Financial crises	
Supply study	
Distance	
Student experience	

8. *The probability of getting a job after my education is more important than choosing a study which I really like.*

Not true 1 2 3 4 5 True

9. *Did you ever doubted about going to college after your high school diploma?*

Yes/No

If you have answered yes, please mark possible causes of that doubt:

- Lack of financial support from your parents
- Not knowing if you really wanted to study
- Doubts if you could handle the pressure
- Not knowing what you would like to study
- You rather wanted to work and earn money
- Something else, namely

10. *I would say the information I got in high school about college studies was*

Bad 1 2 3 4 5 Good

11. *If you could suggest some improvements in spreading information about college studies, what would you suggest regarding your own experiences?*

.....

.....

.....

.....

.....

Thank you!

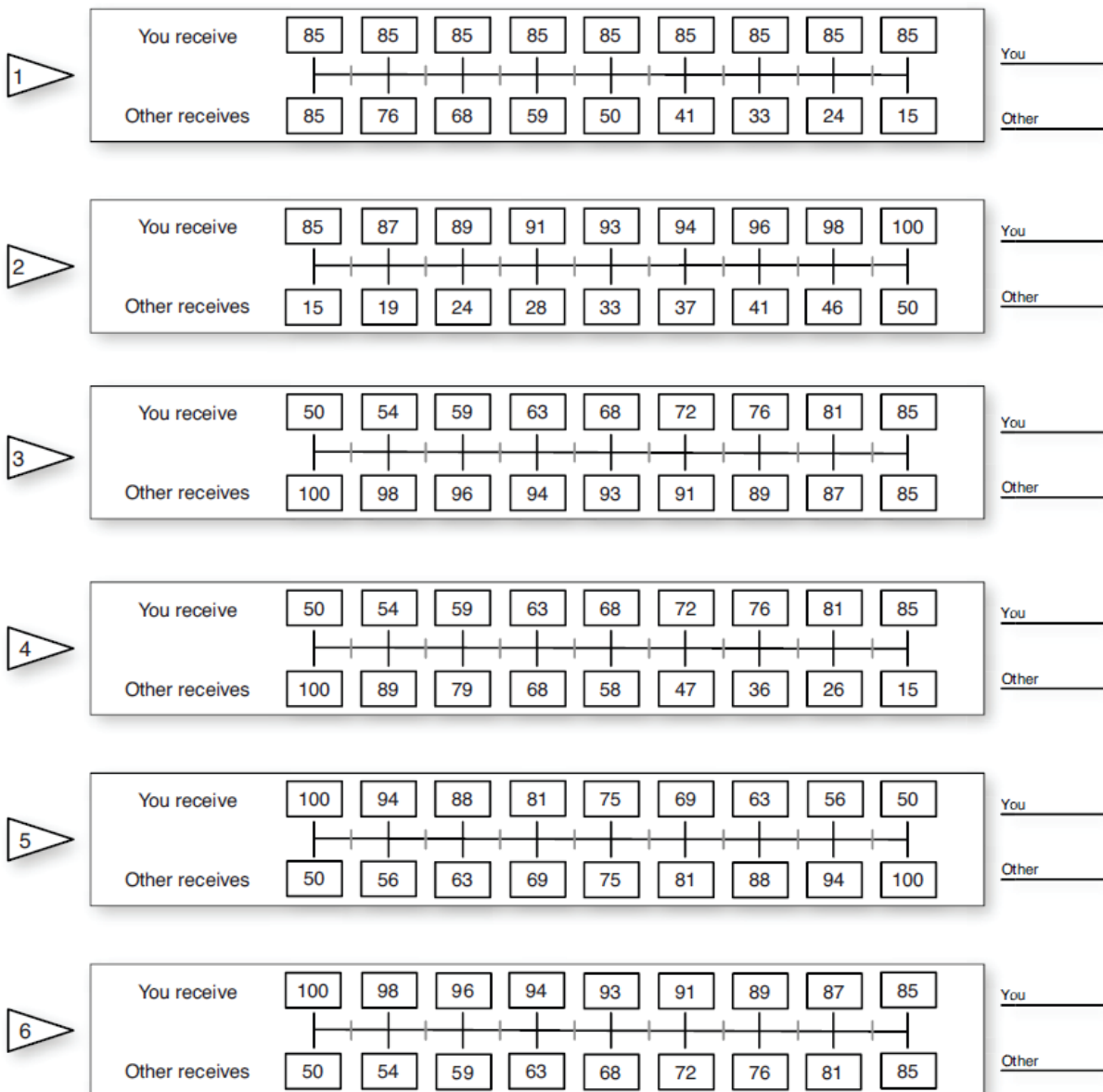
Survey 2: SVO slider measure

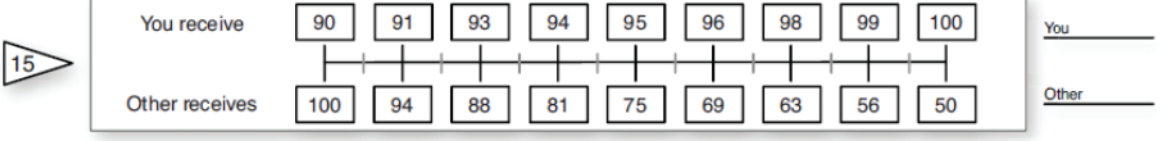
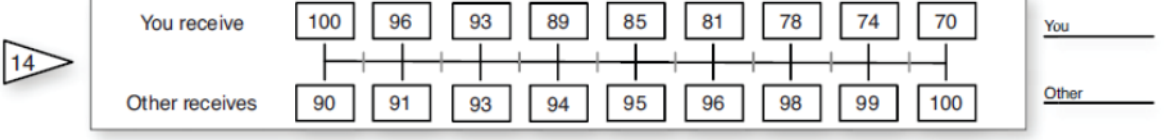
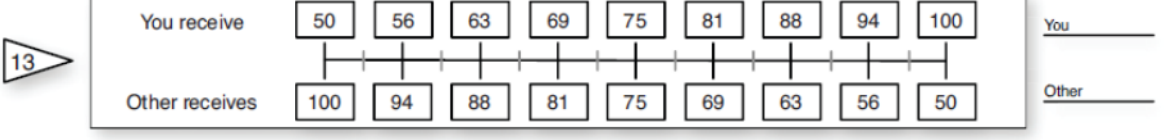
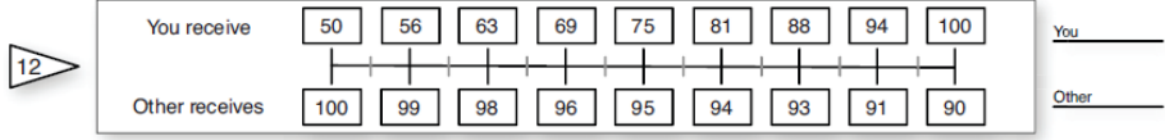
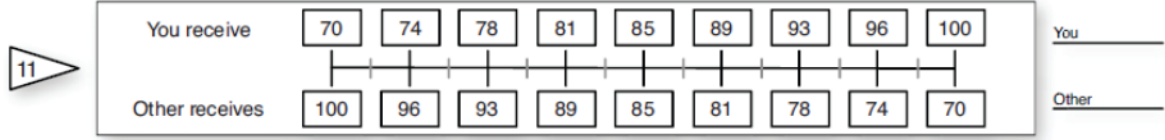
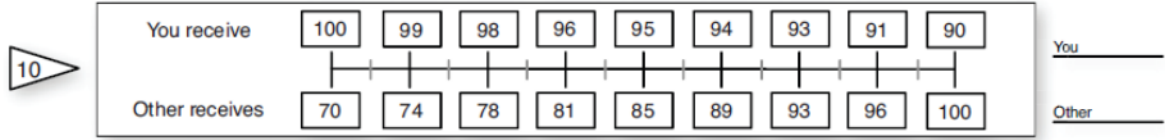
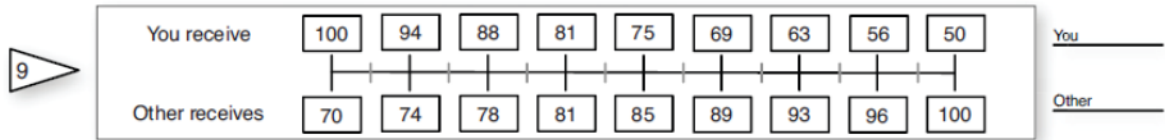
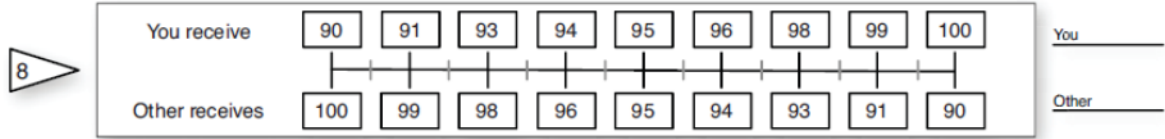
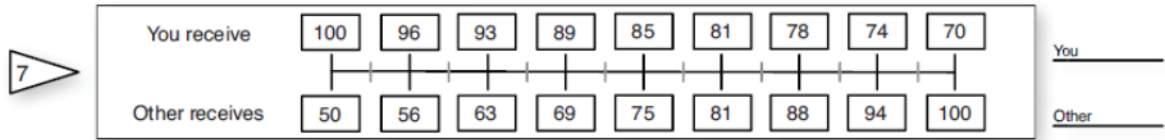
Age:

Gender:

Study:

Bachelor/Master





A4. The social monetary reward

One euro presented on a thank-you card:

