Does the Study Abroad Experience Affect Attitudes Towards Other Nationalities?*

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Abstract

Every year, millions of people relocate to a foreign country for school or work. This research provides evidence of how such international experience shifts preferences and stereotypes related to other nationalities. I use participation in the Erasmus study abroad program as a source of variation in international experience. Students who are ready to participate in the Erasmus program are chosen as a control group for students who have returned from studies abroad. Individuals make decisions in a Trust Game and in a Triple Dictator Game to decompose changes to statistical discrimination from changes to taste-based discrimination. Results show that while students do not differentiate between partners from Northern and Southern Europe in the Trust Game prior to an Erasmus study abroad, students who have returned from Erasmus studies abroad begin to exhibit less trust towards partners from the South. Behavior towards other nationalities in the Triple Dictator Game is not affected by the Erasmus study experience. Overall, the results suggest that participants learn about cross-country variation in cooperative behavior while abroad and therefore statistical discrimination increases with international experience.

Keywords: discrimination, inter-group contact, trust, identity, Erasmus

JEL classification: C9, D04, J15

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1 Introduction

Even though millions of people relocate abroad every year to study, work, or for personal reasons, little is known about how such experience affects attitudes towards other nationalities. On one hand, preferences can change through the creation of affective ties or establishment of a sense of common identity; these would predict a decrease in taste-based discrimination (Becker, 1971). In fact, increased exposure has long been highlighted as a factor that can help attenuate negative attitudes towards other groups.[1] On the other hand, there is growing literature showing differences in social capital across countries, usually taking interpersonal trust as the primary measure of social capital (Willinger et al., 2003; Holm and Danielson, 2005; Buchan et al., 2006; Guiso et al., 2009; Bornhorst et al., 2010).[2] If people learn about these differences while abroad, statistical discrimination (Arrow, 1973, 1998) towards other nationalities can be magnified by international experience.

In this paper, I evaluate the effect of a major program aiming to increase the international experience of its participants: the European Union's Erasmus program. I adopt an experimental approach to study attitudes towards other nationalities, which enables me to separate changes to statistical discrimination from changes to taste-based discrimination.

The Erasmus program is the largest student-exchange program in the world. In total, over 3 million students have participated since its foundation; currently, more than 250,000 students participate annually. To avoid many problems due to selection into the program, I compare students who have just returned from their Erasmus stay to successful applicants who are just about to leave for their stay. I use a Trust Game (Berg et al., 1995) as a proxy for a "business-like" interaction in which

[1] This approach is based on the intergroup contact theory(Allport, 1954; Pettigrew, 1998) and has been applied to tackling discrimination based on gender, race, ethnicity or disabilities. Empirical evidence shows that changes towards more positive attitudes are indeed possible (Beaman et al., 2009; Clingingsmith et al., 2009; Dobbie and Fryer, 2011; Laar et al., 2005; Boisjoly et al., 2006; Pettigrew and Tropp, 2006).

[2] Willinger et al. (2003) compare trust behavior in Germany and France, Holm and Danielson (2005) Sweden and Tanzania, Buchan et al. (2006) compare the U.S., China, Korea and Japan. Bornhorst et al. (2010) compare European countries, distinguishing between the North and South.

expectations about partners' behavior play a major role and a Triple Dictator Game as a measure of non-strategic prosocial motivation, following Fershtman and Gneezy (2001) and Bauer et al. (2014b). A total of 199 students from the Czech Republic participated in the experiment that took place either before or after their Erasmus stay in other European countries. The experiment required them to interact with partners of their own nationality and with partners from other European countries. As an important advantage over studies based on surveys, behavior was incentivized, and participants did not know that they had been invited into the study because of their past or future participation in the Erasmus program.

The main finding of this paper is that, while students prior to an Erasmus stay do not differentiate between partners from Northern and Southern Europe in the Trust Game, students with Erasmus experience start to exhibit lower trust towards partners from Southern Europe. This discrimination pattern is consistent with the variation in social capital across Europe, and the results overall support the notion that students learn about cross-country differences in cooperative behavior while abroad. Therefore, statistical discrimination towards other nationalities seems to become stronger with international experience. As a second finding, Erasmus experience does not shift preferences towards other nationalities. No bias towards game partners of a student's own nationality was identified in the Triple Dictator Game, either before or after the Erasmus stay.

The existing literature shows that a low level of social capital is linked to the efficiency of interpersonal interactions within society (Glaeser et al., 2000; Henrich et al., 2001; Alesina and La Ferrara, 2002; Henrich et al., 2006; Herrmann et al., 2008; Gachter and Herrmann, 2011), and therefore can hinder economic development (Knack and Keefer, 1997; Tabellini, 2010; Gorodnichenko and Roland, 2011). My results suggest that when taking a more globalized perspective, low social capital within a society can create additional barriers to development—as other nations learn about the low social capital of a country, cross-border interactions can also be affected, including diplomatic negotiations, or the amount of international trade.

Furthermore, this paper contributes to the discussion around group identity and its stability.[3] Exposure to foreigners could, in principle, help create a sense of common identity—a person may become closer to feeling like a "European" or a "world" citizen. Among policy makers, there is much optimism regarding this channel. The Erasmus program proclaims to be "changing lives, opening minds", and believes that "[T]heir experiences give students a better sense of what it means to be a European citizen."[4] Unfortunately, there is little evidence to support these claims, which is surprising given the scope and costs of the program.[5] The main problem is that most studies do not separate the effects of the program from the selection effect.[6]

Selection into the Erasmus program is an important issue, as under current conditions only about 5% of all European students participate in the program during their studies. The effects of Erasmus estimated in this article should be viewed as the average treatment effect on the treated. My results suggest that the strength of national identity does not change as a result of Erasmus experience. Apart from the fact that I find no bias against other nationalities in the Triple Dictator Game for the students before or after their Erasmus stay, the two samples also respond similarly when asked about the strength of European identity in a questionnaire. In this highly selective environment, students selected for the program seem to feel quite European even before their Erasmus stay. On the other hand, students in my sample

[3]Group identity plays a major role in interpersonal interactions, due to possible discrimination against outgroup members (Akerlof and Kranton, 2000). Biases in favor of one's own group have been identified both among groups created artificially in the laboratory (Tajfel et al., 1971; Charness et al., 2007; Chen and Li, 2009) and among real social groups (Goette et al., 2006; Bernhard et al., 2006). Using survey data on trust, Guiso et al. (2009) finds that there is an in-group bias towards one's own nationality.

[4]http://europa.eu/youth/article/erasmus-exchange-programme_en

[5]In 2007-13 alone, the costs of the Erasmus program amounted to 3.1 billion euros, and the budget of the adjusted *Erasmus+* program will substantially increase for the 2014-2020 period, in absolute terms and as a share of the total EU budget. http://europa.eu/rapid/press-release_MEMO-12-906_en.htm

[6]See the literature survey in Di Pietro (2013). The few exceptions focus on labor market outcomes: Parey and Waldinger (2010) and Di Pietro (2013) find a positive effect of a study abroad stay on future international labor mobility and employability, respectively, using a variation in program availability as an instrument for the participation decision. The European Commission has only recently published an evaluation of Erasmus that acknowledges the problem of selection and partially implements an ex-ante/ex-post survey design. See European Commission (2014).

who do not intend to go on Erasmus are more biased against foreign partners and feel less European. Therefore, if one of the intentions of study-abroad programs is to create a sense of common identity, the results of this research suggest they should try to recruit more students and especially target those who feel less "international" to begin with. Also, it may be worthwhile to target younger students, as results from behavioral studies show that the most sensitive window for the formation of individual preferences and group-identity occurs at an earlier age—during childhood and adolescence (Almå s et al., 2010; Fehr et al., 2011; Bauer et al., 2014a).

2 Experiment design

To identify the effect of international experience on preferences and stereotypes towards other nationalities, the research design consists of an experiment run on specific subject pools that differ in their degree of international experience—students before and after an Erasmus study-abroad stay. This section first describes the sample selection and then presents details regarding the experiment procedure.

2.1 Sample selection

This paper uses Erasmus program participation as the source of variation in international experience. Successful applicants who were just about to go on their Erasmus stay at the time of the experiment were taken as a control group for students who had just returned from their Erasmus stay. The design was applied between-subject. The experiment took place in Prague, the Czech Republic, and the sample selection process can be summarized as follows:

I cooperated with the largest university in the Czech Republic, Charles University in Prague,[7] and obtained a database of all their students who participated in the Erasmus program in the academic year 2011/12 (1009 students) and in the academic

[7] Charles University has over 50,000 registered students. It also sends more students to the Erasmus program than any other Czech school; for illustration, 5,589 students from Czech universities participated in the Erasmus program in the academic year 2010/2011. Out of these, almost one fifth (1,056), were from the Charles University.

year 2012/13 (923 students). Students from the 2012/13 database were recruited as "Before Erasmus" subjects for sessions that took place in June 2012, while students from the 2011/12 database were recruited as "After Erasmus" subjects for sessions in June 2012 and November 2012.[8]

The email invitation to the experiment did not mention the Erasmus program, but encouraged the recipient to take part in a paid experiment in decision making. The e-mail included a personalized link, which was used for online registration into one of the available sessions. Overall, more slots were opened for the "After Erasmus" students compared to the "Before Erasmus" students and more students from the 2011/12 database were invited, compared to the 2012/13 database. This is because the "After Erasmus" had to be invited to both June 2012 and November 2012 sessions, to be able to control for time effect; see the discussion in section 2.2.

The two main samples consist of 75 local students who were about to leave on their Erasmus stay in other European countries ("Before Erasmus" sample) and 124 local students who had already returned from their study-abroad stay ("After Erasmus" sample).[9] Summary statistics of the "Before Erasmus" and "After Erasmus" samples are presented in Table 1, which shows that the two samples do not differ in characteristics other than age. There is a sufficient variation in terms of age when students go on Erasmus, so age can and will be controlled for in the analysis.[10]

Apart from the two main samples "Before Erasmus" and "After Erasmus", there

[8]Each of the 2011/12 and 2012/13 pools was randomly divided into thirds, stratifying with respect to gender, major and the country of the Erasmus stay. Two thirds of each pool were invited for participation in the experiments in June 2012; two thirds of the 2011/12 pool were invited again in November 2012. This means that one-third of the 2011/12 pool was invited twice, however, each subject could participate only once.

[9]Both Czech and Slovak students are perceived as local in the baseline analysis. Slovak students are largely present at Czech universities, due to the lack of a language barrier and cultural proximity. For Charles University, 13.7% of students are foreigners, of which Slovak students form 46%, according to the 2011 annual report. The results presented in the text are robust to limiting to Czech subjects only. Also, one subject about to go on Erasmus and three subjects with Erasmus experience are neither Czech nor Slovak, but are foreign students doing their degree in Prague and going on Erasmus elsewhere. These subjects are not included in the baseline "Before Erasmus" and "After Erasmus" samples. However, the results presented below are robust to including these subjects.

[10]Furthermore, several robustness checks were performed to make sure the effect of study-abroad stay is estimated, not the effect of age, such as restricting the sample to common support in terms of age. Results are available upon request.

are two auxiliary samples:

First, the aim is to study behavior towards partners of different nationalities, and to do so without deception. Therefore, international students had to be recruited. Incoming Erasmus students at Charles University were invited by e-mail, and a further recruitment campaign was run on social networks. To ensure sufficient variety of nationalities during the experiment, each session had hidden registration limits for local subjects and international subjects, where the limits were set separately for subjects from Northern and Southern Europe.[11] Overall, 164 international students participated in the experiment.

Second, a sample of 53 local students with no connection to the Erasmus program ("Never Erasmus" sample) is used to consider selection into the program. These students were recruited through the social network campaign and their Erasmus status was checked using the database of all Erasmus stays in the past years and by asking questions about study-abroad experience in the end-questionnaire.

2.2 Identifying Assumptions

For the identification strategy to hold, three assumptions must be made:

First, the pools of students going on Erasmus in the two consecutive years 2011/12 and 2012/13 must be the same, in terms of baseline attitudes towards other nationalities. In other words, the only difference between the two pools is the realized stay abroad. The Erasmus program did not change between the two academic years, nor did the selection processes. Comparing the observable characteristics of the 2011/12 and 2012/3 databases of all outbound Charles University students[12], there are no significant differences between the two pools in terms of gender, field of study, or the region of the Erasmus stay (see columns 1 and 2 of Table 7 in the Appendix). The only difference is that more students in the 2012/13 database were enrolled in a BA-level program at the time of application.

[11] A smaller number of slots was opened for students of other nationalities, to avoid suspicion regarding the purpose of the research project during recruitment and during the experiment itself.

[12] Information available includes each student's field of study, study level, and specific information on the Erasmus stay, including the host country, host university, and timing of the stay.

The second assumption is that preferences towards specific nationalities did not change between June 2012, when "Before Erasmus" students participated in the experiment, and November 2012, when most "After Erasmus" students participated.[13] This is the reason why some "After Erasmus" students were invited into the June 2012 sessions—a robustness check can be run by comparing the two "After Erasmus" subsamples (see Figure 7 in the Appendix).

Third and most importantly, the experiment participants "After Erasmus" and "Before Erasmus" cannot differ in aspects other than the international experience itself, i.e. recruitment from the 2011/12 and 2012/13 databases of outgoing Erasmus students must be equally successful. The recruitment process consisting of e-mail invitations and online registration was described above and was identical for the two pools. Most slots opened for registration were filled and the response rates were similar for the 2011/12 and 2012/13 databases—in respect to the number of experiment participants in relation to the number of invitations sent, the response rates are 11.8% and 12.1%, respectively. I have already argued that the two samples do not differ in characteristics other than age (see Table 1).

Last but not least, the experiment samples "Before Erasmus" and "After Erasmus" can be compared to all Charles University outbound Erasmus students in the respective years. Se Table 7 in the Appendix. Considering the characteristics available (gender, level of study, field of study, host country), recruitment into the experiment seems to be successful. There are 10% more males than would be typical in the program, more students of Business, Economics and Law, and fewer students of Medicine. However, these differences can potentially be attributed to the gender limits set in recruitment.[14] Gender variety was needed for the chosen design which manipulates nationality, gender, and field of study of game partners. The gender limits were more likely to be binding for females, as women form a vast majority (around 70%) of all Erasmus program participants.

[13] It was impossible to run all sessions in the same month—many 2011/12 outbound students were not back from their stay by June 2012, while many 2012/13 outgoing students would be gone by September 2012.

[14] The gender ratio in the experimental sessions could not exceed two thirds in either direction.

2.3 Experiment Procedure

Seventeen experiment sessions were organized (nine in June 2012 and eight in November 2013), with the number of subjects per session ranging from 20 to 28. All sessions took place at the Laboratory of Experimental Economics in Prague. Each session consisted of an introduction in which participants recorded their nationality, gender, age and study major, followed by the main section in which the Triple Dictator Game and the Trust Game were played in a randomized order, of a payoff stage where the individual payoffs were determined, and of an end-questionnaire that focused primarily on the past international experience of the subjects. The experiment was programmed and conducted using the software z-TREE (Fischbacher, 2007).

Participants received written instructions before each stage of the experiment. All payoffs were stated in experimental currency units (ECU). Participants did not receive any feedback on their performance or payoff until the final stage, where they randomly (by hitting buttons on the screen) selected periods relevant for payment. The experiment lasted on average 2 hours and the average payment was 457 CZK (approximately 18 EUR).[15]

It is important to note that subjects' Erasmus program (past or future) participation was not mentioned either in the invitation, or at any point of the experiment.[16]

2.3.1 Experiment tasks

In the Trust Game, Player A ("Sender") had an endowment of 100 points in each period, while Player B ("Receiver") had an endowment of 0. In the first stage, Player A decided whether and how much s/he wished to transfer to Player B, choosing between 0, 20, 40, 60, 80 and 100 points. The amount sent was tripled. In the second stage, Player B decided how many points s/he wanted to send back to

[15]Student wages in Prague are around 3-4 EUR/hour on average.

[16]At the end of the experiment, students were asked to state the perceived purpose of the study. Erasmus program participation was not mentioned by any subject.

Player A for any amount potentially sent by Player A, a strategy method was used. The structure of the game was common knowledge. In addition to actions, beliefs were also elicited. Specifically, these were Player A's first-order and second-order beliefs and Player B's first order beliefs.[17]

The structure of the Triple Dictator Game is similar to the Trust Game, except that there is no second stage. Player A decided whether and how much s/he wished to transfer to Player B, choosing between 0, 20, 40, 60, 80 and 100 points and the amount sent was tripled. However, Player B was only a passive receiver of Player A's points and did not make any active decisions. In each round, s/he was asked to report only his/her first-order beliefs, i.e. how much s/he thought each Player A would send. Player A's second-order beliefs were also elicited.

Each subject played both roles, Player A and B. The order of roles was randomized across sessions, and subjects learned about the existence of the second part only after they finished their decisions in the first role.

2.3.2 Manipulating a partner's characteristics

The identity of partners was varied on a within-subject level. In each game, Player A was asked to make decisions about sixteen potential Player Bs. Each partner was characterized by a profile stating nationality, gender, age, and field of study.[18] Analogously, Player B was asked to make decisions regarding sixteen potential Player As. The decision maker always saw four profiles of potential partners at once and played four of these rounds. To determine the composition of partners' profiles in a given round, session participants were randomly matched in groups of four and one

[17] How much Player A thinks B will return for the amount actually sent, how much Player A thinks B expects from him, and how much Player B expects from A, respectively. Subjects receive a bonus of 20 points if they guess correctly. One round is chosen randomly for the payment on beliefs and one partner from that round is relevant for payment.

[18] Participants were asked to provide nationality, gender, age, and field of study at the beginning of the experiment and knew they would be displayed to the decision makers. Five categories were distinguished with respect to field of study: Business, Economics or Law; Humanities, Social Sciences or Education; Math, Physics, Natural Sciences or Technical; Medicine; Arts, Philosophy and Languages.

hypothetical profile was added.[19] The profiles were displayed in a random order. One of the sixteen decisions in each role was relevant for payment.

In this paper, a partner's nationality is of primary interest. Additional information was used to decrease the risk of an experimenter-demand effect (Bardsley, 2005), while ensuring that nationality was sufficiently salient. Limits set during the registration process ensured enough variation in nationalities and gender within each session.

The Trust Game was applied in the above setting to study how trust behavior depends on partner's nationality. Behavior in the Triple Dictator Game can be used as a measure of non-strategic prosocial preferences, capturing preferences jointly for altruism, inequality aversion, and efficiency maximization. Therefore, observing behavior in the Triple Dictator Game can help to disentangle preference-based and beliefs-based component of trust. Differentiation between partners of different nationalities in the Triple Dictator Game will be understood as taste-based discrimination. After accounting for behavior in the Triple Dictator Game, differentiation by partners' nationality in the Trust Game will be perceived as statistical discrimination.

3 Results

3.1 Learning Channel

I first examine whether students learn about cross-country differences in behavior while abroad. To test this "learning channel", the focus is on the Trust Game, where a partners' expected behavior can influence the senders' decision. I will examine how senders before and after an Erasmus stay differentiate between partners from Northern and Southern Europe. The choice of these two regions is motivated by

[19] The hypothetical profile, which was the same for all subjects in a given period, was added to ensure enough variation in partner profiles. No deception was involved as players were always asked to state their decisions for all four potential partners they could see, but knew that they would be matched with only one of the four.

the variation in social capital across Europe; people from Southern Europe are much less likely to state that other people can be trusted, compared to people from Northern Europe; see Figure 1.[20] The division of countries into the respective categories is presented in Table 2.[21] I hypothesize that with learning, students will start to differentiate more between partners from Northern and Southern Europe, and specifically so in the Trust Game, where a partners' behavior actually matters.

Figure 2 shows the average amount sent in the Trust Game by senders before or after their Erasmus stay to partners from Northern and Southern Europe. The results are presented both in levels (Panel A) and as a difference between partners from the two regions (Panel B). Senders "Before Erasmus" sent on average 57 points to partners from the North and 60.3 points to partners from the South. This means that they felt actually more favorable towards Southern receivers, but the difference is not significant (Wilcoxon rank-sum test, $p = 0.305$). Senders "After Erasmus", on the other hand, sent significantly more points to Northern partners than to Southern partners (58.3 vs. 52.8 points, $p = 0.020$). Put differently, while subjects from Northern Europe received similar amounts from senders before and after Erasmus ($p = 0.6$), subjects from Southern Europe received significantly lower amounts from senders with more international experience ($p = 0.015$).

The effect of Erasmus on the trust towards partners from Northern and Southern Europe is estimated using the following regression model:

$$AmountSent_{i,j}^{TG} = \alpha + \beta AfterErasmus_{i,j} + \gamma RecipientSouth_{i,j} + \delta RecipientSouth_{i,j} * AfterErasmus_{i,j} + X'_{i,j}\theta + \varepsilon_{i,j} \quad (1)$$

,where $AmountSent_{i,j}^{TG}$ is the amount of points sent in the Trust Game by sender i to receiver j. Erasmus status of the sender is captured by an indicator variable $AfterErasmus_{i,j}$ and the nationality of the receiver by an indicator variable

[20] Data from the World Values Survey (WVS) are used. The Figure summarizes answers to the WVS question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" See Figure 6 in the Appendix for a more detailed map of trust across European countries.

[21] Only countries of origin for at least one participant in the experiment are listed.

$RecipientSouth_{i,j}$. The baseline is therefore the amount sent by senders "Before Erasmus" to partners from Northern Europe. Vector $X_{i,j}$ consists of a range of other control variables described below. The interaction term $RecipientSouth_{i,j} * AfterErasmus_{i,j}$ is of primary interest. The coefficient δ captures how the discrimination pattern between Northern and Southern partners changes as a result of Erasmus program participation. Standard errors are clustered on the sender level.

Equation 1 is estimated using OLS and the results confirm that there is a negative effect of Erasmus stay on trust towards Southern partners (column 1 of Table 3).[22] This result holds even when controlling for other senders' and receivers' characteristics observable through the games (gender, age, field of study), for the order of the two games (Trust Game, Triple Dictator Game), and for the order of the two roles (sender, receiver); see columns 2-3 of Table 3. Estimation results using ordered probit, which takes into account the discrete nature of the dependent variable, are presented in columns 4-6 of Table 3.

Result 1: *With increased international experience, subjects start to differentiate between partners from Northern and Southern Europe in the Trust Game, sending lower amounts to partners from Southern Europe.*

3.1.1 Underlying Mechanism - beliefs

The data suggest that lower trust towards partners from Southern Europe after Erasmus is driven by learning about behavioral differences across countries. In other words, the effect of Erasmus seems to occur via changed beliefs. There are three main reasons for such a claim.

First, the way students with Erasmus experience differentiate between partners in the Trust Game is consistent with the variation in trust behavior across Europe. Southern Europe scores much lower in interpersonal trust than Northern Europe (see Figure 1). While Czech students with less international experience ("Before

[22] An alternative model was also estimated that included decisions about local partners and decisions about partners from Eastern Europe. Estimation results are presented in Table 8 in the Appendix and give a picture similar to the one estimated by this simpler model; Erasmus stay has negative impact on trust towards partners from Southern Europe.

Erasmus") do not differentiate between Northern and Southern partners in the Trust Game, those with study-abroad experience start to do so.

Second, behavior in the Triple Dictator Game can be used to measure non-strategic prosocial motivations towards partners from Northern and Southern Europe. Amounts sent in the Triple Dictator Game are presented in Figure 3. While "Before Erasmus" students treat Southern partners more favorably than Northern partners in the Triple Dictator Game (sending 31.3 vs. 28.2 points to the two groups, $p = 156$, using Wilcoxon rank-sum test), students "After Erasmus" prefer Northern partners, but the difference is small and insignificant (26.2 points vs. 24.4 points, $p = 0.431$). Comparing Panel B of Figure 2 and Panel B of Figure 3, the differentiation between partners from Northern and Southern Europe in the Trust Game cannot be explained by differences in the preference-based, nonstrategic component of trust.

Third, the observed change in behavior in the Trust Game is accompanied by a change in beliefs, which were measured separately. The measure of expected trustworthiness is potentially problematic as senders were asked how much they think Player B would return only for the amount that was actually sent. As subjects "After Erasmus" actually sent lower amounts to partners from the "South", the expected trustworthiness is elicited for amounts sent that were on average lower. Still, beliefs about trustworthiness move in the direction that corresponds to the change observed in the trust behavior; see Panel A of Figure 4, even though the change is not significant.

As a cleaner measure of a change in beliefs, I next examine beliefs about trust behavior of senders from Northern and Southern Europe.[23] Trust and trustworthiness are closely linked. When considering individual-level behavior in our sample, trust and trustworthiness behavior is significantly correlated, both for the local students "Before Erasmus" and "After Erasmus" (Spearman's rank correlation, $\rho = 0.4570, p < 0.001$) and for foreigners from Northern and Southern Europe

[23]Beliefs about points received from these senders in the Trust Game from the position of local receiver before or after his/her Erasmus stay.

$(\rho = 0.4682, p < 0.001)$.[24]

The effect of Erasmus on beliefs about partners' trust behavior is presented in Panel B of Figure 4. The change in beliefs mirrors the effect found for the amount sent in the Trust Game (compare to Figure 2). While subjects "Before Erasmus" do not have different beliefs about trust of Northern vs. Southern partners, subjects "After Erasmus" expect senders from Southern Europe to be less trusting than Northern senders. This pattern is again consistent with the map of interpersonal trust across Europe, referring to Figure 1. Results from regression analysis are presented in Table 9 in the Appendix and confirm that the change in beliefs is large and significant even when controlling for the observable characteristics of senders and receivers, and for order effects.

3.1.2 Going North or Going South

It is important to note that students going on Erasmus necessarily meet people from both Northern and Southern Europe, regardless of where they go. However, it can still be checked whether the effect of the Erasmus experience depends on the subject going "North" or "South". This is done by re-estimating the specification (1) separately for students with a (planned or realized) Erasmus stay in Northern Europe and separately for students with an Erasmus stay in the South.

Regression results are presented in Table 4. Overall, independently of where students spent their study-abroad stay, Erasmus participation changes the relative treatment of partners from Northern and Southern Europe. But the underlying story differs by the region of the Erasmus stay.

Subjects going "North" (column 2 of Table 4) do not differentiate between partners from Northern and Southern Europe before their Erasmus stay, but they send

[24] Figure 8 in the Appendix summarizes this result graphically. As a measure of an individual's trust level, I computed the average amount sent in the Trust Game, averaging over the 16 profiles of potential partners. As a measure of individual's trustworthiness, I computed average return ratio (*Return ratio= amount returned to sender/(3*amount sent by sender)*, averaging over all receiver's decisions. Each receiver makes 80 trustworthiness decisions - for 16 profiles of potential senders and 5 trustworthiness decisions per sender, as receiver's decisions were elicited using the strategy method.

significantly less to partners from the South after their stay, as measured by the term $RecipientSouth_{i,j} + RecipientSouth_{i,j} * AfterErasmus_{i,j}$ in specification (1) ($p = 0.027$).

Subjects going "South" show a strong preferential treatment of partners from Southern Europe before the Erasmus stay, suggesting self-selection in terms of where students decide to go—holding a positive image of Southern Europe, the students decide to go "South". The pattern changes dramatically with the study-abroad experience. Students with Erasmus experience show higher trust towards partners from Northern Europe, even though this difference is not significant ($p = 0.393$). In terms of effect size, students with experience in Southern Europe are driving the negative overall effect of Erasmus on trust towards Southern partners.

3.2 Preference Channel

After examining the learning channel of international experience, this section focuses on the change in preferences towards other nationalities. The logic of the analysis performed here is different to the one used in the previous section. The hypothesis is that the study-abroad experience leads to more favorable treatment of foreign partners, through creating affective ties or through strengthening a sense of common identity. Therefore, I no longer compare behavior towards Northern and Southern partners. Rather, I examine how students behaved towards their ingroup (partners of students' own nationality) and outgroup (partners of other nationalities) and whether the in-group bias diminished with an Erasmus stay. The focus is on the behavior in the Triple Dictator Game—it provides a cleaner measure of non-strategic prosocial preferences, given the partner has only a passive role in this game.

Figure 5 plots the average amounts sent in the Dictator Game by the Erasmus status of the sender ("Before Erasmus" or "After Erasmus") and by whether the partner was of the same nationality as the sender or not. The results show that there is a small and insignificant in-group bias towards their own nationality for the students who were about to participate in the Erasmus program (Wilcoxon

rank-sum test, $p = 0.758$). Study-abroad experience then has a negative impact on the amount sent in the Triple Dictator Game, both when the partners are of the sender's own nationality ($p = 0.075$) and when they are of a different nationality ($p = 0.004$). The in-group bias for students "After Erasmus" is still small and insignificant ($p = 0.161$).

Estimation results are presented in columns 1-3 of Table 5, confirming that subjects after an Erasmus stay sent lower amounts than subjects before Erasmus. Subjects did not significantly differentiate between local and foreign recipients, and this result holds for students both before and after an Erasmus stay. When disentangling between international partners from Northern, Southern and Eastern Europe (columns 4-6 of Table 5), the results show that only for students "Before Erasmus", there is a small significant bias against partners from Northern Europe, when controlling for other characteristics. Potentially, students "Before Erasmus" perceived partners from the North as wealthier and therefore less needy than other partners.

Overall, the results of this experiment do not support the hypothesis that international experience lessens negative attitudes towards other nationalities. However, this is because no preferential treatment of the subjects' own nationality was found. If anything, then the in-group bias is slightly greater for students with study-abroad experience.

Result 2: *There is no bias towards partners of a student's own nationality in the Triple Dictator Game. This result holds both for the students who are about to leave for their Erasmus stay, and for those who have already returned from their study-abroad stay.*

There are two possible explanations for this result. Either there is no bias towards their own nationality in the population of students, or those who self-select into going abroad already identify as "European". My results provide suggestive evidence for the latter argument.

To investigate the role of (self-) selection, I compare the behavior of students

"Before Erasmus" stay to an auxiliary sample of 53 non-participants (the "Never Erasmus" sample).[25] Estimation results are reported in Table 6. The "Never Erasmus" students differentiate more between local and foreign partners in the Triple Dictator Game than students "Before Erasmus". The in-group bias is about twice the size and the zero hypothesis of no in-group bias can be rejected at the 10% level for the "Never Erasmus" students, when controlling for other observable characteristics.

If not taking selection into account, one could mistakenly conclude that international experience inspires students to identify more strongly as European. Using data from the end-questionnaire, the "Never Erasmus" students are less likely to identify themselves as part of the European Union, compared to students "After Erasmus" (58.6% vs. 83.1% $p = 0.001$, Wilcoxon rank-sum test). However, including the "Before Erasmus" students into the picture shows that there is a large and statistically significant difference between the non-participants and students who are about to participate in the program (58.6% vs. 80%, $p = 0.009$). The effect of the program—a difference between the "Before Erasmus" and "After Erasmus" students—is only small and statistically insignificant (80% vs. 83.1% who claim to feel they are members of the European Union, $p = 0.197$). This further highlights the advantages of the identification strategy used in this paper.

4 Conclusion

This paper examines whether attitudes toward other nationalities change with international experience. The variation in international experience was obtained by exploiting participation in the Erasmus study-abroad program—the behavior of students who were about to participate in the program (75 students) was compared to the behavior of students who already completed their study abroad stay (124 students). Participants anonymously interacted with partners of different nationalities

[25]The results should be perceived as suggestive evidence only, because I cannot claim that these students are a representative sample of all students who do not participate in the Erasmus program.

in a Trust Game and in a Triple Dictator Game. The Triple Dictator Game was used to control for a preference-based component of trust, helping to disentangle between statistical and taste-based discrimination.

I found the study-abroad experience affected behavior towards other nationalities in the Trust Game. Particularly, while subjects prior to an Erasmus stay did not differentiate between partners from Northern and Southern Europe, subjects with study-abroad experience started to do so, exhibiting lower trust towards partners from the South. Such a discrimination pattern is consistent with the lower rank of Southern countries in terms of general trust, as measured by the World Values Survey. As there is also an accompanying change in beliefs about cooperative behavior of partners from Southern Europe, the results overall support the hypothesis that people learn more about cross-country differences in social capital while abroad and subsequently change their behavior according to their experiences. Therefore, the results suggest that statistical discrimination towards different nationalities increases with international experience. This means that in a situation where there are differences in social capital across countries, globalization can create additional challenges for countries with lower social capital.

Asking next whether international experience affects preferences towards other nationalities, I focused on the behavior in the Triple Dictator Game and examined the strength of an in-group bias towards partners of a student's own nationality. The results show that even before their Erasmus stay abroad, senders do not show preferential treatment of partners coming from the same country, and preferences towards other nationalities do not change with Erasmus. Still, the Erasmus program is highly selective and the effects presented in this article should be understood as the average treatment effect on the treated. There could be potential for the program to increase a sense of European identity, if it were able to target students who feel less "European" to begin with.

Overall, this paper confirms that individual attitudes towards people from other groups—nationalities in this case—can change simply by increased exposure to these

groups. However, contrary to most studies on inter-group contact (Allport, 1954; Pettigrew, 1998; Pettigrew and Tropp, 2006), I find that higher exposure leads to more discrimination. This seems to be driven by an increase in statistical discrimination, a channel which is not typically taken into account.

References

Akerlof, G. A. and Kranton, R. E. (2000). Economics and Identity. *The Quaterly Journal of Economics*, 115(3):715–753.

Alesina, A. and La Ferrara, E. (2002). Who trusts others? *Journal of Public Economics*, 85(2):207–234.

Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison Wesley.

Almå s, I., Cappelen, A. W., Sø rensen, E. O., and Tungodden, B. (2010). Fairness and the development of inequality acceptance. *Science*, 328(5982):1176–8.

Arrow, K. J. (1973). The Theory of Discrimination. In Ashenfelter, O. and Rees, A., editors, *Discrimination in Labor Markets*, pages 3–33. Princeton University Press.

Arrow, K. J. (1998). What Has Economics to Say About Racial Discrimination ? *The Journal of Economic Perspectives*, 12(2):91–100.

Bardsley, N. (2005). Experimental economics and the artificiality of alteration. *Journal of Economic Methodology*, 12(2):239–251.

Bauer, M., Cassar, A., Chytilová, J., and Henrich, J. (2014a). War's enduring effects on the development of egalitarian motivations and in-group biases. *Psychological Science*, 25(1):47–57.

Bauer, M., Fiala, N., and Levely, I. (2014b). Trusting Former Rebels: An Experimental Approach to Understanding Reintegration after Civil War. *CERGE-EI Working Paper Series*, No. 512.

Beaman, L., Chattopadhyay, R., Duflo, E., Pande, R., and Topalova, P. (2009). Powerful women: does exposure reduce bias? *The Quarterly Journal of Economics*, 124(4):1497–1540.

Becker, G. S. (1971). *The Economics of Discrimination.* University of Chicago Press.

Berg, J., Dickhaut, J., and McCabe, K. (1995). Trust, Reciprocity, and Social History. *Games and Economic Behavior*, 10(1):122–142.

Bernhard, H., Fehr, E., and Fischbacher, U. (2006). Group Affiliation and Altruistic Norm Enforcement. *The American Economic Review*, 96(2):217–221.

Boisjoly, J., Duncan, G. J., Kremer, M., Levy, D. M., and Eccles, J. (2006). Empathy or Antipathy? The Impact of Diversity. *The American Economic Review*, 96(5):1890–1905.

Bornhorst, F., Ichino, A., Kirchkamp, O., Schlag, K. H., and Winter, E. (2010). Similarities and differences when building trust: the role of cultures. *Experimental Economics*, 13(3):260–283.

Buchan, N. R., Johnson, E. J., and Croson, R. T. A. (2006). Let's get personal: An international examination of the influence of communication, culture and social distance on other regarding preferences. *Journal of Economic Behavior & Organization*, 60(3):373–398.

Charness, G., Rigotti, L., and Rustichini, A. (2007). Individual Behavior and Group Membership. *The American Economic Review*, 97(4):1340–1352.

Chen, Y. and Li, S. X. (2009). Group identity and social preferences. *The American Economic Review*, 99(1):431–457.

Clingingsmith, D., Khwaja, A., and Kremer, M. (2009). Estimating the Impact of the Hajj: Religion and Tolerance in Islam's Global Gathering. *The Quarterly Journal of Economics*, 124(3):1133–1170.

Di Pietro, G. (2013). Do Study Abroad Programs Enhance the Do Study Abroad Programs Enhance the Employability of Graduates? *IZA Disscussion Paper*, 7675.

Dobbie, W. and Fryer, R. (2011). The Impact of Voluntary Youth Service on Future Outcomes : Evidence from Teach For America. *NBER Working Paper*, (17402).

European Commission (2014). *The Erasmus Impact Study: Effecs of mobility on the skills and employability of students and the internationalisation of higher education institutions.* European Union.

Fehr, E., Rutzler, D., and Sutter, M. (2011). The development of egalitarianism, altruism, spite and parochialism in childhood and adolescence. *IZA Discussion Paper*, (5530).

Fershtman, C. and Gneezy, U. (2001). Discrimination in a segmented society: an experimental approach. *The Quarterly Journal of Economics*, 116(1):351–377.

Fischbacher, U. (2007). Z-TREE: Zurich toolbox for ready-made economic experiments. *Experimental Economics*, 10(2):171–178.

Gachter, S. and Herrmann, B. (2011). The limits of self-governance when cooperators get punished: Experimental evidence from urban and rural Russia. *European Economic Review*, 55(2):193–210.

Glaeser, E. L., Laibson, D. I., Scheinkman, J. A., and Soutter, C. L. (2000). Measuring Trust. *The Quarterly Journal of Economics*, 115(3):811–846.

Goette, L., Huffman, D., and Meier, S. (2006). The Impact of Group Membership on Cooperation and Norm Enforcement: Evidence Using Random Assignment to Real Social Groups. *The American Economic Review*, 96(2):212–216.

Gorodnichenko, Y. and Roland, G. (2011). Which dimensions of culture matter for long-run growth? *The American Economic Review*, 101(3):492–498.

Guiso, L., Sapienya, P., and Zingales, L. (2009). Cultural Biases in Economic Exchange. *The Quaterly Journal of Economics*, 124(3):1095–1131.

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., and Mcelreath, R. (2001). In Search of Homo Economicus : Behavioral Experiments in 15 Small-Scale Societies. *The American Economic Review*, 91(2):73–78.

Henrich, J., Mcelreath, R., Barr, A., Ensminger, J., Barrett, C., Bolyanatz, A., Cardenas, J. C., Gurven, M., Gwako, E., Henrich, N., Lesorogol, C., Marlowe, F., Tracer, D., and Ziker, J. (2006). Costly Punishment Across Human Societies. *Science*, 312(June):1767–1770.

Herrmann, B., Thöni, C., and Gächter, S. (2008). Antisocial punishment across societies. *Science*, 319(5868):1362–7.

Holm, H. J. and Danielson, A. (2005). Tropic Trust versus Nordic Trust: Experimental Evidence from Tanzania and Sweden. *The Economic Journal*, 115(2005):505–532.

Knack, S. and Keefer, P. (1997). Does social capital have an economic payoff? A cross-country investigation. *The Quarterly Journal of Economics*, 112(4):1251–1288.

Laar, C. V., Levin, S., Sinclair, S., and Sidanius, J. (2005). The effect of university roommate contact on ethnic attitudes and behavior. *Journal of Experimental Social Psychology*, 41(4):329–345.

Parey, M. and Waldinger, F. (2010). Studying Abroad and the Effect on International Labour Market Mobility: Evidence from the Introduction of Erasmus. *The Economic Journal*, 121(March):194–222.

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual review of psychology*, 49:65–85.

Pettigrew, T. F. and Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of personality and social psychology*, 90(5):751–83.

Tabellini, G. (2010). Culture and Institutions: Economic Development in the Regions of Europe. *Journal of the European Economic Association*, 8(June):677–716.

Tajfel, H., Billig, M. G., Bundy, R. P., and Flament, C. (1971). Social categorization and intergroup behaviour. *European journal of social psychology*, 1(2):149–178.

Willinger, M., Keser, C., Lohmann, C., and Usunier, J.-C. (2003). A comparison of trust and reciprocity between France and Germany: Experimental investigation based on the investment game. *Journal of Economic Psychology*, 24(4):447–466.

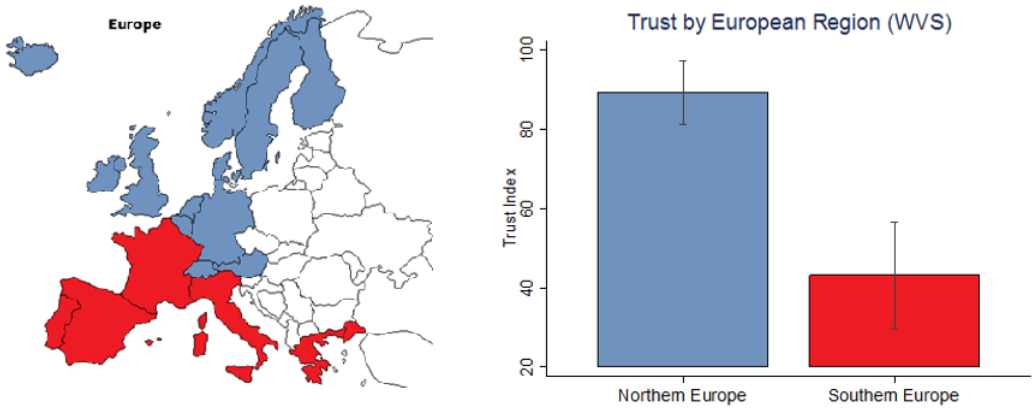
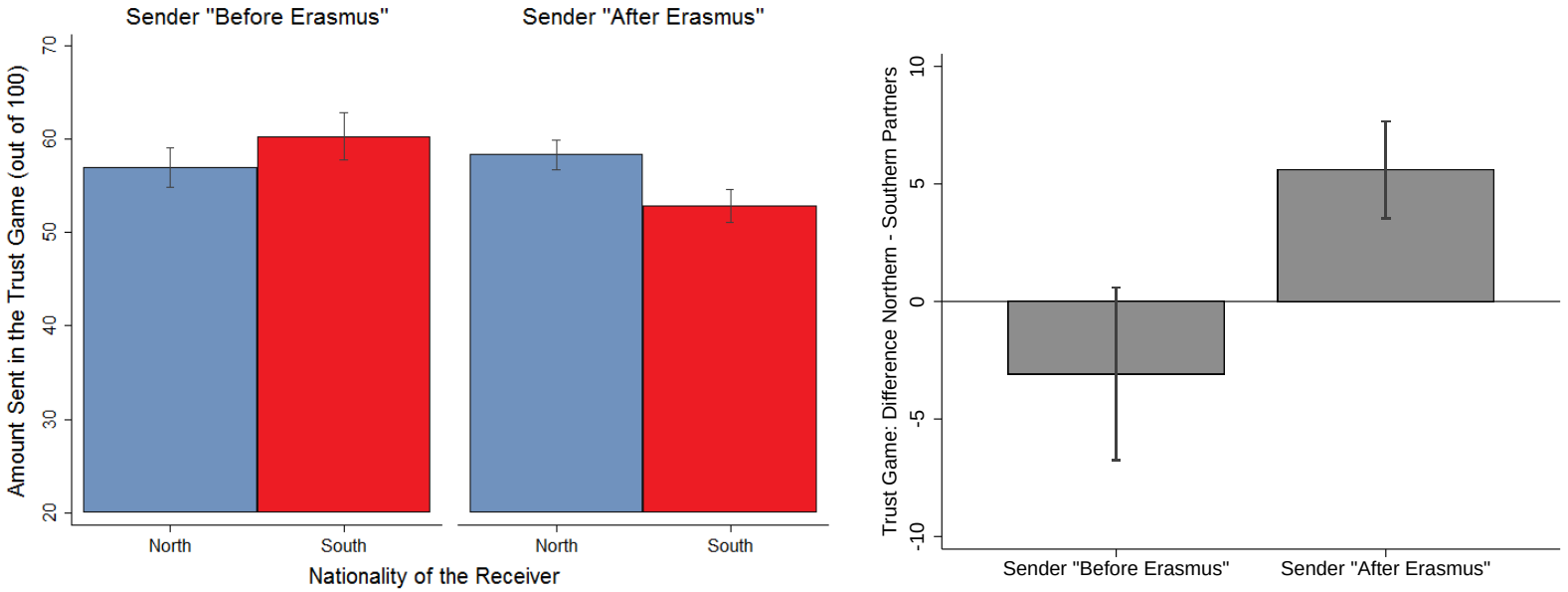


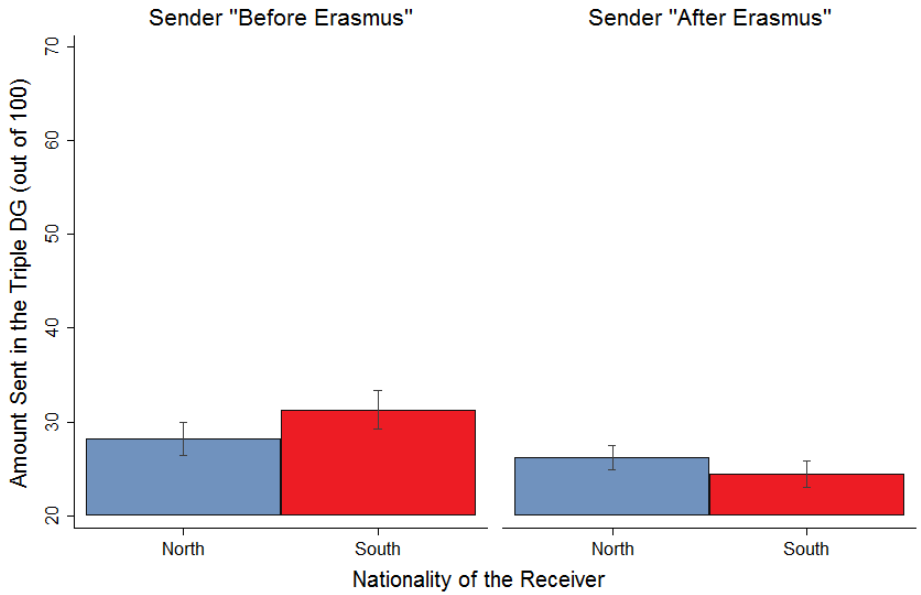
Figure 1: Differences in Trust across Europe (WVS Data, Source: ASEP/JDS). Bars indicate mean ± SEM.



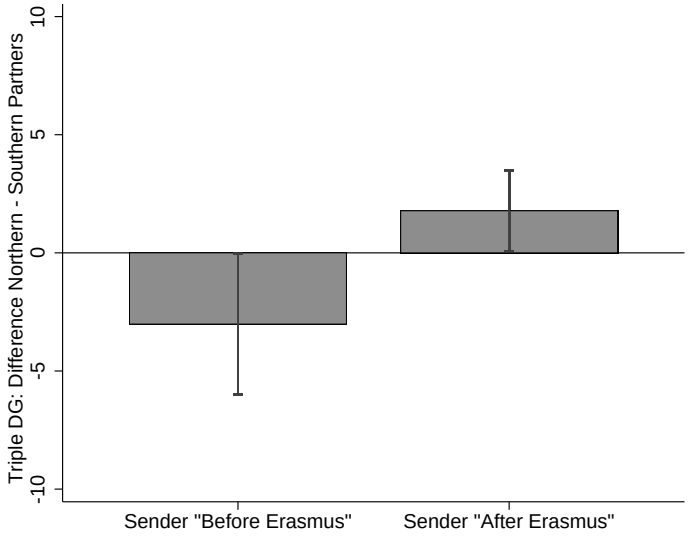
(a) Trust Game - amount sent

(b) Trust game - difference Northern vs. Southern partners

Figure 2: Trust Game: Amount sent towards partners from Northern and Southern Europe, disentangled by whether the subject is about to leave on a study abroad stay (Sender "Before Erasmus") or has just returned from a study abroad stay (Sender "After Erasmus"). Bars indicate mean ± SEM.

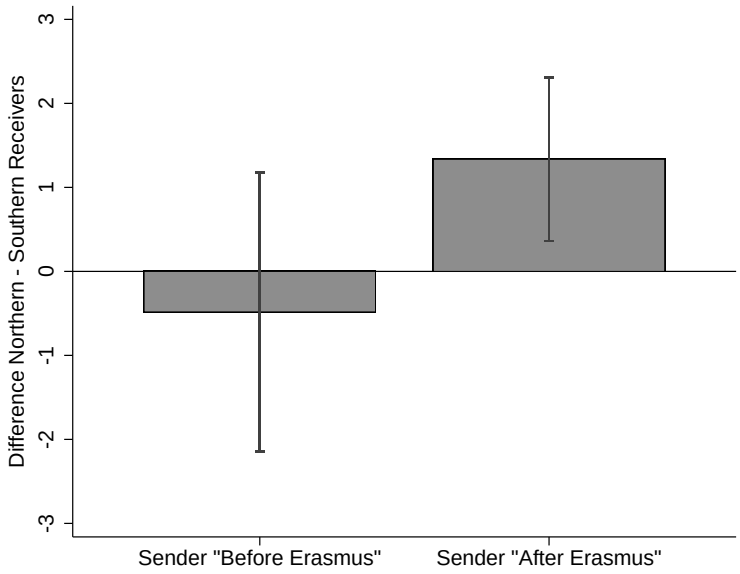


(a) Triple Dictator Game - amount sent

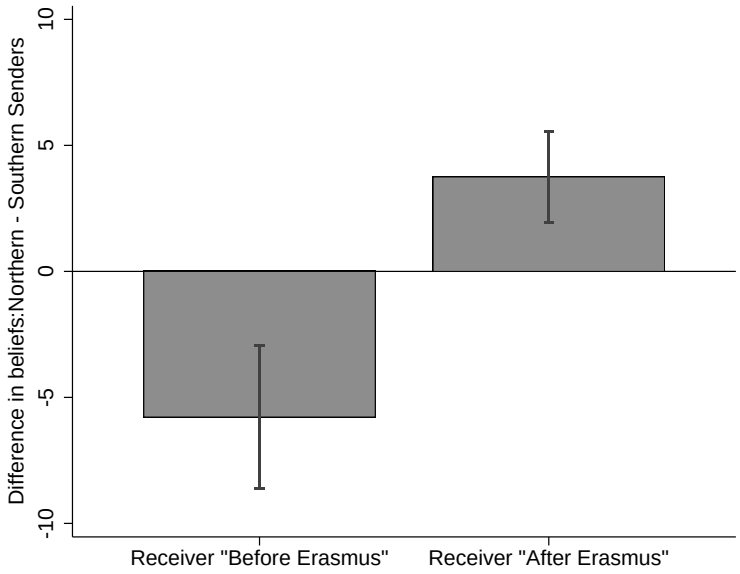


(b) Triple Dictator Game - difference Northern vs. Southern partners

Figure 3: Triple Dictator Game: Amount sent towards partners from Northern and Southern Europe, disentangled by whether the subject is about to leave on a study abroad stay (Sender "Before Erasmus") or has just returned from a study abroad stay (Sender "After Erasmus"). Bars indicate mean ± SEM.



(a) Beliefs about trustworthiness



(b) Beliefs about trust

Figure 4: Effect of Erasmus stay on beliefs about trustworthiness and trust of Northern versus Southern Partners. Panel (a) captures beliefs about the amount returned by Northern vs. Southern receivers in the Trust Game (as % of what the partner received from the sender). Panel (b) summarizes beliefs about the number of points received from Northern vs. Southern senders in the Trust Game. Bars indicate mean ± SEM.

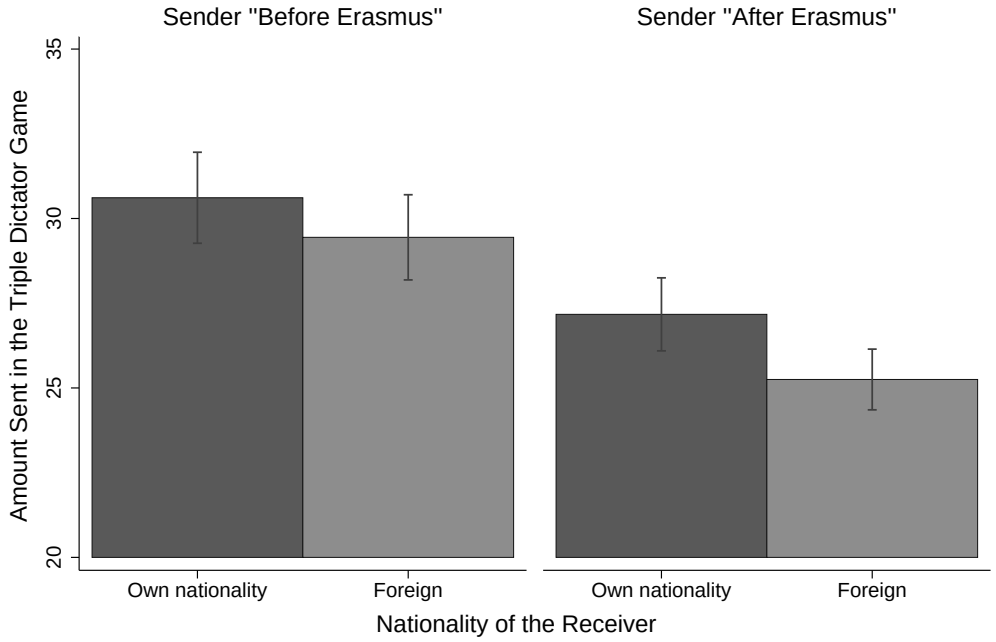


Figure 5: Amount Sent in the Triple Dictator Game towards partners of the same nationality vs. to foreign partners, by the Erasmus status of the Sender. Bars indicate mean ± SEM.

			Before Erasmus		After Erasmus		T-test	
			Mean	SD	Mean	SD	Difference	p-value
			(1)	(2)	(3)	(4)	(5)	(6)
Gender	Female	%	61,3	49,0	56,5	49,8	4,9	0,501
Age			22,6	1,5	23,9	1,6	-1,3***	0,000
Field of study	Business, Economics or Law	%	17,3	38,1	21,8	41,4	-4,4	0,451
	Humanities, Social Sciences or Education	%	32,0	47,0	30,7	46,3	1,4	0,843
	Math, Physics, Natural Sciences or Technical	%	16,0	36,9	21,0	40,9	-5,0	0,390
	Medicine	%	14,7	35,6	9,7	29,7	5	0,288
	Arts, Philosophy or Languages	%	20,0	40,3	16,9	37,7	3,1	0,589
Host Country	North	%	65,3	47,9	66,1	47,5	-0,8	0,909
	South	%	29,3	45,5	25,8	43,9	3,5	0,590
	New EU	%	5,3	22,6	8,1	27,3	-2,7	0,468
Participants	Total	N	75		124		199	

Table 1: Sample characteristics

	"Foreign"		
"Local"	**"North"**	**"South"**	**"East"**
Czech Rep.	Austria	France	Bulgaria
Slovakia	Belgium	Greece	Georgia
	UK	Italy	Hungaria
	Netherlands	Portugal	Lithuania
	Germany	Spain	Macedonia
	Ireland		Russia
	USA		Slovenia
			Turkey
			Ukraine
			Vietnam
			Other

Table 2: Classification of countries used in the analysis. Only countries of origin for at least one participant in the experiment are listed.

	Amount Sent in the Trust Game					
	OLS			Ordered probit		
	(1)	(2)	(3)	(4)	(5)	(6)
After Erasmus	1.34	-1.65	-1.79	0.04	-0.07	-0.07
	(5.39)	(5.57)	(5.55)	(0.15)	(0.16)	(0.16)
Receiver South	3.08	3.63	3.19	0.08	0.10	0.09
	(3.66)	(3.46)	(3.38)	(0.10)	(0.10)	(0.10)
After Erasmus*Receiver South	-8.68**	-9.43**	-8.85**	-0.24**	-0.27**	-0.25**
	(4.21)	(4.13)	(4.09)	(0.12)	(0.12)	(0.12)
Constant	57.01***	-19.91	-21.37			
	(4.36)	(35.35)	(35.28)			
Sender's gender, age, major		yes	yes		yes	yes
Receiever's gender, age, major		yes	yes		yes	yes
Order of games, roles			yes			yes
Observations	1,526	1,526	1,526	1,526	1,526	1,526

Standard errors are clustered on the sender level.* p<0.10, ** p<0.05, *** p<0.01
Estimation sample are Czech students Before Erasmus stay and After Erasmus stay (dummy variable After Erasmus). Reported coefficients in columns 1-3 are estimated using OLS, reported coefficients in columns 1-3 are estimated using ordered probit.

Table 3: Trust Game - Effects of the Erasmus stay on trust towards partners from Northern and Southern Europe

	Amount sent in the Trust Game					
	OLS			Ordered probit		
	All	Stay North	Stay South	All	Stay North	Stay South
	(1)	(2)	(3)	(4)	(5)	(6)
After Erasmus	1.34	-4.41	10.66	0.04	-0.10	0.25
	(5.39)	(6.70)	(9.55)	(0.15)	(0.19)	(0.28)
Receiver South	3.08	-0.31	12.22*	0.08	-0.00	0.34
	(3.66)	(4.48)	(6.90)	(0.10)	(0.13)	(0.21)
After Erasmus*Receiver South	-8.68**	-5.41	-15.99*	-0.24**	-0.16	-0.43*
	(4.21)	(5.15)	(8.18)	(0.12)	(0.14)	(0.25)
Constant	(4.36)	(5.40)	(7.39)			
	57.01***	61.94***	45.71***			
Observations	1,526	1,019	406	1,526	1,019	406

Standard errors are clustered on the sender level.* p<0.10, ** p<0.05, *** p<0.01
Estimation sample are Czech students Before Erasmus stay and After Erasmus stay (dummy variable After Erasmus). Reported coefficients in columns 1-3 are estimated using OLS, reported coefficients in columns 1-3 are estimated using ordered probit.

Table 4: Trust Game - Effects of the Erasmus stay on trust towards partners from Northern and Southern Europe, by the region of the Erasmus stay

	Amount Sent in the Triple Dictator Game					
	(1)	(2)	(3)	(4)	(5)	(6)
After Erasmus	-3.44	-8.75**	-8.97**	-3.44	-8.77**	-8.99**
	(4.31)	(4.17)	(4.08)	(4.31)	(4.17)	(4.08)
Receiver Foreign	-1.17	-1.46	-1.69			
	(1.37)	(1.29)	(1.28)			
After Erasmus*Receiver Foreign	-0.75	-0.23	-0.14			
	(1.89)	(1.76)	(1.76)			
Receiver North				-2.37	-2.79	-3.51**
				(1.75)	(1.70)	(1.55)
Receiver South				0.65	-0.02	-0.07
				(2.37)	(2.16)	(2.11)
Receiver East				-1.59	-0.29	0.85
				(3.77)	(3.45)	(3.27)
After Erasmus*Receiver North				1.40	2.51	2.97
				(2.20)	(2.14)	(2.07)
After Erasmus*Receiver South				-3.40	-3.00	-3.10
				(2.90)	(2.67)	(2.66)
After Erasmus*Receiver East				-1.25	-2.41	-3.31
				(4.53)	(3.97)	(3.98)
Constant	30.61***	-84.00***	-83.04***	30.61***	-84.41***	-83.35***
	(3.37)	(31.45)	(31.33)	(3.37)	(31.61)	(31.45)
Sender's gender, age, major		yes	yes		yes	yes
Receiever's gender, age, major		yes	yes		yes	yes
Order of games, roles			yes			yes
Observations	3,184	3,184	3,184	3,184	3,184	3,184
R-squared	0.00	0.11	0.12	0.01	0.11	0.12

Standard errors are clustered on the sender level.* p<0.10, ** p<0.05, *** p<0.01
Estimation sample are Czech students before Erasmus stay and After Erasmus stay (dummy variable After Erasmus). Reported coefficients are estimated using OLS.

Table 5: Triple Dictator Game - Effects of the Erasmus stay

	Amount Sent in the Triple Dictator Game					
	(1)	(2)	(3)	(4)	(5)	(6)
	All	All	All	Before Erasmus	After Erasmus	Never Erasmus
Receiver Foreign	-1.17	-1.40	-1.56	-1.50	-1.74	-2.95*
	(1.37)	(1.31)	(1.29)	(1.27)	(1.28)	(1.75)
After Erasmus	-3.44	-5.94	-5.79			
	(4.31)	(4.29)	(4.24)			
Never Erasmus	-3.86	-2.61	-2.85			
	(5.17)	(5.26)	(5.23)			
After Erasmus * Receiver Foreign	-0.75	-0.56	-0.46			
	(1.89)	(1.80)	(1.80)			
Never Erasmus * Receiver Foreign	-1.14	-1.31	-1.43			
	(2.20)	(2.18)	(2.20)			
Constant	30.61***	-33.41	-34.62	-84.54*	-104.23**	14.44
	(3.37)	(25.99)	(26.14)	(49.53)	(40.80)	(26.47)
Sender's gender, age, major		yes	yes	yes	yes	yes
Receiever's gender, age, major		yes	yes	yes	yes	yes
Order of games, roles			yes	yes	yes	yes
Observations	4,032	4,032	4,032	1,200	1,984	848
R-squared	0.00	0.08	0.09	0.09	0.16	0.17

Standard errors are clustered on the sender level.* p<0.10, ** p<0.05, *** p<0.01
Estimation sample are Czech students before Erasmus stay and After Erasmus stay (dummy variable After Erasmus) and students with no Erasmus experience (dummy variable Never Erasmus)). Reported coefficients are estimated using OLS.

Table 6: Triple Dictator Game - Effects of the Erasmus stay vs. selection effect

Appendix - Additional Tables and Figures

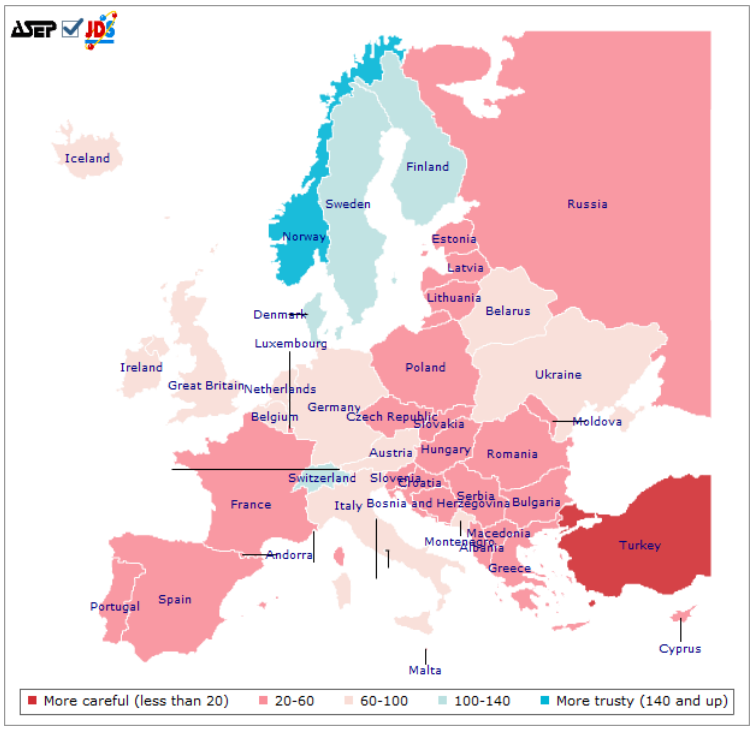


Figure 6: Trust towards strangers across European countries. Source: ASEP/JDS

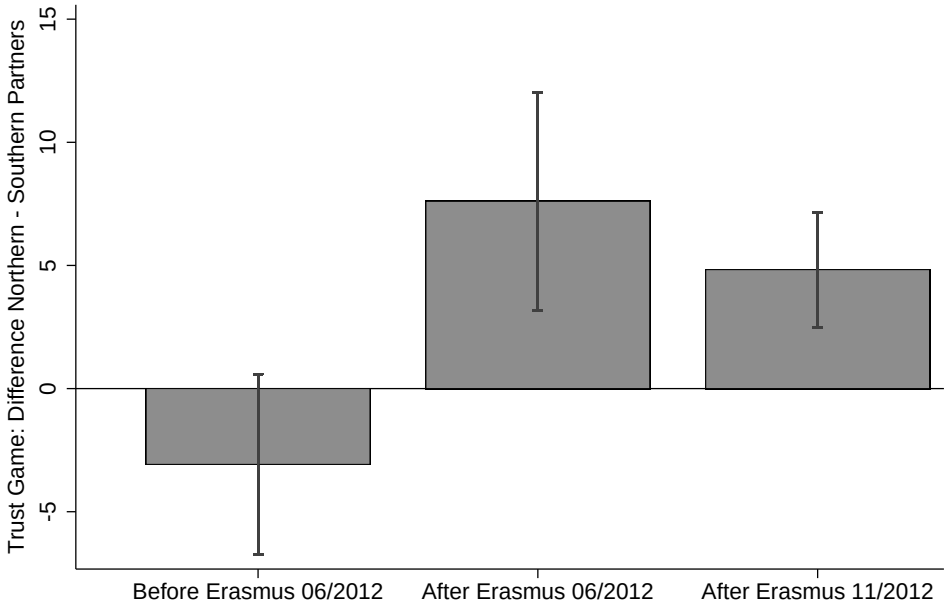


Figure 7: Robustness check - Trust towards partners from Northern vs. Southern Europe by the Erasmus status of the Sender and by the time of the experiment. Bars indicate mean ± SEM.

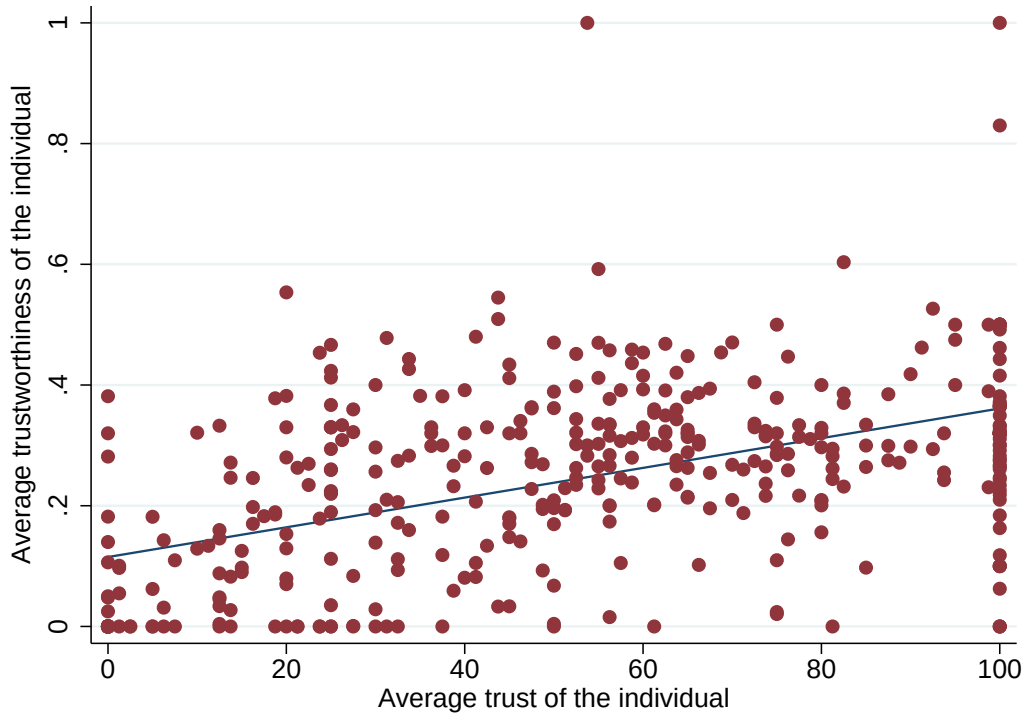


Figure 8: Correlation between Individual Trust and Trustworthiness for all subjects in the experiment. Average individual trust is calculated as the average amount sent in the Trust Game, averaging over the 16 profiles of potential partners. Average individual trustworthiness is calculated as average return ratio (*Return ratio= amount returned to sender/(3*amount sent by sender*), averaging over all receiver's decisions. Each receiver made 80 trustworthiness decisions—there are 16 profiles of potential senders and 5 trustworthiness decisions per sender, as receivers' decisions were elicited using a strategy method.

			Database of outbound Erasmus students		Experiment participants		Difference databases	Recruitment into the experiment	
			2012/13	2011/12	2012/13	2011/12	diff (2)-(1)	diff(3)-(1)	diff (4)-(2)
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gender	Female	%	69,7	69,9	61,3	56,8	0,2	8,3	13,1***
Study program	BA	%	38,1	28,1	49,3	33,9	-10,0***	-11,2*	-5,8
	MA	%	59,0	69,0	49,3	65,3	10,0***	9,7	3,7
Field of study	Business/Economics/Law	%	14,8	17,2	17,3	22,9	2,4	-2,5	-5,7
	Humanities/Social sc./Education	%	31,6	30,4	32,0	32,2	-1,2	-0,4	-1,8
	Math/Physics/Natural sc./Technical	%	15,6	15,0	16,0	18,6	-0,6	-0,4	-3,6
	Medicine	%	16,0	18,8	14,7	10,2	2,8	1,3	8,6**
	Arts/Philosophy/Languages	%	21,9	18,5	20,0	16,1	-3,4	1,9	2,4
Host Country	North	%	64,4	60,9	65,3	66,1	-3,5	-0,9	-5,2
	South	%	30,2	32,7	29,3	26,27	2,5	0,9	6,4
	New EU	%	5,4	6,4	5,3	7,63	1,0	0,1	-1,2
Participants	Total	N	923	1009	75	118	1932	998	1127

Six student from the "After Erasmus" sample were not students of Charles University or they participated in the Erasmus program prior to the academic year 2011/2012; that is why they are not included in this comparison.
* $p<0.10$, ** $p<0.05$, *** $p<0.01$ from a t-test

Table 7: Recruitment into the experiment - all Charles University outgoing Erasmus students vs. experiment participants

	Amount Sent in the Trust Game					
	OLS			Ordered probit		
	(1)	(2)	(3)	(4)	(5)	(6)
After Erasmus	0.83	-2.93	-2.98	0.02	-0.11	-0.11
	(5.00)	(5.28)	(5.23)	[0.14]	[0.15]	[0.15]
Receiver North	-1.05	-1.27	-0.07	-0.03	-0.04	-0.01
	(2.35)	(2.41)	(2.30)	[0.07]	[0.07]	[0.07]
Receiver South	2.03	2.45	2.17	0.05	0.06	0.05
	(2.91)	(2.80)	(2.65)	[0.08]	[0.08]	[0.08]
Receiver East	-3.91	-3.39	-5.36	-0.12	-0.11	-0.16
	(4.56)	(4.63)	(4.43)	[0.13]	[0.13]	[0.12]
After Erasmus*Receiver North	0.52	1.59	0.83	0.01	0.05	0.02
	(2.97)	(3.04)	(3.01)	[0.08]	[0.09]	[0.09]
After Erasmus*Receiver South	-8.16**	-7.92**	-7.53**	-0.23**	-0.22**	-0.21**
	(3.49)	(3.49)	(3.39)	[0.10]	[0.10]	[0.10]
After Erasmus*Receiver East	-4.62	-5.26	-4.04	-0.10	-0.12	-0.08
	(5.48)	(5.51)	(5.43)	[0.15]	[0.15]	[0.15]
Constant	58.06***	-16.54	-15.32			
	(3.98)	(32.38)	(32.23)			
Sender's gender, age, major		yes	yes		yes	yes
Receiever's gender, age, major		yes	yes		yes	yes
Order of games, roles			yes			yes
Observations	3,184	3,184	3,184	3,184	3,184	3,184

Standard errors are clustered on the sender level.* p<0.10, ** p<0.05, *** p<0.01
Estimation sample are Czech students Before Erasmus stay and After Erasmus stay (dummy variable After Erasmus). Decisions of students "Before Erasmus" towards partners of the same nationality (Czech partners) are taken as a baseline. Reported coefficients in columns 1-3 are estimated using OLS, reported coefficients in columns 1-3 are estimated using ordered probit.

Table 8: Trust Game - Effects of the Erasmus stay on trust towards partners of different nationalities

	Beliefs about amount sent in the TG		
	(1)	(2)	(3)
Receiver After Erasmus	1.63	-1.07	-1.42
	(4.74)	(4.84)	(4.87)
Sender South	5.78**	6.11**	5.54**
	(2.85)	(2.72)	(2.64)
Receiver After Erasmus * Sender South	-9.53***	-10.02***	-9.50***
	(3.38)	(3.36)	(3.33)
Constant	54.22***	-7.14	-6.38
	(3.84)	(30.54)	(31.04)
Sender's age, gender, field of study		yes	yes
Receiver's age, gender, field of study		yes	yes
Order Games, Order Roles			yes
Observations	1,526	1,526	1,526
R-squared	0.01	0.02	0.02

Standard errors are clustered on the sender level.* p<0.10, ** p<0.05, *** p<0.01
Estimation sample are Czech students Before Erasmus stay and After Erasmus stay (dummy variable After Erasmus). Reported coefficients are estimated using OLS.

Table 9: Beliefs about trust - Effects of the Erasmus stay on beliefs about the trust behavior of Senders from Northern and Southern Europe