Gender Discrimination and Social Identity: Experimental Evidence from Urban Pakistan[1]

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Abstract (250 words)

Gender discrimination in Pakistan appears heterogeneous: while Pakistan has the most imbalanced sex ratio in the world, women have prominent political leadership. At the same time, the society is fragmented along social and religious lines. We investigate whether and how young educated Pakistani women are discriminated against by young educated men, evaluate the nature (taste-based versus statistical) of this discrimination, and analyze how this discrimination varies by the social status of both genders. We use an experimental approach to identify gender discrimination by randomly matching 2,836 male and female students from four Madrassas (religious seminaries), an Islamic University, and two Liberal Universities in several experiments of economic decision-making. These three groups (institutions) clearly represent different identities within the Pakistani society. Gender discrimination is not uniform in intensity and nature across the educated Pakistani society and varies as a function of the social identity of *both* individuals who interact. Liberal University students, who are wealthier, more exposed to Western ideas and less religious, do not discriminate against women. Madrassa students, who are poorer and more religious, tend to discriminate against women, particularly those who belong to the lower socioeconomic group and are closest to them in social distance. Moreover, this discrimination is entirely taste-based. Islamic University students—who fare in the middle in term of wealth and religiosity—have a less uniform behavior. Islamic University males favor Liberal University females who are of higher social status, but they do not favor Islamic University females who are from the same social status.

1. Introduction

Sen (1990) estimated the number of missing women to be more than 100 Million worldwide. Those women are missing due to excess female mortality caused by unequal access to essential resources. Excess mortality tends to be more prominent in South Asia, where the sex ratios (the ratio of men to women) are unusually high (Klasen and Wink, 2003). Sen (2001) and Klasen (1994) highlighted Pakistan as a country where this imbalance was the starkest, with a sex ratio most recently estimated to be 108.5 (Pakistan Census Organization, 1998). Inequality in mortality by gender is just one of the many forms that gender discrimination can take. Other forms include basic facility inequality, professional inequality or ownership inequality (Sen, 2001). In this paper, we use economic decision-making experiments from Pakistan to investigate whether and how educated young Pakistani women are discriminated against by educated young men, evaluate the nature (taste-based versus statistical) of this discrimination and analyze how this discrimination varies by the social status of both genders.

Pakistani society can be characterized as fragmented and polarized along social, economic, religious, and ethnic lines (Talbot, 2009). Gender discrimination in Pakistan appears similarly heterogeneous and rather paradoxical. On the one hand, women have prominent political leadership: Pakistan's former Prime Minister Benazir Bhutto was the first woman to lead an Islamic state, a third of Pakistan's local legislative seats and 10% of all government offices are reserved for women, and in 2005, 43,000 women councilors were elected to local governments (Zissis, 2007). On the other hand, there is excess female mortality with an estimated 13% of the women missing, an increasing gender gap in literacy rate (29 percent literacy for women versus 58 percent for men in 2001), an alarming rate of violence against women, and a low female labor force participation rate of 15% compared to other countries with similar GDP per capita (Klasen and Wink, 2003; Coleman, 2006; Human Right Commission of Pakistan, 2008).

Given the social divide of the Pakistani society and the paradoxical gender discrimination, we investigate the interplay between gender discrimination and social identity in Pakistan. We recruited 2,836 students from three types of educational institutions in urban Pakistan that represent three very different identities in terms of socioeconomic background, religiosity and exposure to Western ideas. The first type of institution consists of male-only Madrassas (religious seminaries). The Madrassa curriculum uses ancient religious texts and does not impart any secular teaching. The second type of institutions—Islamic Universities—teach a Liberal Arts curriculum combined with Islamic teachings in gender segregated campuses. The third type are Liberal Universities that are similar to American universities- classes are taught in English, campuses are mixed and students are widely exposed to Western ideas. While Madrassas tend to be free and hence cater primarily to the poor, Islamic Universities are usually public and therefore accessible to low and middle income groups. Liberal Universities, on the other hand, charge expensive tuition and thus serve the wealthy segment of the population. These three groups also differ in their levels of religiosity, which is another important aspect of social

status in Pakistan. Self-reported religiosity (on a scale from 0 to 10) is 9.2 among the Madrassa students, 6.3 among male Islamic University students and 5.3 among the male Liberal University students. The focus on interactions of inter-elite groups, defined as college-level students, is of particular interest because individuals belonging to these groups will eventually become policy makers or be influential in their community.

We randomly match students with each other to participate in a trust game and test for gender discrimination in Pakistan. In the trust game, a player (sender) can decide to send ("invest") money to a partner (receiver). If the sender invests the money, the experimenter triples that amount and gives it to the receiver, who is asked to choose whether he transfers any money back to the receiver. Systematic differences in the decision to invest the money by the gender of the partner would imply gender discrimination. This type of game captures important behavioral aspects of social and economic interactions, including those taking place in the labor market, and is therefore well suited to investigate gender discrimination. In particular, trust has been shown to enhance efficiency and to promote economic growth and financial development (Knack and Keefer, 1997; La Porta et al., 1997; Guiso, Sapienza, and Zingales, 2004) especially, as in the case in Pakistan, when institutions are failing (Ostrom, 1990; Fukuyama, 1995).

In addition to the trust game, we ask respondents to participate in other experiments of decision-making that measure expected trustworthiness (expectations in the trust game) and unconditional other-regarding behavior such as altruism or inequity aversion (dictator game). This multiple-game design allows us to investigate the *nature* of discrimination, i.e. whether it is motivated by preferences (taste-base discrimination) or statistical inference on payoff-relevant information (statistical discrimination). In the dictator game, the sender is asked to split an amount of money between himself and another player, who takes no further action. Therefore, systematic differences in the amount sent to males and females measures taste-based discrimination. In the trust game, expectations about how much participants expect back on average from their partner allow us to measure whether the discrimination is statistical.

We observe differences in decisions within a gender-institution pair as the institution type and gender of the participant's partner is varied. We find that the intensity and the nature of gender discrimination depend on the social identity of both individuals in the match. Liberal University students who, on average, are wealthiest, least religious and most exposed to Western ideas, do not discriminate against women. Madrassa students, who come from more humble backgrounds, are more religious and relatively unexposed to Western ideas, tend to discriminate against women. Moreover, this discrimination is entirely taste-based. However, because they give and trust more than any other male groups, they actually treat women as well or better than other groups of males in the society. They however simply treat men better than they treat women. Finally, Islamic University students, who fare in the middle in term of wealth and religiosity, have a less uniform behavior. Their behavior towards males and females depends on the institutions (or social status) of the person with whom they interact. Islamic University males favor Liberal University females while they do not favor Islamic University females, while Islamic University females discriminate against only Liberal University females but not Islamic

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University females. Importantly, the differential behavior by gender of Islamic University students is attributable to both taste as well as statistical discrimination.

By focusing on gender discrimination in Pakistan, our study relates to a large body of empirical evidence on gender unequal treatment in South Asia. Though the literature is not fully consensual, many papers find evidence that boys are treated more favorably than girls within the household: they receive more nutrition, more healthcare and more childcare time (Chen, Huq and D'Souza, 1981; Das Gupta, 1987, Basu, 1989, Hazarika 2000, Barcellos at al., 2011), and are more likely to be vaccinated (Borooah 2004, Barcellos at al., 2011). Son preferences is often cited for this unequal treatment, due either to pure taste for having a boy or because parents respond to gender difference in expected returns as adults by selectively allocating available resources (Rosenzweig and Schultz, 1982, Quian, 2008).[3] Beyond unequal treatments at young age, women are also found to lack behind in terms of literacy, educational attainment, labor force participation and earnings (e.g., Holmes, 2003, Duflo, 2005, Aslam, 2009).

As part of this latter research, there have also been some investigations into the relationship between gender discrimination and socio-economic status or social class of the households. The resulting empirical evidence is rather mixed. In some cases, higher economic status households are found to discriminate less against girls: Rose (1999) finds that landholdings increase the survival of girls relative to boys, and Behrman (1988) and Alderman and Gertler (1989) find that households with more income treat boy and girls more equally in terms of allocation of nutrients and medical care respectively. However, Miller (1997) and Basu (1989) find that higher socio-economic status households (as measured by caste or income) discriminate girls more, especially in the northwestern plains of Asia where the society is patrilineal. Our paper contributes to the understanding of the relationship between social status and discrimination in South Asia beyond the one found within the household, and importantly highlight that the nature and intensity of discrimination varies depending on the social identity of *both* the men and women involved. Even within elite groups, higher status women in Pakistan are less discriminated against, and lower socio-economic and more religious men tend to discriminate more.

Our paper also relates to a large literature on gender discrimination in the labor market and other market interactions, mostly in developed countries (see Altonji and Blank, 1999, Riach and Rich, 2002 and List and Rasul, 2011 for a review). Audit studies or sex-blind hiring (e.g., Ayres and Siegelman, 1995, Neumark, 1996, Goldin and Rouse, 2000) and estimate of differential marginal productivity (Hellerstein et al., 1996) have been used to identify gender discrimination. Due to lack of data, however, it is in general difficult to identify the nature of this discrimination. Recent studies using either field or lab experiments have been able to directly address the question of the nature of gender discrimination by using a multi-game design which allows to measure both preferences and beliefs or to manipulate the market under study (e.g.,

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[3] Other explanations include biological factors (Oster, 2005, Lin and Luoh, 2008).

Fershtman and Gneezy, 2001, List, 2004, Slonim and Guillen, 2010, Castillo et al., 2011). Freshtman and Gneezy (2001), whose study is the closest in approach to that used in this paper, match students with typical ethnic names in Israel with each other and find strong evidence of that Ashkenazic women (who tend to have higher economic status) are less trusted than Ashkenazic men, while Eastern women (who tend to have lower economic status) are more trusted then Eastern men, suggesting, unlike in the Pakistani context, that discrimination against female is reduced, and even reversed, when they belong to lower socio-economic status groups.

The paper is organized as follows. We provide details on the educational institutions, the sample and the experimental design in Section 2. Section 3 describes the empirical results and Section 4 presents concluding remarks.

2. Data Collection

2.1 The educational institutions

We conducted experiments in four male Madrassas (religious seminaries), one Islamic University (IU), and two Liberal Universities located in Islamabad/Rawalpindi and Lahore between May and October 2010.[4] Madrassas are religious seminaries. They base their studies on texts dating to before the 14th century and teach classes in Urdu (Fair, 2006; Rahman, 2008). The majority of Madrassas do not impart any secular or vocational training and it has been argued, albeit with scant evidence, that they deliberately educate their students in narrow worldviews and rejection of Western ideas, and do not train them sufficiently for the real world (Ali, 2009). Claims made by policy makers and in the popular press suggest that they may be responsible for fostering militancy and Islamic extremism (see discussion in Delavande and Zafar, 2011). Since Madrassas generally tend to be free, they attract students from modest backgrounds (Rahman, 2004). Advanced study within the Madrassas produces an Alim (Islamic scholar and/or teacher). Most students who graduate from a Madrassa go on to work in the religious sector.

Islamic Universities provide a Liberal Arts curriculum combined with Islamic teachings and courses. For example, Economics is taught with a focus on Islamic principles of finance. These universities have segregated campuses for males and females, and classes are taught in Arabic or English. These institutions tend to be public and, therefore, are accessible to low and middle income groups. Moreover, a relatively large proportion of students at such universities have typically studied for some time at Madrassas before enrolling. Females account for about 40% of the student body at IU.

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[4] There are few female Madrassas, and the proportion of females pursuing a Bachelor-equivalent degree (the relevant population for our purposes) is even smaller. Since large sample sizes are needed for the randomizations in the experiment, we did not include them in our sample.

Liberal Universities (LU) are similar to American colleges. They provide a Liberal Arts curriculum. Classes are taught in English and campuses are mixed. Tuition at such institutions tends to be very expensive so they cater to wealthy students. Females account for about 25 to 30% of the student body the two institutions we surveyed.[5]

The institutions in our sample are amongst the five largest and well-regarded institutions in the relevant category in each city. Among all the institutions we contacted, one university and one Madrassa refused to participate. We sampled the senior-most students in the 4 Madrassas since they are similar in age to university students, and are pursuing degrees that are equivalent to Bachelor degrees. Though participation was voluntary, almost everyone in the Madrassas participated in the study. At the other institutions, a random sample of students (unconditional on gender) was selected to participate based on a listing of students provided by the registrar's office. Average response rate at the universities was about 70%. Except for lower response rates for females relative to males at IU, there were no differences in response rates by gender. Overall 2,836 students participated in the experiments, of which 489 were female.

2.2. Descriptive statistics of the sample

Table 1 presents the characteristics of the participants by group (educational affiliation) and gender. For comparison purpose, the table also shows the characteristics of a random sample of respondents from Islamabad/Rawalpindi and Lahore (*City* sample) obtained from a separate survey we conducted in 2010. The average age of students varies between 21 and 22.

Table 1 highlights the differences across the three types of institutions.[6] The sorting in terms of observables into these institutions is very drastic but as expected. As we move across the columns from LU towards Madrassas in Table 1, the average socioeconomic characteristics deteriorate. For example, the monthly parental income of male and female students in the liberal Western-style University is about 7 times that of students in the Madrassas, and father's years of education is almost twice as much. If we compare the students to the City sample (last two columns of the table), we see that Madrassa students seem to hail from less well-off backgrounds than the general populations in the cities, while all other institutions fare better in terms of most indicators of wealth. Females at LU and IU, seem to hail from more privileged backgrounds than their male counterparts: they have higher parental income and parental education and much higher asset ownership. This difference is more market at IU.

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[5] In Delavande and Zafar (2011), we separate the two Liberal Universities we interviewed. In the present context, we find very similar behavior toward females so decided to keep them as one group to simplify the analysis.

[6] Since we don't find any significant differences within the Madrassas either in terms of demographic characteristics or in their experimental behavior, we combine the four Madrassas into one group to keep the tables and analysis simple.

Students from the various groups also show different levels of self-reported religiosity and the number of prayers per day. Students were asked to rate how religious they considered themselves on a scale from 0 (not religious at all) to 10 (very religious). Religiosity increases as we move across columns of Table 1; the average religiosity is 5.6-5.7 for LU males and females compared to 9.2 in the Madrassas. The former also pray much less frequently every day (1.7 times vs. 4.9). When looking at the number of times a respondent prays per day, we note that females pray more often than their male counterparts within each institution.

Finally, students are exposed to different types of information and different peer groups. While only 23% of the Madrassa students report watching BBC and CNN, at least 59% of the students of the other groups report watching it. Within liberal universities, female students tend to watch those international news channels more than male students. Also, the proportion of male respondents who have ever attended a religious institution on a full-time or part-time basis increases from 35% for LU students to 45% for IU students. In addition, while fathers of only 11% (5%) of male (female) students attending LU spent more than 2 years studying in a Madrassa on either a part-time or full-time basis, the corresponding proportion for Madrassa students is 20%. This suggests that the various groups in our setting interact with and have exposure to each other at some level, but that the extent of exposure varies by institution.

Students attending these three types of institutions clearly represent very different social and religious identities within the Pakistani society. At one end of the spectrum we have young males from poorer backgrounds who attend religious schools. At the other end of the spectrum we have wealthy students exposed to Western-type of education and high exposure to international media.

2.3. Experimental design

Procedure: The experiments were conducted in sessions of 50-100 students in a classroom of the student's institution. The rooms were large enough to ensure respondent anonymity. The instructions were given to each participant, read out aloud by the experimenters and projected on a retro-projector. Respondents played the games on a paper questionnaire and were matched with an actual partner ex-post, so they did not learn the identity or action of their partner while playing the game. The questionnaire was administered in Urdu at all places except the Western-style liberal University where it was conducted in English, since students there are more used to reading and writing in English.[7] Moreover, the questionnaires were identical across all the institutions up to the section leading into the experiments.

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[7] The translation was supervised by Zafar who speaks English and Urdu fluently to ensure that nothing was lost in translation.

Games: Students were asked to play the following games:
- *Trust game:* Player A (the sender) is given a fixed amount of money (Rs. 300) and decides whether to keep it or give it to Player B (the receiver), i.e. invest it. If given to Player B, the experimenter triples that amount and gives it to Player B who is asked to choose whether to transfer any money back to player A (which can be any amount between zero and Rs. 900). The efficient outcome is for A to invest the money by transferring it to player B, while the subgame perfect equilibrium is to keep the money. Lack of trust towards the partner may lead to inefficiencies. This is a binary version of the "trust game" introduced by Berg, Dickhaut, and McCabe (1995)—it is binary in the sense that player A can choose to send either nothing or the entire amount. In our setting, all respondents played the role of Player A and the role of a Player B who received the money. When put in the role of Player B, we use the strategy method and ask the respondent to report the amount he/she would like to send back conditional on Player A deciding to invest.
- *Dictator game:* This is a one-stage game in which Player A (the sender) decides on the division of a fixed amount of money (Rs 400) between himself/herself and Player B (the receiver). Player B does not make any choice. Again, respondents play the role of both Player A as well as Player B.
- *Expectations:* Respondents were asked to guess (i) the average amount that students from their institution chose to give to their matched partner and (ii) the average amount that students from the partner's institution chose to give to their matched partner from the respondent's institution. Note that when students are asked to provide their expectations, they are asked about the average payoffs for an identical pair of partners in terms of gender and institution of the match. Also expectations were elicited after the respondent had made the decision in the games.

Treatment: The treatment in this experiment is the randomization of institution and gender of the pair of players. Each student was randomly matched with *one* of the five following partners: a male student from a Liberal University, a female student from a Liberal University, a male student from an Islamic university, a female student from an Islamic university, or a male Madrassa student. All other students were selected to be matched with a student from a Liberal University were informed that they were matched with a student from the Liberal Western-style University. The description of the match (with the exact name of the match's educational institution and the partner's gender) was already printed on the paper questionnaire received by each participant, so students were not aware that other participants in their session were matched with partners of different gender and educational institutions. Each student was informed that they would play all the games with the same partner.

Table 2 presents the sample sizes for each institution type and match. Our sample consists of 203 females at LU (which corresponds to 21% of the LU sample) and 286 females at IU (~39% of the sample). This proportion of females in our sample is in line with the relative

fraction of females in the student body at these institutions.[8] Since females are in a minority in each of the institutions, we run into the issue of small number of observations in cells that involve Liberal University females as the primary player. Moreover, since questionnaires were randomly assigned to respondents (independent of their gender) at the Liberal Universities, the number of observations varies quite a bit for Liberal University female students. This has to be kept in mind in the discussion of the results. Note that the number of observations varies substantially when Madrassa students are the primary player in the match (row 7). One reason for this is that students at Madrassas who were assigned a "Madrassa treatment" were either matched with a student at their own Madrassa or a different Madrassa (but one that belonged to the same school of thought). The two groups are combined here because the focus is on gender differences. This is why, in Table 2, a much larger number of Madrassa students is matched with Madrassa students than with LU and IU students. Another reason is that we didn't match students with all possible matches in the smaller Madrassas in our sample.

Payoffs: Respondents received financial compensation for their participation in the survey and the games. Each received a show-up fee of Rs. 200 given on the day of the session. Some tasks were then randomly chosen for determining the additional payoffs. One of the four roles (sender or receiver in the trust game, sender or receiver in the dictator game) was randomly selected for compensation, along with one of the four expectations questions (Rs. 50 if the respondent correctly identified the interval where the actual average lies). Before making their decisions, students were informed that they would receive compensation for one of the four roles, chosen at random. Once the sessions were completed, we randomly matched students with a particular partner from the institution/gender indicated in their questionnaire and determined the payoffs. Subjects could pick up their compensation starting about one week after the completion of the experiment. Respondents earned an average of Rs. 600 from the games. The overall average compensation of Rs. 800 corresponds to about USD 10. The 2009 per capita GNI at purchasing power parity in Pakistan was $2,710, compared to $46,730 in the US. This means the average compensation of USD 10 corresponds to 0.4% of the GNI per capita. The US equivalent would be approximately USD 170. Therefore, the stakes involved in the experiments were very large.

3. Experimental results

3.1. Gender discrimination

Our main goals are to (i) test for gender discrimination in the trust game, i.e., whether behavior differs by the gender of the matched partner, (ii) analyze the nature (statistical versus

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[8] An exception is at one of the LU for which 15% of our sample consists of females, compared to their population share of 25%. This is because females turned out to be underrepresented in the random sample of students that we were provided with.

taste-based) of this potential discrimination and (iii) investigate whether potentially discriminatory behavior varies according to the institutions of both the primary player and of the institution of his/her partner. Because participants may treat partners from different institutions differently, our test for gender discrimination will always be done by comparing how males and females from the *same* institution are treated. We begin by testing the following hypothesis in our data:

Hypothesis 1: There is no gender discrimination in the trust game within (i.e., conditional on) partners' institutions.

Based on our experimental design, the test for gender discrimination by institutions of both the primary partner and the matched partner is as follows. Let $Prop_{iG}^{jG\prime}$ denote the proportion of senders at institution i of gender G who send the Rs. 300 in the trust game when matched with students of gender G' at institution j. Then, the null hypothesis of no gender discrimination by gender G students at i when matched with students at institution j is equivalent to testing for $Prop_{iG}^{jG\prime} - Prop_{iG}^{jG\prime} = 0$.

Table 3 presents the overall proportion of sender who chose to send the Rs. 300 in the trust game conditional on the institution and gender of both the sender and the responder. In order to test for gender discrimination, as explained above, we investigate whether investment behavior in the trust game varies by gender of the match, keeping institution of the match and gender and institution of the primary respondent fixed. For respondents belonging to a row institution, testing this hypothesis means testing for differences in the investment behavior when matched with LU male versus LU female, and for testing for differences when matched with IU male versus IU female. We also test for differences when aggregating LU and IU males versus LU and IU females.

We first focus on the behavior of male students. Table 3 provides two important results. First, LU males do not discriminate in their behavior according to the gender of the matched partner, even after taking into consideration the institutions of the match. This is demonstrated by the fact that none of the two sets of pairwise hypothesis tests that we conduct (Wilcoxon rank-sum and t-test) between having a match with a male versus female of a given institution type are statistically significant at conventional levels of significance for LU males. Second, holding the institution of the matched partner fixed, we notice statistically significant differences by gender in the behavior of IU and Madrassa students, which reveals important interaction between gender and institutions. IU male students treat IU males and IU females similarly, but treat LU females *more* favorably that they treat LU males: 55% of the IU males sent money when matched with an LU male compared to 68% when matched to an LU female (the difference in proportion who send is statistically significantly different from zero at 10%). We also find that Madrassa students treat LU males and LU females similarly, but treat IU females *less* favorably than IU

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males: 80% of the Madrassas students sent money when matched with an IU male compared to only 68% when matched to an IU female (the difference is statistically significant at 1%).

We next turn to the behavior of females. It is interesting to note that IU females (for which we have a larger sample) are significantly less likely to send the Rs. 300 to LU females than to LU males, while they are more likely to send to IU females than to IU males (the latter difference is not statistically significant). This would suggest a bias in favor of their own gender at their home institution, but against females at LU. We can also note that LU females treat males and females similarly.

These results highlight differences in how males and females invest (i.e., send the money to the matched partner) in the trust game depending on the gender and institutions of their partners. There are several dimensions of preferences and beliefs that may motivate a subject to invest in the trust game. One motivation could be unconditional other-regarding preferences, such as altruism (Andreoni and Miller, 2002), warm glow (Andreoni, 1990), inequity-aversion (Fehr and Schmidt, 1999; Bolton and Ockenfeld, 2000) or maximin preferences (Charness and Rabin, 2002). A second determinant of behavior could be beliefs about trustworthiness of the partner (Dufwenberg and Gneezy, 2000; Cox, 2004; Ashraf, Bohnet, and Piankov, 2006). Finally, risk preferences may play a role in the decision (Karlan, 2005; Schecter, 2007).

This distinction is important to understand the nature of players' discriminatory behavior. For example, the lower likelihood of Madrassa students to send money to IU females in Table 3 could be because they either believe IU females to be less trustworthy (in which case this would be statistical discrimination) or because they exhibit lower unconditional other-regarding behavior to IU females (in which case this would be taste-based discrimination), or both. Moreover, while LU males exhibit similar investment behavior in the trust game towards males and females conditional on match institution, their action could still be consistent with different levels of trust and of unconditional other-regarding behavior towards males and females.[9] Results from the trust game do not allow the identification of the relative roles of those dimensions (Cox, 2004).

Our multiple-game experimental design, however, allows us to separately measure unconditional other-regarding behavior and expected trustworthiness, and therefore to isolate the nature of discrimination. In the dictator game, the only motive for sending money to the partner is preferences (unconditional other-regarding behavior). We can thus learn more about taste-base discrimination by analyzing how students played that game. In addition, the elicitation of expected average amount sent back by each group to students from their own institution gives us

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[9] Since students were randomly assigned a treatment (i.e., match type), differences in risk preferences cannot explain any of the results since there is no reason to believe that risk preferences would change by match type. We, therefore, do not focus on this explanation when decomposing behavior in the trust game. We have qualitative measures of risk preferences from the respondents, and they are in fact similar within each treatment conditional on the student's institution.

a measure of expected trustworthiness towards each group, and therefore gives us an indication of statistical discrimination.

We then test the following hypothesis:

Hypothesis 2: There is no statistical discrimination against any one of the genders within matched partners' institutions.

In this framework, statistical discrimination would arise if students had different expectations of trustworthiness of the two genders. Data on expectations reported by individuals regarding the average amount expected from the matched group allow us to investigate this in Table 4. Note that respondents choose an interval for the average and do not report a point estimate for the exact average (see questionnaire in the Appendix). The mean and median amounts presented in Table 4 are those obtained by allocating as expected average the middle of the chosen interval. To show the distribution of expectations, we also present the proportion of respondents who expect to receive more than Rs. 200, more than Rs. 300 and more than Rs. 400. Those are obtained directly from respondents' answers without any assumption. Again, we focus on the differences in expectations by gender keeping the institution of the match fixed.

We first look at the behavior of males. Three points from this table are of note. First, LU students believe males and female within an institution to be as equally trustworthy: none of the three sets of pairwise hypothesis tests that we conduct—Wilcoxon rank-sum, t-test, and Kolmogorov-Smirnov—between having a match with a male versus female of a given institution type (LU male versus LU female; IU male versus IU female) are statistically significant at conventional levels of significance for LU males. Second, we note again some differences by gender of the matched partner for IU students. IU males believe IU females to be less trustworthy than IU males (difference in the mean is statistically significant from zero at 10%), while they expect LU females to be more trustworthy than LU males (the proportion expected to send back more than Rs. 200 is statistically significant at 10%). Third, Madrassa students expect females to be more trustworthy than males. In particular, Madrassa students expect females to return about Rs. 25 more on average than their male counterparts (this difference is statistically significant at 5% when aggregating LU and IU), and assign a 8 percentage-point higher probability to females sending back more than Rs. 300 than males (this difference is statistically significant at 10% for both IU and LU). Recall that Madrassa students were less likely to send money to IU females in the trust game. The statistics presented in Table 4 indicate that statistical discrimination cannot explain their differential behavior by gender in the trust game. In fact, keeping unconditional other-regarding behavior constant, given that Madrassa students expect females to be more trustworthy than males, they should be investing weakly more in the trust game when matched with females than with males.

It is also noteworthy that IU females have lower expectations of the trustworthiness of LU females relative to LU males, while the pattern is reversed when they are matched with IU students (the differences in mean expected amount are not statistically different from zero, but

the difference in the proportion expected to send more than Rs. 200 is statistically significant at 1% for LU). This suggests that the discriminatory behavior of IU females against LU females in the trust game is at least partially explained by statistical discrimination. We can also note that LU females have similar expectations about the trustworthiness of males and females.

Overall, this would suggest that the gender discrimination observed in the trust game by Madrassa students is entirely taste-based, while that of IU females against LU females is at least partly statistical. Behavior in the dictator game—where the main motivation for sending money to the matched partner is unconditional other-regarding behavior—allows us to investigate this further. We next test the following hypothesis:

Hypothesis 3: There is no taste-based discrimination against one of the genders within matched partner's institution.

Table 5 shows the average amounts sent in the dictator game for all pairs of partners. Regarding LU males and IU males, the three sets of pairwise hypothesis tests between having a match with a male versus female of a given institution type (LU male versus LU female; IU male versus IU female) that we conduct are not statistically significant, suggesting that there is no significant taste-based discrimination by those groups of students. Madrassa students send lower amounts on average to females than males. The differences appear not to be statistically significant when we consider each institution separately but if we compare females from IU and LU against males from IU and LU, we find a statistically significant difference in average amount sent using a t-test (P-value=0.0508) and using the Wilcoxon rank-sum test (P-value=0.0321). These patterns are also noticeable in the histogram of splits in the Dictator Game Madrassa students (Figure 1a). This suggests that Madrassas student exhibit taste-based discrimination against females.

We can also note that, for females students, IU females send a significantly lower amount to females at LU relative to males in the dictator game, and a larger amount to females than to males at IU (this latter difference is significant at the 10% level; see also histogram 1b). So they exhibit some taste-based discrimination against LU female but in favor of IU females. However, there is no statistical difference in the amount sent to males and females within an institution by LU females in the dictator game, suggesting that they do not exhibit taste-base discrimination.

3.2. Relative versus absolute position

So far, the focus of our study led us to analyze behavior and perceptions towards males and females within an institution (or social identity). From the women's perspective, such discrimination is relevant for their well-being if they care about their relative position compared to men of a similar social identity. Recent empirical work has documented a systematic correlation between measures of relative income and happiness/subjective well-being (e.g., Luttmer, 2005, Clark et al. 2008), reported job satisfaction and turnover (e.g., Clark and Oswald, 1996, Card et al., 2010). Absolute position may also be relevant to women and it is therefore

interesting to evaluate which groups of males treat females better in absolute terms. Tables 3 and 5 report the P-values of F-test and Kruskal-Wallis test testing for equality of means and distribution for each column of matched partner. It enables us to investigate whether there are systematic differences by groups in their investment behavior for Table 3 or other-regarding behavior for Table 5 towards IU and LU females. Table 3 shows that there are statistical differences and that a higher proportion of Madrassa students invest with female partners at both IU and LU compared to LU and IU males. A similar pattern is observed in the dictator game: Madrassas students give more to female students in the dictator game than any other groups of males. This is because Madrassas students tend to invest more in the trust game and give more in the dictator game than the other groups of males. So, even though they treat females worse than they treat males, they still treat females better than the other groups of males.

3.3. Men and women differences in behavior

While not our main focus, Tables 3 and 4 also enable us to compare how males and females differ overall in how they play the trust and dictator games. It shows that females are less likely to invest in the trust game than males, and that they tend to give about the same as males in the dictator. The gender patterns in the trust game are similar to those in the existing literature in developed and developing countries where there are either no gender differences in trust (Croson and Buchan, 1999; Fehr et al., 2002), or females offer less trust than men (Schechter, 2007; Greig and Bohnet, 2008; Buchan, Croson, and Solnick, 2011). Similarly, the dictator game gender patterns are also similar to existing studies which find either no gender difference in the dictator game (Bolton and Katok, 1995), or that females are more generous (Eckel and Grossman, 1998).

3.4. Accuracy of expectations

If respondents act on their expectations and play according to social preferences equilibrium, it is these expectations that matter in explaining their choices, regardless of whether they are correct or not. However, if expectations are incorrect for a particular group, it implies incorrect stereotypes for that group, which could result in inefficiencies in actual interactions in the society. We therefore next investigate how the expectations of the partner's trustworthiness match with *actual* trustworthiness (amount sent back in the trust game from the trustee), and whether there are any systematic gender biases.

Table 6 compares the expected amount received from the match with the average amount actually sent back. We show the proportion of students who expected more than Rs 300 from a given group and the proportion of students from that group who actually sent more than Rs 300. The third row in each panel reports the p-value for the equality of these two proportions. In addition, we also show the proportion of students who had "accurate" expectations, i.e., those who chose the interval that contained the actual average, and the proportion of students who under-estimated the amount sent, i.e., those who chose an interval whose upper-bound was below the actual average.

We first focus on the accuracy about LU and IU students. Table 6 shows that LU males have more accurate expectations about females than about males: while they expect males and females to give more than Rs. 300 on equal footing, males tend to give less than expected. IU males tend to underestimate the trustworthiness of LU males, there are no systematic patterns by gender of the match. Madrassa students also have inaccurate expectations by gender. While their expectations about receiving more than Rs. 300 when matched with males are fairly similar to actual receipts, they over-estimate this probability for females by at least 15 percentage points. This overestimation is driven by both Madrassa students expecting females to be more trustworthy than their male counterparts (Table 4) and females actually sending back less than their male counterparts. For LU and IU female, we do not note a systematic bias of expectations by gender, but Table 6 shows that both LU and IU females tend to have misperception about females from the other institutions: LU females overestimate the trustworthiness of IU females while IU female underestimate the trustworthiness of LU females. Finally, it is interesting to note that all groups, except IU males and Madrassa students, underestimate the trustworthiness of Madrassa students.

3.5. Summary of results

We now summarize all our results by institutions:

RESULT 1 (Liberal University males and females)*: Male and female LU students do not exhibit any statistical or taste-base gender discrimination.*

RESULT 2 (Islamic University males): *IU male students favor LU females in the trust game but treat IU males and IU females similarly. They exhibit statistical discrimination towards IU females compared to their male counterparts but do not exhibit taste-base discrimination against females compared to males.*

RESULT 3 (Madrassas)*: Madrassas discriminate against IU females (but not LU females) in their investment behavior in the trust game. This is despite the fact that they believe females to be more trustworthy than males and because they exhibit taste-based discrimination against both IU and LU females (though, because they exhibit higher unconditional other-regarding behavior than other groups, they usually give more to females than any other group of males).*

RESULT 4 (Islamic University females): *IU females discriminate against LU females ((but not IU females) in the trust game. They exhibit taste-base discrimination in favor of IU females but against LU females compared to their male counterparts, and expect LU females to be less trustworthy than their male counterparts.*

4. Conclusion

Women in South Asia lag behind men in many domains. While most studies identify unequal treatment of boys and girls within the households, few do not find any differences. One possible explanation is that unequal treatment varies substantially depending on factors such as regions, social status or religiosity. In the Pakistani context, our paper shows interesting interactions between social identity and gender discrimination: gender discrimination is not uniform across the educated Pakistani society and varies in nature and intensity as a function of the social identity of both individuals who interact.

Liberal University students, who are wealthier, less religious and more exposed to Western ideas, do not discriminate against women. Madrassa students, who come from more humble backgrounds, are more religious and relatively unexposed to Western ideas, exhibit taste-base discrimination against women. However, because they give and trust more than any other groups, they actually treat women almost as well or better than other groups of males in the society. Islamic University students, who fare in the middle in term of wealth and religiosity, have a less uniform behavior: their behavior towards males and females depends on the institutions (or social identity) of the person with whom they interact. Islamic University males favor Liberal University females while they do not favor Islamic University females, and Islamic University females discriminate against only Liberal University females.

Because socio-economic status is negatively correlated with religiosity and lack of exposure to Western idea in our data, we cannot categorically determine the mechanisms that explain the gender taste-base discrimination that we identify. In addition to individual characteristics, external factors, such as competition in the labor and marriage market, may also be responsible for some of the patterns in the data. For example, because they hail from a less privileged background, Islamic University students may feel that they need to behave differently when facing someone from a higher social status to reach a position similar to that of individuals from this status. Independently of the mechanisms, within elite groups, higher status women are favored and less discriminated against in Pakistan, which may explain why some are able to reach important leadership position.

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Figure 1a: Amount sent to match (out of Rs. 400) in Dictator Game by Madrassa Students
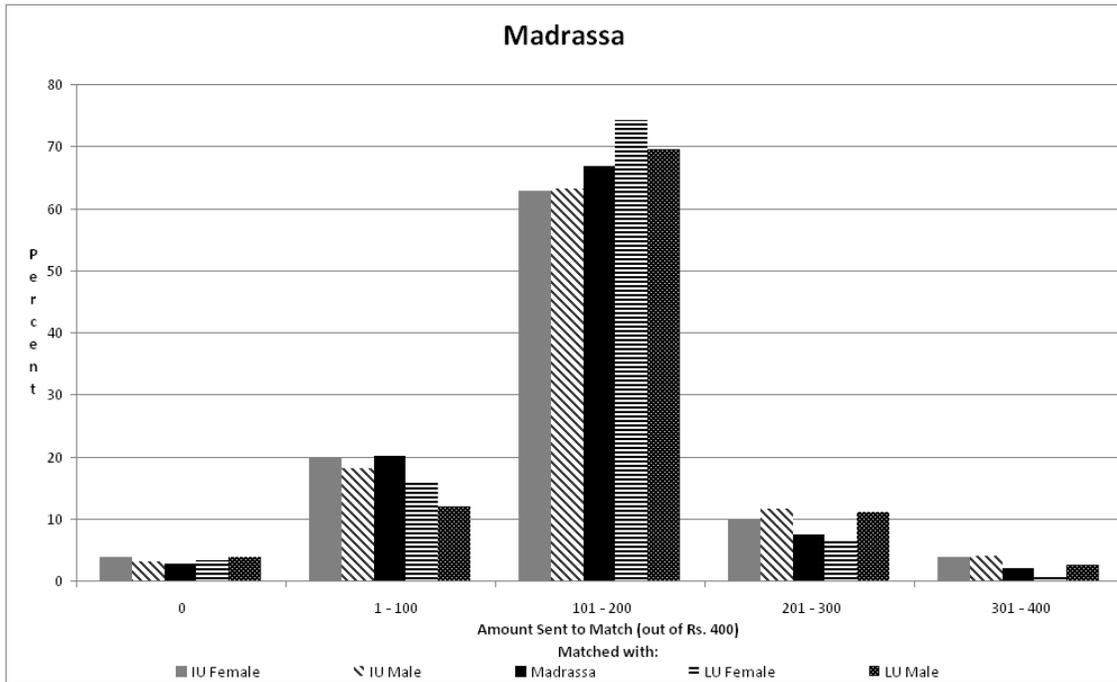
Figure 1b: Amount sent to match (out of Rs. 400) in Dictator Game by IU Females
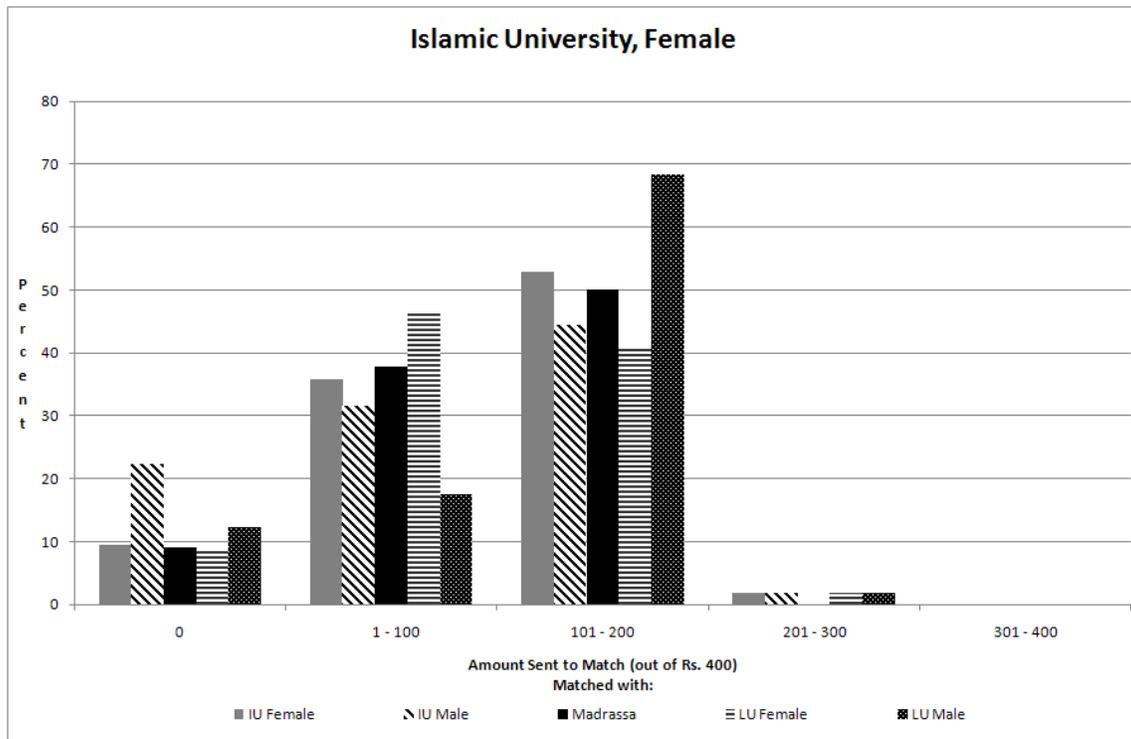
Table 1: Summary Characteristics

	LU		IU		Madr	City		LU+IU	
	Male	Fem	Male	Fem		Male	Fem	Male	Fem
# of Observations	758	203	444	286	1145	394	341	955	375
Age	21	21	22	22*	22	34	31**	22	22
	(2.8)	(3.4)	(2.5)	(2.2)	(3)	(13)	(12)	(2.4)	(2.2)
Father's yrs of	12	12	11	13***	7.1	7.7	11***	11	12 **
education	(5.2)	(5.4)	(4.2)	(3.2)	(5)	(5.4)	(4.7)	(5.2)	(4.6)
Mother's yrs of	12	13 ***	7.1	9***	3.4	4	7.5***	9.2	9.7
education	(4.4)	(3.6)	(5.1)	(4.5)	(4.4)	(4.9)	(5.3)	(5.3)	(4.7)
Parent income	127	155 *	42	66***	20	25	30	72	80
('000s Rs)	(182)	(212)	(52)	(121)	(60)	(24)	(31)	(117)	(148)
# of siblings	3.5	3 ***	4.5	4.2*	.	5.1	4.3***	4.2	4.1
	(2)	(1.7)	(2.3)	(2)	(.)	(3)	(2.5)	(2.2)	(2)
% attend relig school[a]	35	19***	45	30***	100	9	12	44	30***
% father Madrassa[b]	11	5**	12	8*	20	1	1	13	9**
% mother Madrassa	21	19	20	18	.	1	2	23	20
% friend Madrassa	29	22**	41	31***	.	4	4	40	33**
% sibling Madrassa	43	29***	63	64	.	5	5	41	37
% Parents own:									
home	88	87	82	79	82	100	100	84	79**
tv	85	87	79	93***	30	84	56***	81	92***
cell phone	83	85	80	87**	74	97	84***	80	86**
computer	74	78	59	74***	25	70	51***	65	74***
internet access	57	67**	39	52***	7	45	35***	44	53***
motorbike	59	48***	50	42**	33	61	19***	57	45***
car	72	81**	41	57***	10	37	25***	55	61**
Religiosity (0-10)[c]	5.7	5.6	6.3	6.3	9.2	6.1	6.3	6.1	6.2
	(1.8)	(1.6)	(1.7)	(1.6)	(1.6)	(2.4)	(1.8)	(1.8)	(1.6)
Number of times	2	2.4 ***	2.9	3.6***	4.9	2.9	3.6 ***	2.5	3.4 ***
pray/day	(1.7)	(1.7)	(1.7)	(1.3)	(.42)	(1.9)	(1.5)	(1.7)	(1.4)
Prop that fast	.91	.87 **	.96	.94*	.98	.89	.88	.93	.93
Ramadhan	(.21)	(.25)	(.15)	(.17)	(.12)	(.24)	(.25)	(.18)	(.18)
Trust (0-10)[d]	4.6	4 ***	4.6	3.9**	5.1	.	.	4.7	3.9 ***
	(2.4)	(2.4)	(2.7)	(2.8)	(3.4)		(.)	(2.7)	(2.8)
Risk general (0-10)[e]	6.8	7	6.6	6.1**	5.2	.	.	6.7	6.2 ***
	(2.3)	(2.1)	(2.4)	(2.5)	(3.9)		(.)	(2.4)	(2.5)
% watch:									
English news	84	88	83	83	25	24	53***	83	84
BBC or CNN	59	70***	60	59	23	12	25***	59	62
% know violence victim[f]	18	21	35	29*	.	14	15	27	27

[a] Percent of respondents who have ever attended a religious institution (full time or part time)

[b] Percent of respondents whose father attended a Madrassa or any religious institution for more than 2 years (either part time or full time).

[c] Self-reported religiosity on a scale of zero (not religious at all) to 10 (very religious).

[d] Response to question: "....most people can be trusted?" on a scale of zero (all people cannot be trusted) to 10 (all people can be trusted).

[e] Self-reported risk preference on a scale of zero (totally unwilling to take risk) to 10 (fully prepared to take risks).

[f] Percent of respondents who have an acquaintance died or injured in the violence in recent years.

This table shows pairwise t-tests for male versus female characteristics within each institution.

Significant at * p<0.10, ** p<0.05, *** p <0.01.

Table 2: Number of respondents by match

Institution:	LU Male$^\oplus$	LU Female$^\oplus$	IU Male	IU Female	Madrassa	Total
			Matched with:			
LU Male	153	145	141	158	161	758
LU Female	40	47	57	33	26	203
IU Male	89	87	86	87	95	444
IU Female	57	56	54	53	66	286
Madrassa	236	217	198	132	362	1,145
Total	575	552	536	463	710	2,836

$^\oplus$ LU-M were matched with LU-M. All other institutions were matched with LU-W.

Table 3: Proportion of respondents who send money in the Trust game

Institution:		Total	LU		IU		Madr	LU+IU	
			Male	Female	Male	Female		Male	Female
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LU Male		0.7177	0.6667	0.7034	0.7872	0.7089	0.7267	0.7245	0.7063
	N	758	153	145	141	158	161	294	303
IU Male		0.6306	0.5506	0.6897*+	0.6279	0.6207	0.6632	0.5886	0.6552
	N	444	89	87	86	87	95	175	174
Madr		0.7904	0.8263	0.8157	0.8081	0.6818***+++	0.7818	0.8180	0.7650*+
	N	1145	236	217	198	132	362	434	349
(Males) **P-value for:**[b]									
F-test		0.0000	0.0000	0.0165	0.0011	0.3532	0.0164	0.0000	0.0077
K-Wallis test		0.0000	0.0000	.0168	0.0012	0.352	0.0165	0.0000	0.0078
LU Female		0.6749	0.575	0.6383	0.7368	0.7576	0.6538	0.6701	0.6875
	N	203	40	47	57	33	26	97	80
IU Female		0.5000	0.6316	0.4286***+++	0.3519	0.4906	0.5758	0.4955	0.4587
	N	286	57	56	54	53	66	111	109
Total		0.7084	0.7043	0.7120	0.7201	0.6631*+	0.7296	0.7120	0.6897
	N	2836	575	552	536	463	710	1111	1015
(All) **P-value for:**[b]									
F-test		0.0000	0.0000	0.0000	0.0000	0.0289	0.0032	0.0000	0.0000
K-Wallis test		0.0000	0.0000	0.0000	0.0000	0.0296	0.0033	0.0000	0.0000

[a] P-values of tests for equality of means (F-test) and distributions (Kruskal-Wallis test) across matches within an institution.
[b] P-values of tests for equality of means/distributions across institutions.

The table also reports two types of pairwise tests between having a match with LU Male versus LU Female, and with IU Male versus IU Female: (1) T-tests significant at *p<0.10,**p<0.05,***p<0.01, (2) Wilcoxon rank-sum tests significant at +p<0.10, ++p<0.05, +++p <0.01. Stars and plus signs are reported on the columns for female matches.

Table 4: Amount Expected back from match out of Rs.900

Institution:	Total	Matched with: LU Male	LU Female	IU Male	IU Female	Madr	LU + IU Male	LU + IU Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LU Male								
mean	369.789	363.072	374.828	387.589	383.544	342.547	374.830	379.373
median	350.000	350.000	450.000	450.000	450.000	350.000	350.000	450.000
Prop. expect >200	0.897	0.895	0.917	0.901	0.905	0.870	0.898	0.911
Prop. expect >300	0.722	0.712	0.766	0.745	0.759	0.634	0.728	0.762
Prop. expect >400	0.487	0.438	0.552**	0.504	0.576	0.373	0.469	0.564**
N	758	153	145	141	158	161	294	303
IU Male								
mean	354.279	333.146	355.747	379.070	341.954*	361.579	355.714	348.851
median	350.000	350.000	350.000	350.000	350.000	450.000	350.000	350.000
Prop. expect >200	0.869	0.787	0.885*	0.930	0.828**	0.916	0.857	0.856
Prop. expect >300	0.694	0.640	0.667	0.756	0.701	0.705	0.697	0.684
Prop. expect >400	0.446	0.360	0.448	0.488	0.425	0.505	0.423	0.437
N	444	89	87	86	87	95	175	174
Madrassa								
mean	412.224	404.077	425.349	405.897	429.389	406.825	404.907	426.879**
median	450.000	450.000	450.000	450.000	450.000	450.000	450.000	450.000*
Prop. expect >200	0.923	0.919	0.926	0.919	0.947	0.917	0.919	0.934
Prop. expect >300	0.799	0.750	0.839**	0.783	0.856*	0.796	0.765	0.845***
Prop. expect >400	0.628	0.623	0.668	0.591	0.659	0.616	0.608	0.665
N	1133	233	215	195	131	359	428	346
(Males) **P-value for:**								
F-test[a]	0.000	0.000	0.000	0.297	0.000	0.000	0.000	0.000
Median test[b]	0.000	0.003	0.000	0.075	0.001	0.001	0.000	0.000
K-Wallis test[c]	0.000	0.000	0.000	0.110	0.000	0.000	0.000	0.000
LU Female								
mean	339.655	365.000	313.830	334.211	365.152	326.923	346.907	335.000
median	350.000	350.000	350.000	350.000	350.000	350.000	350.000	350.000
Prop. expect >200	0.872	0.900	0.787	0.895	0.879	0.923	97	80
Prop. expect >300	0.640	0.700	0.532	0.667	0.758	0.538	0.897	0.825
Prop. expect >400	0.365	0.375	0.383	0.281	0.485*	0.346	0.680	0.625
N	203	40	47	57	33	26	0.320	0.425
IU Female								
mean	331.119	357.018	328.571	316.667	331.132	322.727	337.387	329.817
median	350.000	350.000	350.000	350.000	350.000	350.000	350.000	350.000
Prop. expect >200	0.864	0.965	0.804***	0.815	0.868	0.864	0.892	0.835
Prop. expect >300	0.615	0.737	0.589*	0.574	0.623	0.561	0.658	0.606
Prop. expect >400	0.318	0.333	0.339	0.296	0.283	0.333	0.315	0.312
N	286	57	56	54	53	66	111	109
(All) **P-value for:**								
F-test[a]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Median test[b]	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000
K-Wallis test[c]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[a(a')] F-test for the equality of means across institutions (within institution by match).

[b(b')] Nonparametric median test for the equality of medians across institutions (within institution by match).

[c(c')] Kruskal-Wallis test for the equality of distributions across institutions (within institution by match).

This table also reports the following pairwise tests between having a match with LU Male versus LU Female, and with IU Male versus IU Female. For the amount expected in the Trust game:

(1) T-test on the means; (2) Wilcoxon rank-sum test on the medians; (3) Kolmogrov-Smirnov test on the sample sizes.

For the proportion expecting >200, 300, and 400, Wilcoxon rank-sum test is reported.

Stars are reported on the columns for female matches. For all tests,* p<0.10, ** p<0.05, *** p<0.01.

Table 5: Amount Sent in Dictator game

Institution:	Total	Matched with							
		LU		IU		Madr	LU+IU	
		Male	Fem	Male	Fem		Male	Fem
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LU Male								
mean	163.13	151.30	145.67	180.63	171.35	166.68	165.37	159.06
median	200	200	200	200	200	200	200	200
N	758	153	145	141	158	161	294	303
% don't send	0.088	0.111	0.110	0.050	0.076	0.093	0.082	0.092
IU Male								
mean	140.27	141.59	150.07	135.49	118.24	154.53	138.58	134.06
median	200	200	200	185	100	200	174	171
N	440	88	85	86	86	95	200	200
% don't send	0.161	0.159	0.128	0.163	0.267	0.095	0.161	0.198
Madrassa								
mean	181.74	187.39	178.12	189.44	179.24	176.93	188.34	178.55*
median	200	200	200	200	200	200	200	200**
N	1139	233	217	198	132	359	431	349
% don't send	0.032	0.038	0.032	0.030	0.038	0.028	0.034	0.034
(Males) **P-value for:**								
F-test	0.000	0.000	.0007	0.000	0.000	.0064	0.000	0.000
Median test	.0006	.1574	.4776	.0037	.0131	.7535	.0024	.0311
K–Wallis test	0.000	0.000	.0042	0.000	0.000	.0025	0.000	0.000
LU Female								
mean	169.5764	164.38	172.34	176.30	192.42	128.85	171.38	180.63
median	200	200	200	200	200	175	200	200
N	203	40	47	57	33	26	97	80
% don't send	0.064	0 .050	0.106	0.018	0.000	0.192	0.031	0.063
IU Female								
mean	132.89	153.86	124.91**	111.48	137.74*	135.16	133.24	131.20
median	150	200	100**	100	150*	150	150	100
N	283	57	55**	54	53	64	111	108
% don't send	0.124	0.123	0.091	0.222	0.094	0.094	0.171	0.093
Total								
mean	164.51	165.71	159.38	169.22	161.37	166.00	167.41	160.29**
median	200	200	200	200	200	200	200	200**
N	2823	571	549	536	462	705	1107	1011
% don't send	0.079	0.086	0.080	0.075	0.097	0.064	0.712	0.690
(All) **P-value for:**								
F-test	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Median test	0.000	.0012	.2401	.0001	.0132	.0926	0.000	.007
K–Wallis test	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

This table also reports three pairwise tests between having a match with LU Male versus LU Female, and with IU Male versus IU Female: (1) T-test on the means for female matches, (2) Wilcoxon rank-sum on the medians for female matches, and (3) Kolmogorov-Smirnov on the sample sizes for female matches.

For all tests, * p<0.10, ** p<0.05, *** p<0.01.

Table 6: How do Expectations Compare with Actual Choices of Trustees?

Institution:	Total	Matched with					P-value for: LU+IU	
		LU Male	LU Fem	IU Male	IU Fem	Madr	Male	Fem
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)
LU Male								
Prop. expect >300	0.722	0.712	0.766	0.745	0.759	0.634	0.728	0.762
Prop. match sent >300	0.715	0.62	0.775***	0.584	0.719	0.814	0.607	0.742
actual v. expected[a]		.0901	.9006	.0108	.5508	.0001	.1291	.4920
Prop. accurate expec.	0.365	0.275	0.517***	0.241	0.487***+++	0.304	0.259	0.502
Prop. under-estimated	0.413	0.288	0.448***	0.255	0.424***+++	0.627	0.272	0.436
N	758	153	145	141	158	161	294	303
LU Female								
Prop. expect >300	0.640	0.700	0.532	0.667	0.758	0.538	0.680	0.625
Prop. match sent >300	0.732	0.766	0.681	0.724	0.554	0.770	0.750	0.612
actual v. expected[a]		.3988	.1425	4647	.0552	.0105	.1956	.6878
Prop. accurate expec.	0.330	0.275	0.340	0.386	0.273	0.346	0.258	0.200
Prop. under-estimated	0.483	0.625	0.617	0.333	0.242	0.654	0.680	0.375
N	203	40	47	57	33	26	97	80
IU Male								
Prop. expect >300	0.694	0.640	0.667	0.756	0.701	0.705	0.697	0.684
Prop. match sent >300	0.748	0.745	0.737	0.756	0.722	0.758	0.749	0.730
actual v. expected[a]	0.0722	.0923	.3748	1	.7906	.3406	.6074	.2679
Prop. accurate expec.	0.372	0.303	0.368	0.442	0.276**++	0.463	0.371	0.247
Prop. under-estimated	0.500	0.640	0.552	0.512	0.299***+++	0.495	0.577	0.316
N	444	89	87	86	87	95	175	174
IU Female								
Prop. expect >300	0.615	0.737	0.589*+	0.574	0.623	0.561	0.658	0.606
Prop. match sent >300	0.741	0.772	0.788*+	0.678	0.642	0.773	0.739	0.698
actual v. expected[a]	0.000	.5931	.0565	.214	.8422	.002	0.279	0.294
Prop. accurate expec.	0.297	0.298	0.268	0.278	0.340	0.303	.0651	.436
Prop. under-estimated	0.566	0.667	0.661	0.426	0.377	0.667	0.685	0.394
N	286	57	56	54	53	66	111	109
Madr								
Prop. expect >300	0.799	0.750	0.839**++	0.783	0.856*+	0.796	0.765	0.845***+++
Prop. match sent >300	0.738	0.708	0.577	0.779	0.712	0.757	0.734	0.674
actual v. expected[a]	0.000	.3551	.0012	.9403	.0152	.2124	.3682	.0002
Prop. accurate expec.	0.366	0.127	.488***+++	0.455	.197***+++	0.461	0.452	0.181
Prop. under-estimated	0.313	0.237	0.323**++	0.394	.136***+++	0.376	0.378	0.146
N	1145	236	217	198	132	362	434	349

[a] T-test for the equality of proportion that expect more than 300 and the proportion of match group that actually send back more than 300.

This table also reports two pairwise tests between having a match from LU Male versus LU Female and from IU Male versus IU Female: (1) Wilcoxon rank-sum tests significant at [+] p<0.10, [++] p<0.05, [+++]p<0.01, and (2) T-tests significant at [*] p<0.10, [**] p<0.05, [***]p<0.01.
Stars and plus signs are reported on the columns for female matches.

Table 7: Determinants of investment decision in the Trust game

	LU Males			LU Females			IU Males			IU Females			Madrassa		
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3a)	(3b)	(3c)	(4a)	(4b)	(4c)	(5a)	(5b)	(5c)
Trustworthiness[a]	0.029**		0.029**	0.053**		0.057**	0.071***		0.07***	0.06**		0.06**	0.03***		0.03***
	(0.012)		(0.012)	(0.027)		(0.028)	(0.019)		(0.02)	(0.02)		(0.03)	(0.01)		(0.01)
Dictator Split[b]	0.120***		0.118***	0.160***		0.157***	0.19***		0.19***	0.16***		0.15***	0.10***		0.10***
	(0.021)		(0.022)	(0.051)		(0.053)	(0.03)		(0.03)	(0.04)		(0.05)	(0.02)		(0.02)
IU Male match[c]		0.125***	0.092*		0.150*	0.158*		0.06	0.06		-0.26***	-0.20**		-0.02	-0.04
		(0.045)	(0.047)		(0.085)	(0.086)		(0.07)	(0.07)		(0.09)	(0.09)		(0.04)	(0.04)
IU Female match[d]		0.040	0.010		0.196**	0.173*		0.07	0.12*		-0.13	-0.10		-0.15***	-0.17***
		(0.048)	(0.050)		(0.086)	(0.091)		(0.07)	(0.07)		(0.10)	(0.10)		(0.05)	(0.06)
LU Female match[e]		0.041	0.047		0.058	0.077		0.12*	0.12		-0.19**	-0.16*		-0.01	-0.02
		(0.049)	(0.049)		(0.093)	(0.094)		(0.07)	(0.07)		(0.09)	(0.09)		(0.04)	(0.04)
Madrassa match[f]		0.055	0.048		0.059	0.139		0.10	0.07		-0.04	0.01		-0.05	-0.04
		(0.047)	(0.048)		(0.108)	(0.097)		(0.07)	(0.07)		(0.09)	(0.10)		(0.04)	(0.04)
Observations	744	744	744	198	198	198	430	433	430	279	282	279	1083	1098	1083

Dependent Variable: Whether respondent sends money in the Trust game.

Table reports marginal effects of a probit regression of trust game decision (coded as 1 or zero) on dictator game behavior and expectations of match's trustworthiness.

[a] Reported expectation of match's trustworthiness (center of the interval).

[b] Amount sent to match by the respondent in the dictator game.

[c][d] Dummy that equals 1 if respondent is matched with a male (female) student at IU.

[e] Dummy that equals 1 if respondent is matched with a female student at LU.

[f] Dummy that equals 1 if respondent is matched with a student at a Madrassa (all of whom are males). Excluded category is a match with a LU Male student.

Standard Deviations in parentheses. * p<0.10, ** p<0.05, *** p<0.01.