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Testing for Differences Across Genders: Evidence from Ultimatum Game

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This paper analyses the following propositions: (i) Are people generally self-interested; (ii) If people tend to be generous, what is their motive, i.e., whether they fear rejection or do they prefer fairness; and (iii) Is there any behavioural difference in bargaining between males and females?

We conduct an ultimatum bargaining experiment in a "same gender pairings" setting and observe the overall offers made by the proposers and the rejection rates of the responders. In order to test the second hypothesis we compare the offers that proposers anticipate will be accepted by the responders and the offers they actually make. If actual offer exceeds the minimum acceptable offer, anticipated by the proposer, we conclude that he is fair minded, otherwise, he is considered generous due to fear of rejection. In order to test the third hypothesis, we compare the offers and responses made by males and females in this game.

Our results indicate that people on average, are not self-interested and tend to exhibit generosity. This behaviour is dictated by a fear of rejection rather than a concern for fairness. Further, this fear of rejection is very realistic, particularly, in the case of males, where the rejection rates for unfair offers are very high.

Regarding gender differences, we find females to be more generous than males. However, reason for this generosity could not be found, since there is no significant difference in the degree of fairness or fear of rejection across the two genders. We also do not find any conclusive evidence that females are more reciprocal than males.

Keywords: Ultimatum Game, Fairness, Reciprocity

INTRODUCTION

Earlier studies in Pakistan [Naeem and Zaman (2014) and Razzaque (2009)] have analysed generosity while examining gender differences in the ultimatum game. However, the motives behind observed generosity have not been tested in these studies. In the present study we test that when people tend to be generous, is it because they fear rejection or because they have a preference for fairness.

The stylised form of negotiation, known as the ultimatum game, was first examined by Güth, Schmittberger, and Schwarze (1982). In the original experiment, proposers offered their opponents, on average, 36.7 percent of the pie, while one offer of 30 percent was rejected. These results contradict the usual economic assumption of self-interested individuals.

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Some regard the ultimatum game as one of the classic demonstrations of human irrationality. The rational (game theoretic) analysis of the game is simple. The responder has the choice of whatever the proposer offered him or nothing. Since, something is better than nothing, we would expect the responder to take whatever the proposer offers him. Knowing this, we would expect the proposer to offer the minimum possible amount to the responder.

The experimental studies, based on the ultimatum game reflect that results deviate from this Nash Equilibrium. When people play the ultimatum game in the lab, in a large number of human studies, conducted with different incentives in different countries, a majority of proposers offer 40-50 percent of the total amount, and about half of all responders reject offers below 30 percent.

Given that it is not irrational for proposers to offer higher amounts, if they know that responders reject lower offers. However, as discussed above, it is irrational for the responders to reject the proposed division. So, why do they do it?

A common interpretation is that responders would rather forgo some money than be treated unfairly (reciprocity). On the other hand, proposers' behaviour is understood as one combining two motives; a taste for fairness and the anticipation that small offers may be turned down (fear of rejection) [Thaler (1988)].

To answer this question, Forsythe, Horowitz, Savin, and Sefton (1994) compare offers in the ultimatum game with offers in the dictator game, to conclude that the more generous offers in the ultimatum game can be attributed more to fear of rejection than to fairness.

Further, in the ultimatum game, gender has been observed to influence a variety of decisions, for instance, Eckel and Grossman (2001) observe chivalry (men accept lower offers from women than from men) and solidarity (women accept lower offers from women than from men). Solnick (2001) finds, in contrast, that players of both sexes demand more from women than from men. Both studies report that offers are lower to women than to men, and that offers from women and men are not significantly different.

The purpose of our study is to examine the following propositions:

(1) Are people generally self-interested?
(2) If people tend to be generous, what is the motive; whether they fear rejection or have a preference for fairness?
(3) Is there any behavioural difference in bargaining between males and females?
    (a) Are females more generous than males?
    (b) If yes, then what is the motive?
    (c) Are females more reciprocal in their behaviour than males?

In this respect, we conduct an ultimatum bargaining experiment in a "same gender pairings" setting. In order to test the first statement we look at the overall offers made by the proposers and the rejection rates of the responders. In order to test the second proposition we compare the offers that proposers anticipate will be accepted by the responders and the offers they actually make. If actual offer exceeds the minimum acceptable offer anticipated by the proposer, we conclude that she is fair minded. Otherwise, she is being generous due to fear of rejection. In order to answer the third question, we compare the offers and responses of males and females in our experiment.

The rest of the paper is organised as follows: The next section reviews the existing literature on gender differences across a variety of experiments. We then present the experimental design with the following section reporting the results of our experiment. The final section concludes.

LITERATURE REVIEW

A key insight from experimental economics is that people typically do not behave as selfishly as traditional economics assumes them to do. An experimental game that produces very convincing and consistent evidence in this regard is the ultimatum game. For instance, Oosterbeek, Sloof, and Van de Kuilen (2004) report the findings of a meta-analysis of 37 papers with 75 results from the ultimatum game, to find that on average the proposer offers 40 percent of the pie to the responder. Also, on average 16 percent of the offers are rejected.

It has been investigated whether offers depend on the amount of money at stake. Results tend to reject this as an explanation; studies in which raising the stakes in ultimatum games is the explicit focus, typically find no significant differences in the shares offered. However, the rejection rate decreases as the stakes are increased [Cameron (1999); Munier and Zaharia (1998); Slonim and Roth (1998); List and Cherry (2000)].

Another explanation for variation in average offers and rejection rates is based on gender differences. Contemporary feminist ideals of minimalist sex differences further reinforce this perspective; much of the relevant feminist research seeks to "shatter stereotypes about women's characteristics and change people's attitudes, by proving that women and men are essentially equivalent in their personalities, behavioural tendencies and intellectual abilities" [Eagly (1995)].

Other studies suggest that many men and women assume that gender differences in negotiation exist and that they act consciously or unconsciously upon that assumption. One experiment based on an ultimatum game concludes that when the bidders know their partner's gender from a simple name cue, both males and females make significantly lower (more competitive) offers to female respondents [Solnick (2001)].

Using variations on the prisoner's dilemma, some studies find women to be more cooperative or generous [Aranoff and Tedeschi (1968); Meux (1973); Ortmann and Tichy (1999)]. Others find men to be more cooperative [Rapoport and Chammah (1965); Kahn Hottes, and Davis (1971); Mack, Auburn, and Knight (1971)]. Yet others find inconsistent or no significant difference between the genders [Dawes, McTavish, and Shaklee (1977); Stockard, Van de Kragt, and Dodge (1988); Orbell, Dawes, and Schwartz-Shea (1994)]. Similarly, Mason, Phillips, and Redington (1991) find no gender difference in a duopoly experiment. In public goods experiments, Brown-Kruse and Hummels (1993) find that women contribute significantly less than men, while Nowell and Tinkler (1994), on the other hand, report significantly higher contributions by groups of women than by mixed-sex or all-male groups. Bolton and Katok (1995) find no difference between the behaviour of men and women in dictator games.

Eckel and Grossman (1996) examine gender differences in a punishment game, where subjects could choose to divide evenly a $10 (or $12) pie with someone who had previously been generous with another subject, or an $8 pie with someone who had

previously been ungenerous. They find that women are at least as likely as men to punish ungenerous counterparts. In a later study, Eckel and Grossman (1998) use a dictator experiment to find that women are more generous to their partners than men; women donate, on average, about twice as much as men.

Regarding gender differences in the trust game Croson and Buchan (1999) give two explanations for female responders, returning more than male responders. First, it may be that women are more altruistic than men and thus they return a higher proportion of their earnings. However, if this were so one would expect to see a significant gender effect in both amounts, sent and proportion returned, not only in the later. Alternatively, the authors suggest that reciprocity could be driving the difference between male and female behaviour in this setting. This explanation involves women being more likely to reciprocate than males, rather than being simply more altruistic.

With respect to the ultimatum game specifically, Botelho, Hirsh, and Rutström (2000) use experimental data, collected in Russia and in the United States to find that the average offer made by female subjects in the two countries equals about 45 percent of the pie, and the median offer is 48.8 percent and 42.5 percent in the United States and Russia, respectively. Corresponding figures for male subjects are 31.5 percent in the United States and 35.3 percent in Russia, while the median offer is 30 percent in both the countries. Further they report that, irrespective of the offer range, female subjects in both the United States and Russia exhibit substantially higher rejection rates than male subjects.

Eckel and Grossman (2001) find that although women proposers are more generous than men, the difference is statistically weak. Further, they observe systematic differences in the behaviour of men and women; women are significantly more cooperative in that the probability that a woman will accept a given offer is higher than for a man. They also find that context is important; the gender of the respondent's partner has a strong effect on the subject's decision, in the sense that women both reject and get rejected less frequently (solidarity between women) and that male respondents do not usually reject unfair offers by female proposers (chivalry among men).

Solnick (2001) suggests that both males and females tend to offer less to women, seemingly expecting women to be content with less. However, as indicated by the higher minimum acceptable offers chosen by females, this expectation seems to be wrong footed. Further, both genders set their minimum acceptable offers higher when they are facing a female proposer, thus indicating that they expect more generosity from females as compared to males. The author concludes that there are systematic differences caused by gender, and that these can have important and interesting consequences for economic behaviour. Further, the results have implications for experimental methodology. In particular, experimenters may need to take care in assuring that their studies are gender balanced, and that findings are due to economic factors and not because of the gender composition of their samples

The general conclusion that can be drawn from this body of work is that women are more socially-oriented (selfless) and men are more individually-oriented (selfish). If these differences carry over to economic decisions, when money is at stake, then theories that model agents as homogeneous, or being drawn from a common distribution, may predict behaviour inaccurately. If instead, gender differences in behaviour are overwhelmed by monetary incentives, then economic decisions are fundamentally different from those examined in other social and behavioural sciences.

Another relevant concern is the reconciliation of the fact that gender seems to manifest itself only in certain domains while remaining indiscernible in others. The only plausible answer to this question, as pointed out by Riley and McGinn (2002), may be that "Findings from gender research mirror the inductive conclusions one is likely to draw from daily experience: Men do not consistently act one way and women another, sometimes gender matters, and sometimes it does not".

EXPERIMENTAL DESIGN

A total of 146 (76 females and 70 males) subjects participate in this study. Graduate and undergraduate students are recruited from the student population at International Institute of Islamic Economics, International Islamic University, Islamabad.

There are three sessions; first session comprised of 24 undergraduate male students, second session was of 76 graduate female students and third session consisted of 46 graduate male students. In each session half of the subjects make offers and the remaining half accept or reject these offers.

Participants are paid in the form of 5 bonus marks in a subject that they are enrolled at that time of participating in the experiment (the worth of these marks is assumed to be high enough for the students to induce them to participate in the game). They bargain over Rs. 50[1] in all the sessions.

All the experimental sessions are conducted in large classrooms where there is plenty of room for participants to spread out for privacy. All sessions have two rounds. In the first round, the proposers are handed over a simple questionnaire which requires them to state what they expect is the minimum offer (expected MAO) that would be acceptable to the responder. Similarly, the responders are asked to state the minimum offer (MAO) that they will accept from the proposer.

In the second round, the proposers are handed over an envelope containing actual money along with another envelope in which they could put the amount they intend to give to the responder.

Once the proposers have made their decisions, they hand over the responders' envelopes to the experimenter who distributes these envelopes between the responders randomly.

Each responder after considering the offer made by the proposer decides whether to keep the envelope (in case of acceptance) or return it to the experimenter (in case of rejection). The proposers whose offers are rejected then return their envelopes, so that in case of rejection both the parties get nothing.

RESULTS AND DISCUSSION

Descriptive Statistics

The mean offer is Rs 22.88 (46 percent of the total amount), indicating that people are more generous than what economists predict. Further, this result is consistent with the standard experimental results. The offers are reported in Table 1.[2]

[1] Equivalent to US$ 0.83 at the exchange rate prevailing at the time the experiment was conducted.

[2] For tables and figures refer to the annexure.

The rejection rate for all the responders is 23.29 percent. It can be seen from Table 2 that most of the rejections are for the offers that are below the 50 percent division. However, in some cases fair and hyper-fair are also rejected by the responders where they expect more generosity from the proposers. This rejection rate is also comparable with previous experimental results.

The proportion of proposers who are generous due to their preference for fairness (who give more than what they think would be acceptable to the responder) is 27.4 percent. The remaining proposers offer generously due to fear of rejection. Again this is analogous to the experimental findings that generosity on the part of the proposers is mainly attributable to the fear that the offer will be rejected and they would get nothing. Fairness only plays a smaller part in this behaviour.

Regarding gender differences in proposer behaviour, males offer Rs 21.57 (43 percent of the pie) to the responders while females offer Rs 24.08 (48 percent of the total amount) to their counterparts. The details of these offers are given in Tables 3 and 4.

The rejection rates across genders vary by a considerable amount. The rejection rate for males is 40 percent while that for females is almost 8 percent. This difference may be attributed to the fact that female proposers generally offer higher shares as compared to male proposers. This is also evident from the data that most of the offers rejected by males lie in the 0.08-0.25 dollars range (10-30 percent share of the pie). Further, the variance in female offers is much less (0.05) as compared to males (0.12).

The proportion of proposers exhibiting fairness is also considerably different, with female proposers exhibiting a greater level of fairness as compared to males. Almost 32 percent of the females demonstrate fairness in their offers to the responders as compared to nearly 23 percent of the males. However, a considerable amount of proposers in both genders have fear of rejection as the main motivation behind their behaviour. Further, this fear of rejection is well founded, especially in males where many of the unfair offers are rejected.

Inferential Statistics

The results of various tests carried out with respect to the propositions stated in the introduction are reported as follows:

(1) Are people generally self-interested?

In order to test whether people systematically make generous offers or not, we applied the t-test of significance. The hypothesis in this case is that mean offer is not significantly different from Rs 5 (10 percent of the pie and the minimum amount that the proposer can offer to the responder as suggested by economists). The hypothesis is rejected at 5 percent level of significance (the results are reported in Table 5). Thus we can conclude that people do not behave selfishly as proposed by game theorists.

(2) If people tend to be generous, what is the motive?

In this respect we use the one-tailed z-test of proportions to test the hypothesis that proportion of fair offers is not significantly different from 0.5, i.e., we expect that taste for fairness and fear of rejection figure equally in the proposer behaviour. Again, the hypothesis is rejected at 5 percent level of significance. The results are reported in Table

6. We can further conclude that fairness has a lesser role to play in people's decisions as compared to fear of rejection.

(3) Is there any behavioural difference in bargaining between males and females?

(a) Are females more generous than males?

We apply the test of equality of means (Table 7). The null hypothesis is that both males and females make equal offers on average. The mean test shows that the difference between mean offers is significant at 10 percent level of significance thus indicating that, on average, male proposers offer less than female proposers. This may indicate that females are more generous than males.

In addition we also regress offers made on the gender of the proposer. The detailed results are reported in Table 8. The regression indicates that gender has a significant effect on the mean offer.

The results of the equality of variance test (Table 9) indicate that male offers have a greater variance than that of female offers and that the difference in two variances is significant (low p-values of four out of five tests). Therefore, we can conclude that women deviate from the generous offers less frequently than males.

(b) What is the motive behind female generosity?

In this case we test whether females are generous because they have a greater taste for fairness as compared to men or that they have a greater fear of rejection which causes them to offer generously. Again we use the z-test of proportions to test the hypothesis that proportion of fair offers made by females is equal to that of males. The results (Table 10) indicate that the hypothesis is accepted at 5 percent level of significance. So we cannot conclude that the more generous offers made by females are due to the reason that they are more fairer or that they fear rejection more than the males.

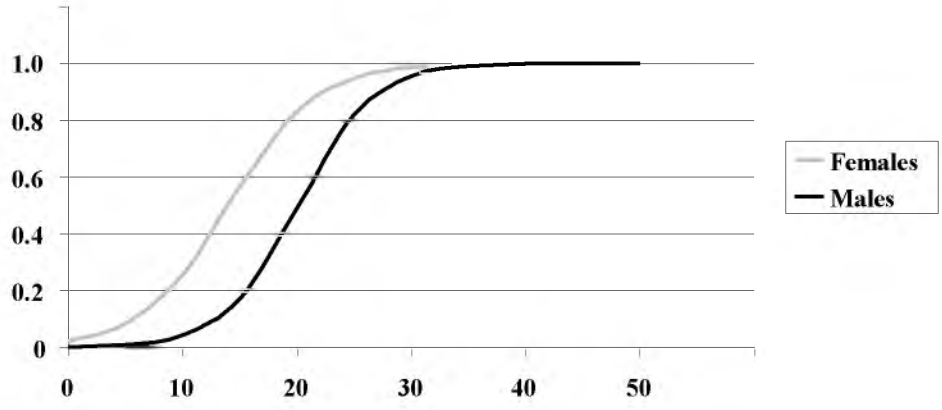
(c) Are females more reciprocal than males?

In this case we fit a Logit model by regressing acceptance rates for males and females on the offers made by each gender respectively. The results (Tables 11 and 12) indicate that, for females, offer has an insignificant effect on rejection/acceptance. On the contrary, for males, offer has a significant effect on rejection/acceptance. In other words, the amount offered significantly explains rejection/acceptance behaviour of male respondents only.

Further, in order to determine gender based differences in behaviour, probabilities of accepting an offer are calculated for each gender (Table 13). The information is also given in Figure 1.

As can be seen from this figure, the probability of females accepting a given offer is greater than that of males for all offers. This indicates that female responders are more likely to accept both unfair and fair offers than males. This result seems to be consistent with the finding that males have a higher rejection rate than females. Also, it is important to note that the probability of female accepting an unfair offer is far greater than males (for example, the chances of a female accepting 10 percent, 20 percent and 30 percent shares are nine, six and three times greater than those for males, respectively).

Fig. 1. Probability of Acceptance for Different Offers



Combining the lower rejection rates and higher acceptance probabilities of females for unfair offers, we can conclude that females are not necessarily more reciprocal than males.

CONCLUSION

The most elementary result, also verified by many other experimental studies, is that people in general are not selfish, at least not to the extent that economists assume. This calls for a serious rethinking by economists, since the existing neoclassical microeconomic theory is firmly based on the assumption of self-interested economic agents.

Secondly, generosity is mainly grounded in fear of rejection rather than any specific preference for fairness. Again this is a replication of previous studies. Further, this fear of rejection is very realistic, particularly, in case of males where the rejection rates for unfair offers are very high.

Lastly, regarding gender differences, we find females to be more generous than males. However, the reason for this greater generosity could not be determined, since there is no significant difference in the degree of fairness or fear of rejection between the two genders. May be economists should look towards psychological motives rather than purely economic motives for the observed differences in behaviour. We also do not find any conclusive evidence that females are more reciprocal than males.

ANNEXURE

Table 1

Offers, Expected MAOs and MAOs for the Entire Group

Game	Expected MAO	MAO	Offer	Game	Expected MAO	MAO	Offer
01	20	15	20	38	25	25	25
02	25	25	30	39	5	20	20
03	25	25	25	40	20	25	20
04	25	25	25	41	20	25	20
05	20	15	20	42	30	35	30
06	20	10	20	43	20	25	25
07	20	25	25	44	15	30	15
08	10	15	15	45	20	30	30
09	20	25	25	46	5	15	10
10	20	25	25	47	5	10	30
11	25	25	30	48	15	35	15
12	15	20	20	49	25	20	25
13	25	25	25	50	5	10	5
14	25	25	25	51	5	25	5
15	20	25	25	52	25	25	25
16	25	5	25	53	30	25	30
17	20	25	25	54	25	25	25
18	25	30	25	55	5	0	20
19	25	25	25	56	15	25	15
20	25	25	25	57	30	20	30
21	25	25	25	58	25	15	25
22	25	25	25	59	25	25	25
23	25	25	25	60	15	20	15
24	20	25	20	61	5	30	10
25	25	25	25	62	30	5	30
26	25	25	25	63	25	25	25
27	25	25	25	64	25	25	25
28	25	25	25	65	25	20	25
29	25	25	25	66	25	25	25
30	25	25	25	67	20	15	20
31	25	25	20	68	30	50	30
32	20	25	25	69	25	25	25
33	20	25	25	70	25	15	25
34	25	20	25	71	30	5	30
35	25	25	25	72	10	25	10
36	25	25	20	73	10	25	15
37	20	50	25				

Table 2

Acceptance / Rejection and Fairness / Fear of Rejection

Game	Offer	Accepted /Rejected	Fairness	Game	Offer	Accepted /Rejected	Fairness
1	20	Accepted	Fear of Rejection	38	25	Accepted	Fear of Rejection
2	30	Accepted	Fair	39	20	Accepted	Fair
3	25	Accepted	Fear of Rejection	40	20	Rejected	Fear of Rejection
4	25	Accepted	Fear of Rejection	41	20	Rejected	Fear of Rejection
5	20	Accepted	Fear of Rejection	42	30	Rejected	Fear of Rejection
6	20	Accepted	Fear of Rejection	43	25	Accepted	Fair
7	25	Accepted	Fair	44	15	Rejected	Fear of Rejection
8	15	Accepted	Fair	45	30	Accepted	Fair
9	25	Accepted	Fair	46	10	Rejected	Fair
10	25	Accepted	Fair	47	30	Accepted	Fair
11	30	Accepted	Fair	48	15	Rejected	Fear of Rejection
12	20	Accepted	Fair	49	25	Accepted	Fear of Rejection
13	25	Accepted	Fear of Rejection	50	5	Rejected	Fear of Rejection
14	25	Accepted	Fear of Rejection	51	5	Rejected	Fear of Rejection
15	25	Accepted	Fair	52	25	Accepted	Fear of Rejection
16	25	Accepted	Fear of Rejection	53	30	Accepted	Fear of Rejection
17	25	Accepted	Fair	54	25	Accepted	Fear of Rejection
18	25	Rejected	Fear of Rejection	55	20	Accepted	Fair
19	25	Accepted	Fear of Rejection	56	15	Rejected	Fear of Rejection
20	25	Accepted	Fear of Rejection	57	30	Accepted	Fear of Rejection
21	25	Accepted	Fear of Rejection	58	25	Accepted	Fear of Rejection
22	25	Accepted	Fear of Rejection	59	25	Accepted	Fear of Rejection
23	25	Accepted	Fear of Rejection	60	15	Rejected	Fear of Rejection
24	20	Rejected	Fear of Rejection	61	10	Rejected	Fair
25	25	Accepted	Fear of Rejection	62	30	Accepted	Fear of Rejection
26	25	Accepted	Fear of Rejection	63	25	Accepted	Fear of Rejection
27	25	Accepted	Fear of Rejection	64	25	Accepted	Fear of Rejection
28	25	Accepted	Fear of Rejection	65	25	Accepted	Fear of Rejection
29	25	Accepted	Fear of Rejection	66	25	Accepted	Fear of Rejection
30	25	Accepted	Fear of Rejection	67	20	Accepted	Fear of Rejection
31	20	Accepted	Fear of Rejection	68	30	Rejected	Fear of Rejection
32	25	Accepted	Fair	69	25	Accepted	Fear of Rejection
33	25	Accepted	Fair	70	25	Accepted	Fear of Rejection
34	25	Accepted	Fear of Rejection	71	30	Accepted	Fear of Rejection
35	25	Accepted	Fear of Rejection	72	10	Rejected	Fear of Rejection
36	20	Rejected	Fear of Rejection	73	15	Rejected	Fair
37	25	Accepted	Fair				

Table 3

Data for Male Participants

Game	Expected MAO	MAO	Offer	Accepted / Rejected	Fairness
1	5	20	20	Accepted	Fair
2	20	25	20	Rejected	Fear of Rejection
3	20	25	20	Rejected	Fear of Rejection
4	30	35	30	Rejected	Fear of Rejection
5	20	25	25	Accepted	Fair
6	15	30	15	Rejected	Fear of Rejection
7	20	30	30	Accepted	Fair
8	5	15	10	Rejected	Fair
9	5	10	30	Accepted	Fair
10	15	35	15	Rejected	Fear of Rejection
11	25	20	25	Accepted	Fear of Rejection
12	5	10	5	Rejected	Fear of Rejection
13	5	25	5	Rejected	Fear of Rejection
14	25	25	25	Accepted	Fear of Rejection
15	30	25	30	Accepted	Fear of Rejection
16	25	25	25	Accepted	Fear of Rejection
17	5	0	20	Accepted	Fair
18	15	25	15	Rejected	Fear of Rejection
19	30	20	30	Accepted	Fear of Rejection
20	25	15	25	Accepted	Fear of Rejection
21	25	25	25	Accepted	Fear of Rejection
22	15	20	15	Rejected	Fear of Rejection
23	5	30	10	Rejected	Fair
24	30	5	30	Accepted	Fear of Rejection
25	25	25	25	Accepted	Fear of Rejection
26	25	25	25	Accepted	Fear of Rejection
27	25	20	25	Accepted	Fear of Rejection
28	25	25	25	Accepted	Fear of Rejection
29	20	15	20	Accepted	Fear of Rejection
30	30	50	30	Rejected	Fear of Rejection
31	25	25	25	Accepted	Fear of Rejection
32	25	15	25	Accepted	Fear of Rejection
33	30	5	30	Accepted	Fear of Rejection
34	10	25	10	Rejected	Fear of Rejection
35	10	25	15	Rejected	Fair

Table 4

Data for Female Participants

Game	Expected MAO	MAO	Offer	Accepted / Rejected	Fairness
1	20	15	20	Accepted	Fear of Rejection
2	25	25	30	Accepted	Fair
3	25	25	25	Accepted	Fear of Rejection
4	25	25	25	Accepted	Fear of Rejection
5	20	15	20	Accepted	Fear of Rejection
6	20	10	20	Accepted	Fear of Rejection
7	20	25	25	Accepted	Fair
8	10	15	15	Accepted	Fair
9	20	25	25	Accepted	Fair
10	20	25	25	Accepted	Fair
11	25	25	30	Accepted	Fair
12	15	20	20	Accepted	Fair
13	25	25	25	Accepted	Fear of Rejection
14	25	25	25	Accepted	Fear of Rejection
15	20	25	25	Accepted	Fair
16	25	5	25	Accepted	Fear of Rejection
17	20	25	25	Accepted	Fair
18	25	30	25	Rejected	Fear of Rejection
19	25	25	25	Accepted	Fear of Rejection
20	25	25	25	Accepted	Fear of Rejection
21	25	25	25	Accepted	Fear of Rejection
22	25	25	25	Accepted	Fear of Rejection
23	25	25	25	Accepted	Fear of Rejection
24	20	25	20	Rejected	Fear of Rejection
25	25	25	25	Accepted	Fear of Rejection
26	25	25	25	Accepted	Fear of Rejection
27	25	25	25	Accepted	Fear of Rejection
28	25	25	25	Accepted	Fear of Rejection
29	25	25	25	Accepted	Fear of Rejection
30	25	25	25	Accepted	Fear of Rejection
31	25	25	20	Accepted	Fear of Rejection
32	20	25	25	Accepted	Fair
33	20	25	25	Accepted	Fair
34	25	20	25	Accepted	Fear of Rejection
35	25	25	25	Accepted	Fear of Rejection
36	25	25	20	Rejected	Fear of Rejection
37	20	50	25	Accepted	Fair
38	25	25	25	Accepted	Fear of Rejection

Table 5

Are Offers Significantly Different from Purely Selfish Offers

Overall Mean Offer	22.88
Hypothesised Value	5
SE	5.65
t-statistic	3.17

Table 6

Test for Equality of Fairness and Fear of Rejection in Decision Making

Overall Fairness	27.40%
Hypothesised Value	50.00%
SE	0.06
Z	-3.86

Table 7

Test for Equality of Means between Genders

Method	df	Value	Probability
t-test	71	1.93	0.0575
Anova F-statistic	(1, 71)	3.73	0.0575

Analysis of Variance

Source of Variation	df	Sum of Sq.	Mean Sq.
Between	1	114.56	114.56
Within	71	2181.34	30.72
Total	72	2295.89	31.89

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
Male	35	21.57	7.45	1.26
Female	38	24.08	2.81	0.46
All	73	22.88	5.65	0.66

Table 8

Regression Results Where Offers are Regressed Over Gender

Dependent Variable: OFFER
Method: Least Squares
Included observations: 73

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.57	0.94	23.02	0.0000
DUMMYMF	2.51	1.30	1.93	0.0575

R-squared	0.05	Mean dependent var	22.88
Adjusted R-squared	0.04	S.D. dependent var	5.65
S.E. of regression	5.54	Akaike info criterion	6.29
Sum squared resid	2181.34	Schwarz criterion	6.35
Log likelihood	-227.58	F-statistic	3.73
Durbin-Watson stat	2.09	Prob(F-statistic)	0.058

Table 9

Test for Equality of Variance between Genders

Method	df	Value	Probability
F-test	(37, 34)	7.02	0.0000
Siegel-Tukey	(1, 71)	0.36	0.5477
Bartlett	1	29.64	0.0000
Levene	(1, 71)	33.68	0.0000
Brown-Forsythe	(1, 71)	16.79	0.0001

Category Statistics

Variable	Count	Std. Dev.	Mean Abs. Mean Diff.	Mean Abs. Median Diff.	Mean Tukey-Siegel Rank
Male	35	7.45	6.20	5.71	35.57
Female	38	2.81	1.98	1.45	38.32
All	73	5.65	4.01	3.49	37.00
Bartlett weighted standard deviation: 5.54					

Table 10

Test for Equality of Proportions between Genders

Female Fairness	0.32
Female Fear of Rejection	0.68
Female Observations	38
Male Fairness	0.23
Male Fear of Rejection	0.77
Male Observations	35
SE	0.1036
Z	0.8422

Table 11

Logit Model Where Acceptance Rates are Regressed Over Offer (Male)

Dependent Variable: Acceptance Male
Method: ML - Binary Logit
Sample: 1 35
Included observations: 35
Convergence achieved after 5 iterations
Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	–6.23	2.23	–2.79	0.0052
Male	0.31	0.10	3.09	0.0020
Mean dependent var	0.60	S.D. dependent var		0.50
S.E. of regression	0.33	Akaike info criterion		0.88
Sum squared resid	3.63	Schwarz criterion		0.97
Log likelihood	–13.44	Hannan-Quinn criter.		0.91
Restr. log likelihood	–23.56	Avg. log likelihood		-0.38
LR statistic (1 df)	20.23	McFadden R-squared		0.43
Probability(LR stat)	6.87E-06			
Obs with Dep=0	14	Total obs		35
Obs with Dep=1	21			

Table 12

Logit Model Where Acceptance Rates are Regressed Over Offer (Female)

Dependent Variable: Acceptance Female
Method: ML - Binary Logit
Sample: 1 38
Included observations: 38
Convergence achieved after 4 iterations
Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	–3.76	4.15	–0.91	0.3642
FEMALE	0.27	0.18	1.46	0.1455
Mean dependent var	0.92	S.D. dependent var		0.27
S.E. of regression	0.27	Akaike info criterion		0.60
Sum squared resid	2.69	Schwarz criterion		0.69
Log likelihood	–9.47	Hannan-Quinn criter.		0.63
Restr. log likelihood	–10.50	Avg. log likelihood		-0.25
LR statistic (1 df)	2.05	McFadden R-squared		0.10
Probability(LR stat)	0.151839			
Obs with Dep=0	3	Total obs		38
Obs with Dep=1	35			

Table 13

Probabilities for Males and Females of Accepting an Offer

Offer	Males	Females
0	0.0020	0.0227
5	0.0092	0.0817
10	0.0422	0.2546
15	0.1721	0.5672
20	0.4952	0.8341
25	0.8224	0.9507
30	0.9563	0.9867
35	0.9904	0.9965
40	0.9980	0.9991
45	0.9996	0.9998
50	0.9999	0.9999

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