Gender Composition and Investment in Public Goods

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Previous literature has obtained contradictory results concerning gender differences in economic experiments. Some studies have shown that women are more cooperative than men (Seguino, Stevens, & Lutz, 1996) (Croson, Marks, & Snyder, 2008) while others have shown no significant differences (Cadsby & Maynes, 1998) (Andreoni & Petrie, 2008). We examine how gender composition affects individuals' decisions on investment in Public goods. Our evidence shows that men are more generous than women and that group contribution is greater when men are in majority.

1. Introduction

Previous researchers have obtained substantial documentation that free riding in public goods experiments leads to significant underinvestment in the public good (Ledyard, 1995). One of interesting questions regarding public goods research is that what factors affect individuals' contribution. Some researchers have examined the possibility that the gender of participants might influence experimental outcomes. A number of previous experiments have explored gender differences in public goods provision. For example, (Brown-Kruse & Hummels, 1993) find that males contribute significantly more than females. This result is replicated in (Cadsby & Maynes, 1998). On the other hand, researchers find that women play an important role in promoting social welfare and reduce underinvestment in public goods (Nowell & Tinkler, 1994). More evidence is found in later studies. (Andreoni & Vesterlund, 2001) argue that women are likely to be "equalitarian" who prefer to share evenly. Using a dictator game, (Dufwenberg & Muren, 2006) show that female presence in a group increases group level altruism and promotes social equality. However, (Sell, Griffith , & Wilson, 1993), (Andreoni & Petrie, 2008) find no significant differences between men and women' contribution towards public goods. Finally, (Chermak & Krause, 2002) examine the effect of gender in a different public goods game, one modeling common pool resources. They find that gender matters when individuals know the roles they are to play. In those treatments women are more generous than men. However, when individuals do not know their roles, there are no gender differences. (Solow & Kirkwood, 2002) suggest that the effects of group identity and gender on behavior are complicated. In particular, the claim that women are less likely to free-ride on others with whom they have a relationship is not supported.

Using a public goods provision game, this paper re-examines the association between gender composition and group output. Our finding is somewhat contradictory to the existing literature, in that women are more generous than men and women's presence enhance group welfare. Specifically, we find that men exhibit higher degree of cooperation and that groups are more generous when men are in majority. The rest of the paper is organized as follows: Section 2 presents the experimental design; Section 3 describe results; and Section 4 concludes.

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2. Experimental Design

We invite students to play a simple public goods provision game, in that each subject is provided an endowment and is required to decide how much of her endowment to contribute to public goods. The game is divided into three parts, each part is a treatment, consisting of 10 periods. We implement a within-subject design with each treatment. Specifically, a subject is assigned to a different gender-composition group in each part. Except for the gender composition, game rules are the same throughout the experiment.

This experiment consists of two groups of students, one from the Walton College of Business and the other from the College of Engineering of the University of Arkansas. The experimental subjects are informed that they are invited to participate in a public goods game that is framed as "Group Composition and Social Contribution".

Our experiment consists of two sessions. Session 1 and session 2 are the same except that the order of treatment is different. This design is to mitigate the ordering effect imbedded in within group design. In each session, we have 8 subjects: four females and four males. In each treatment, we form two groups of four participants. The two groups play the same public goods game separately. Each game lasts for 10 periods. In each period, a subject's payoff is based on the contribution made by him/herself and the contributions made by other three group participants. The total payoff in this experiment will be the total amount of token he/she earns plus the show-up fees.

Subjects are randomly assigned to a number, ranging from 1 to 8 before the game begins. Women subjects are assigned with an odd number, while men subjects are assigned with an even number. We use Z-tree program to design the game and participants play the game using lab computers. The session order and group composition information in each treatment are detailed in Table 1.

Our final sample consists of 480 observations for 16 participants, 8 women subjects and 8 men subjects. Given evidence in this line of literature, we expect that female subjects, on average, contribute more than male subjects and that women subjects have positive impact on the average contribution of male subjects. By explicitly informing participants when will be the end of the game, we expect that the ending effect is pronounced for male participants but has little or no impact on women.

3. Results

3.1 Summary of Statistics

Table 2 presents the distribution of individuals' contributions by gender, across different treatment groups in session 1. Table 3 presents the distribution of individuals' contributions by gender, across different treatment groups in session 2. We acknowledge that there might be a potential bias rising from an error that we mistakenly assign a female subject into a group with four male subjects in our gender homogenous treatment. The female subject, however, is informed that she is teamed with other three female subjects. This error results in a group of 3 female subjects and a group of 1 female subject and 4 male subjects. Because an individual's payout is positively associated with the number of subjects in the group, a large average contribution from the smaller group does not lead to large average pay out. In this case, the dominant strategy is to retain all the endowment, leading to smaller average group contribution.

The sample distribution of women subjects' contributions in session 1 is remarkedly different from that in session 2. For example, the average contributions of women subjects in gender balanced groups and in gender homogenous group from session 1 are 10.90 and 12.57, while the average contribution of men subjects in matched sub-group from session 2 are 4.2 and 4.0. women subjects from session 1 contribute significantly lower than women subjects in session 2.

Table 4 reports the distribution of individuals' contributions by gender, across different treatment groups, combining data from session 1 and session 2. On aggregate level, men subjects, on average, contribute more than women subjects, exhibiting higher degree of cooperation and greater generosity. The group whose subjects are all men contribute the most, while groups whose subjects are all women contribute the least.

Sorting our data from session 1 and session 2 by gender composition and then by gender, we compare the mean difference in contribution between men subjects and women subjects. Table 5 confirms that men subjects contribute significantly more than women subjects.

Figure 1 and Figure 2 display subjects' contributions in each period by gender and by each treatment for session 1 and session 2, respectively. Overall, both women subjects and men subjects decrease their contributions near the end of the game. This evidence is consistent with prior literature that subjects are less incentivized to cooperate towards the end of the game, suggesting iterated game is beneficial to cooperation as subjects are concerned with potential punishment. Figure 1b and Figure 2b show that men subjects are more risk taking and proactively sending signals seeking cooperation to other women subjects, by contributing all the endowment. When the signal is not received well by women subjects, men subjects tend to assign zero contribution in the following periods as a punishment.

3.2 Regression analysis

In this section, we formally test the gender difference in investment on public good and examine how the gender composition affects group average contribution. To test the gender difference on contribution, we employ the following OLS regression model:

$$perCon_{it} = \alpha + Female_{it}\beta_1 + genCom_{it}\beta_2 + Perc_{female} * female\beta_3 + session1_t\beta_4 + \varepsilon_{it} \quad (1)$$

The dependent variable, perCon, is the contribution of subject i. Female is a dummy variable that equals one if the subject is a woman and zero otherwise. $genCom$ includes two dummy variables, gender imbalanced group and gender homogenous group. Gender imbalanced group equals one if the subject is in a gender imbalanced group; gender homogenous group is a dummy variable that equals one if subject is in a gender homogenous group. $perc\_Female$ is the percentage of female subjects in the group. The sample includes data from session 1 and session 2. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

Table 6 presents the results from the OLS regression model. Column (1) of Table 6 shows that men subjects are more generous than women subjects. Specifically, we find that men, on average, contribute 5.21 ECUs more than women subjects. Column (2) of Table 6 indicates that gender composition has negative impact on contribution but is not statistically significant. We interpret this result as (1) men are more sensitive to monetary incentives and are prone to cooperate to maximize own profit (2) information asymmetry proxied by the proportion of opposite gender presence in the group leads to underinvestment in public goods provision.

4. Conclusion

To conclude, we find evidence that men are more sensitive to monetary incentives, resulting in more cooperation and investment in public goods. This finding is consistent with prior literature, in that men are more risk taking than women. We also show that information asymmetry can cause severe under-investment problem. In our project, both men and women subjects contribute less than they are in a less predictable gender composition group, gender balanced group. Lastly, we find strong but puzzling evidence that groups are more generous and cooperative when men are in majority.

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Appendix A: Tables and Figures

Table 1: Treatment and Group Composition

Table 1 reports the order of the treatment in each session as well as the group composition and assignment in each treatment. We randomly assign even numbers to men subjects and odd numbers to women subjects. Due to an unexpected error, a woman subject, subject 1, is assigned to a group of 4 men subjects in the first treatment in session 1. That woman subject, however, was informed that she is assigned to a group with other three women subjects.

Session	Treatment	Group	Group Composition (participants' ID)
Session 1	Treatment 1 (Gender Homogeneous Groups)	Group 1	four females (3, 5, 7)
		Group 2	four males (1*, 2, 4, 6, 8)
	Treatment 2 (Gender Balanced Groups)	Group 3	two females and two males (1, 7, 2, 8)
		Group 4	two females and two males (3, 5, 4, 6)
	Treatment 3 (Gender imbalanced Groups)	Group 5	one female and three males (8, 1, 3, 7)
		Group 6	one male and three females (5, 2, 4, 6)
Session 2	Treatment 3 (Gender imbalanced Groups)	Group 7	one female and three males (1, 3, 7, 8)
		Group 8	one male and three females (5, 2, 4, 6)
	Treatment 2 (Gender Balanced Groups)	Group 9	two females and two males (1, 7, 2, 8)
		Group 10	two females and two males (3, 5, 4, 6)
	Treatment 1 (Gender Homogeneous Groups)	Group 11	four females (1, 3, 5, 7)
		Group 12	four males (2, 4, 6, 8)

* subject 1 is mistakenly assigned to group 2 with other four male subjects. However, she is informed that she plays with other three women subjects. This error makes two groups with uneven number of subjects.

Table 2: The distribution of individuals' contribution across different gender composition group in session 1

Table 2 presents the distribution of individuals' contributions by gender, across different treatment groups, in session 1. Panel A of Table 2 presents the distribution of individuals contributions for gender imbalanced groups including a group with 3 men subjects and 1 woman subjects and 3 women subjects and 1 man subject; Panel B of Table 2 presents the distribution of individuals contributions for gender balanced groups including two groups of 2 men subjects and 2 women subjects; Panel C of Table 2 presents the distribution of individuals contributions for gender homogenous groups including a group with 4 men subjects and a group with 4 women subjects. Men majority indicates the statistics are summarized in the group with 3 men subjects and 1 woman subject. Men Majority indicates it is the group of 3 men and 1 women subjects. Women Majority indicates that it is the group of 3 women and 1 men subjects.

		Mean	SD	25th Percentile	Median	75th Percentile	N
Panel A: The distribution of contributions in gender imbalanced groups, by gender							
Men Majority	Male	15.13	6.40	10.00	15.00	20.00	30
	Female	17.00	2.58	15.00	15.00	20.00	10
	Sub-total	15.60	5.71	10.00	15.00	20.00	40

	Male	12.50	12.21	1.00	10.50	25.00	10
Women Majority	Female	8.00	10.25	0.00	1.00	20.00	30
	Sub-total	9.13	10.79	0.00	1.00	22.00	40
Panel B: The distribution of contributions in gender balanced groups, by gender							
Gender Balanced	Male	10.80	6.69	5.00	10.00	15.00	40
	Female	10.90	6.76	5.00	10.00	15.00	40
	Total	10.85	6.68	5.00	10.00	15.00	80
Panel C: The distribution of contributions in gender homogeneous groups, by gender							
Male Group	Male	13.18	6.89	8.00	13.50	19.50	40
Female Group	Female	12.57	7.59	5.00	15.00	20.00	40
	Total	12.88	7.21	6.50	15.00	20.00	80

Table 3: The distribution of individuals' contribution across different gender composition group in session 2

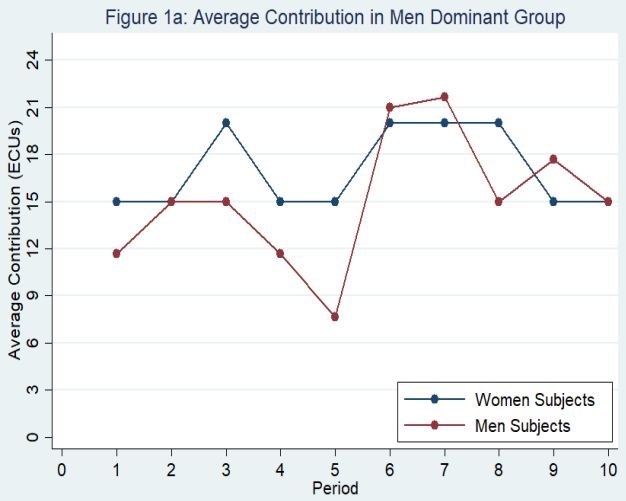
Table 2 presents the distribution of individuals' contributions by gender, across different treatment groups, in session 2. Panel A of Table 3presents the distribution of individuals contributions for gender imbalanced groups including a group with 3 men subjects and 1 woman subjects and 3 women subjects and 1 man subject; Panel B of Table 3 presents the distribution of individuals contributions for gender balanced groups including two groups of 3 men subjects and 2 women subjects; Panel C of Table 3 presents the distribution of individuals contributions for gender homogenous groups including a group with 4 men subjects and a group with 4 women subjects. Men majority indicates the statistics are summarized in the group with 3 men subjects and 1 woman subject. Men Majority indicates it is the group of 3 men and 1 women subjects. Women Majority indicates that it is the group of 3 women and 1 men subjects.

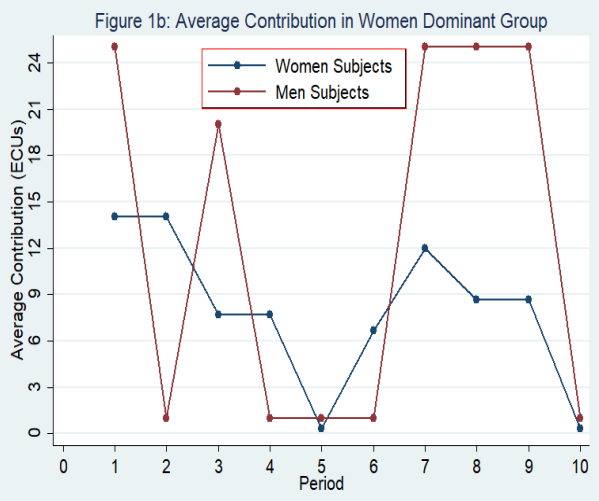
		Mean	SD	25th Percentile	Median	75th Percentile	N
Panel A: The distribution of contributions in gender imbalanced groups, by gender							
	Male	17.50	6.11	10.00	20.00	23.00	30
Men Majority	Female	20.30	3.09	18.00	20.00	22.00	10
	Sub-total	18.20	5.61	12.50	20.00	22.50	40
	Male	10.50	11.89	0.00	5.00	25.00	10
Women Majority	Female	10.00	9.19	1.00	7.50	20.00	30
	Sub-total	10.13	9.77	1.00	7.50	20.00	40
Panel B: The distribution of contributions in gender balanced groups, by gender							
Gender Balanced	Male	14.05	7.90	5.00	16.50	20.00	40
	Female	4.20	7.35	0.00	1.00	4.00	40
	Total	9.13	9.06	0.00	5.00	20.00	80
Panel C: The distribution of contributions in gender homogeneous groups, by gender							
Male Group	Male	20.52	4.14	20.00	20.00	22.00	40
Female Group	Female	4.00	5.65	0.00	3.00	5.00	40
	Total	12.26	9.66	2.50	16.00	20.00	80

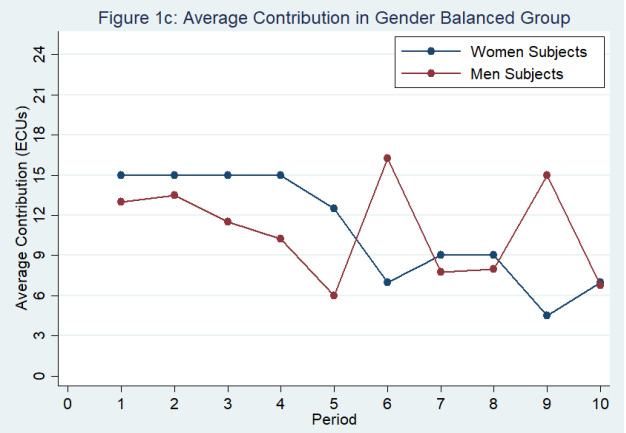
Table 4: The distribution of individuals' contribution across different gender composition group in session 2

Table 4 presents the distribution of individuals' contributions by gender, across different treatment groups. Table 4 combines data from session 1 and session 2. Panel A of Table 4 presents the distribution of individuals contributions for gender imbalanced groups including a group with 3 men subjects and 1 woman subjects and 3 women subjects and 1 man subject; Panel B of Table 4 presents the distribution of individuals contributions for gender balanced groups including two groups of 2 men subjects and 2 women subjects; Panel C of Table 4 presents the distribution of individuals contributions for gender homogenous groups including a group with 4 men subjects and a group with 4 women subjects. Men majority indicates the statistics are summarized in the group with 3 men subjects and 1 woman subject. Men Majority indicates it is the group of 3 men and 1 women subjects. Women Majority indicates that it is the group of 3 women and 1 men subjects.

		Mean	SD	25th Percentile	Median	75th Percentile	N
Panel A: The distribution of contributions in gender imbalanced groups, by gender							
Men Majority	Male	16.32	6.32	10.00	17.50	22.00	60
	Female	18.65	3.25	15.00	20.00	20.00	20
	Sub-total	16.90	5.78	10.00	20.00	20.00	80
Women Majority	Male	11.50	11.78	0.50	5.50	25.00	20
	Female	9.00	9.70	1.00	3.50	20.00	60
	Sub-total	9.63	10.24	1.00	3.50	20.50	80
Panel B: The distribution of contributions in gender balanced groups, by gender							
Gender Balanced	Male	12.43	7.46	5.00	15.00	20.00	80
	Female	7.55	7.78	1.00	5.00	15.00	80
	Total	9.99	7.98	1.00	10.00	16.50	160
Panel C: The distribution of contributions in gender homogeneous groups, by gender							
Male Group	Male	16.85	6.75	11.00	20.00	20.00	80
Female Group	Female	8.29	7.92	1.00	5.00	15.00	80
	Total	12.57	8.50	5.00	15.00	20.00	160







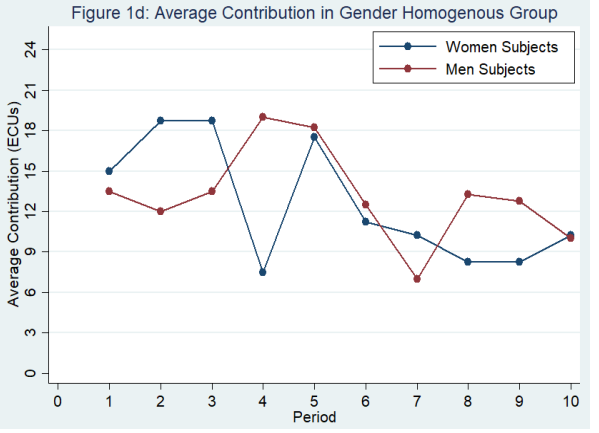


Figure 1

This figure displays the average contributions against period within each treatment group in session 1. Specifically, figure 1a displays the average contribution of men subjects and women subjects in the men dominant group of three men subjects and one women subject; figure 1b display the average contribution of subjects in the women dominant group of three women and one man subject; figure 1c displays the average contribution of subjects in the gender balanced groups; figure 1d displays the average contribution of subjects in the gender homogenous groups with one of all men subjects and with one of all women subjects.

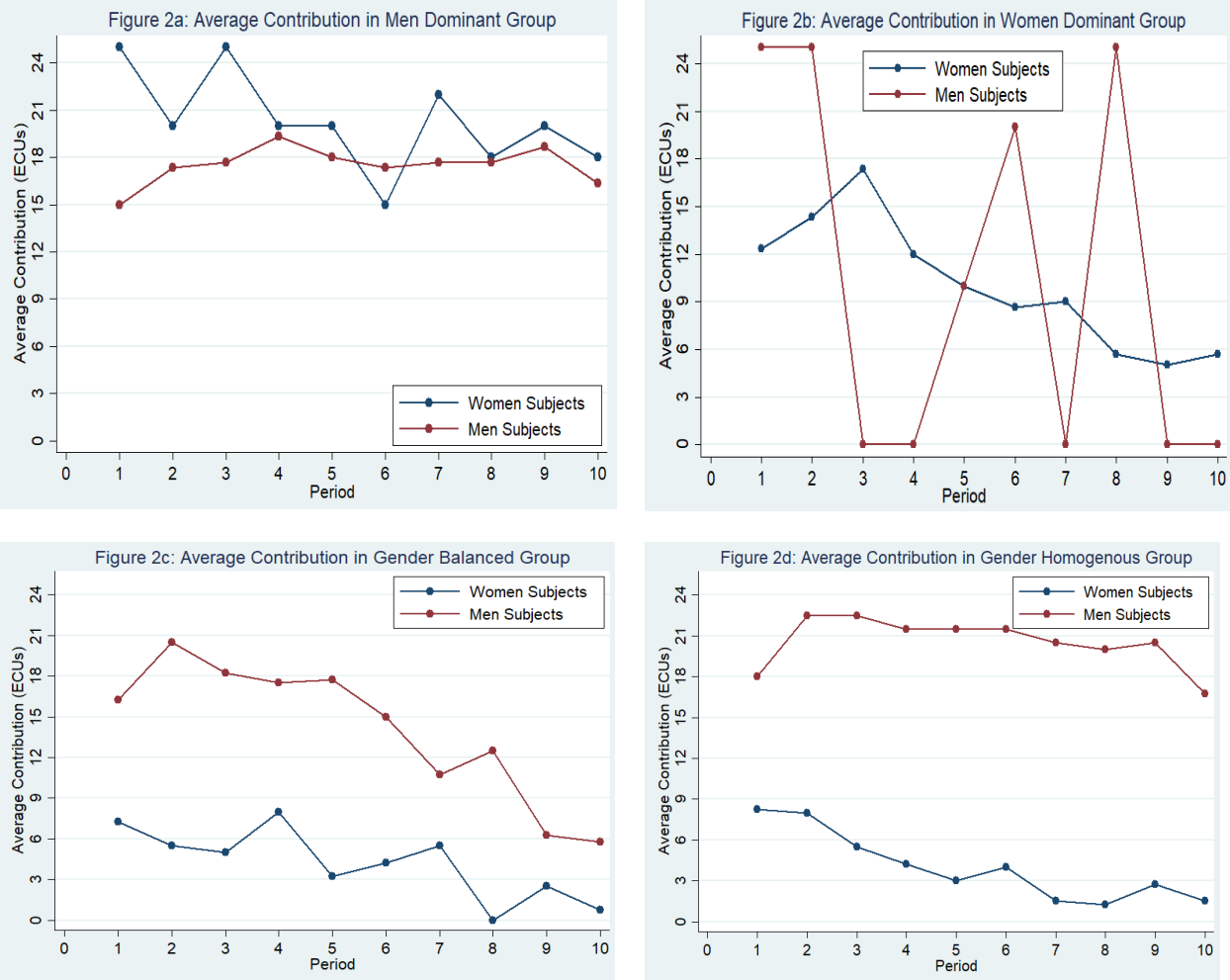
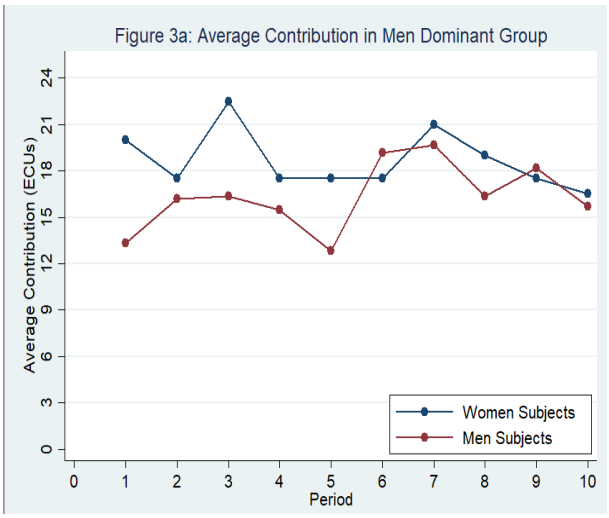
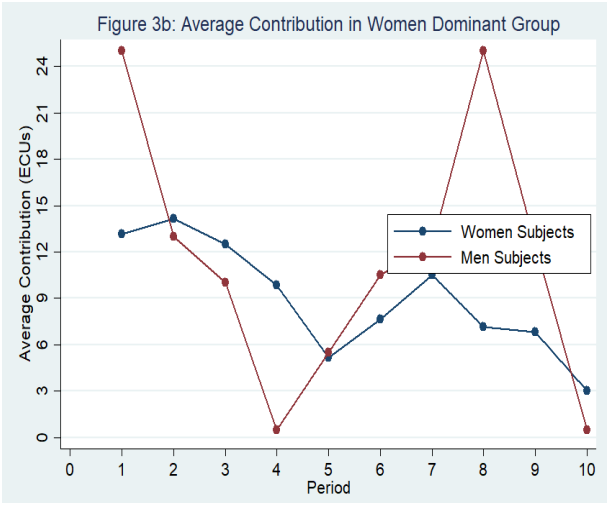
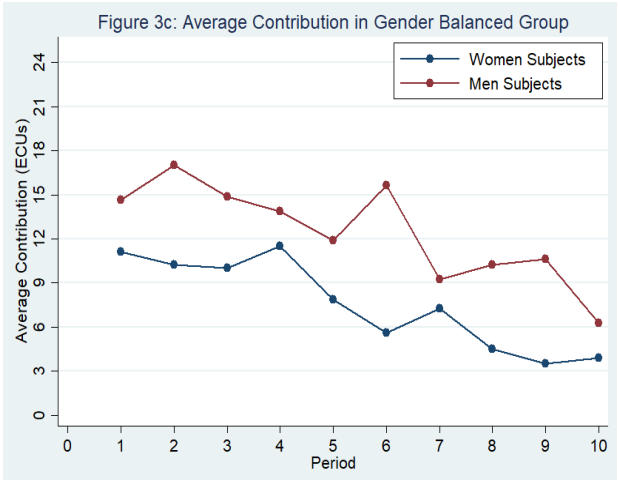


Figure 2

This figure displays the average contributions against period within each treatment group in session 2. Specifically, figure 1a displays the average contribution of men subjects and women subjects in the men dominant group of three men subjects and one women subject; figure 2b display the average contribution of subjects in the women dominant group of three women and one man subject; figure 2c displays the average contribution of subjects in the gender balanced groups; figure 2d displays the average contribution of subjects in the gender homogenous groups with one of all men subjects and with one of all women subjects.







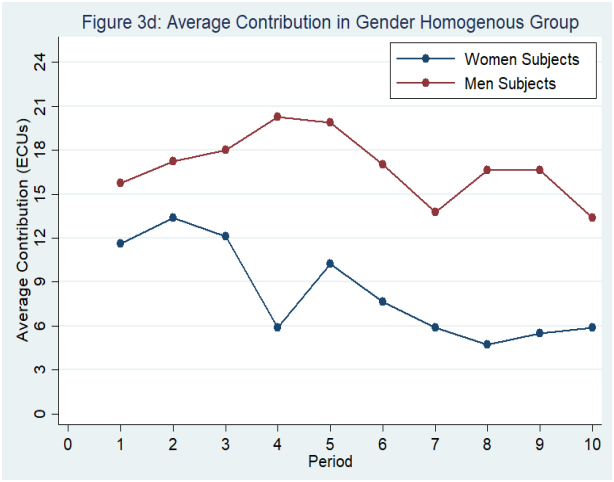


Figure 3

This figure displays the aggregate average contributions against period within each treatment group, aggregating data for both session 1 and session 2. Specifically, figure 3a displays the aggregate average contribution of men subjects and women subjects in the men dominant group of three men subjects and one women subject; figure 3b display the aggregate average contribution of subjects in the women dominant group of three women and one man subject; figure 3c displays the aggregate average contribution of subjects in the gender balanced groups; figure 3d displays the aggregate average contribution of subjects in the gender homogenous groups with one of all men subjects and with one of all women subjects.

Table 5: The difference in contribution between men and women across different gender composition group

	(1)	(2)	(3)	(4)
	Mean (Female)	Mean (Male)	Diff (Female Male)	Num of Obs
Women in majority	18.65	16.32	2.33**	80
Men in majority	9.00	11.50	-2.50	80
Balanced	7.55	12.43	-4.88***	160
Homogenous	8.29	16.85	-8.56***	160

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5 reports the Wald test results for the difference in average contribution between men and women across each gender composition group. Women in majority is the group that has three women subjects and one man subject, Men in majority is the group that has three men subjects and one women subject. The balanced group is when the number of men subjects equal to that of women subjects. Homogeneous represents two groups: one are all men group and another is all women group. Column (1) represents the average contribution of women subjects across four gender composition group. Column (2) represents the average contribution of men subjects across four gender composition group. Column (3) represents the difference between the average contribution of men subjects and that of women subjects across four different gender compositions. Column (4) reports the num of observations across each gender composition group. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

Table 6: The impact of gender and gender composition on subjects' contribution

	(1) Contribution b/t	(2) Contribution b/t	(3) Contribution b/t	(4) Contribution b/t	(5) Contribution b/t
female	-5.7125***	-5.7125***	-5.5618***	-6.9765***	-6.9765***
	(-7.685)	(-7.787)	(-6.893)	(-4.690)	(-4.686)
treatment1		3.2750***			
		(3.645)			
treatment3		2.5813***			
		(2.873)			
per_female			-0.6029	-2.0176	-2.0176
			(-0.482)	(-1.142)	(-1.141)
female_per_female				2.8294	2.8294
				(1.132)	(1.131)
session1					-0.1792
					(-0.241)
constant	14.7958***	12.8438***	15.0219***	15.5525***	15.6420***
	(28.150)	(17.508)	(21.320)	(18.383)	(16.909)
R-square	0.110	0.137	0.110	0.113	0.113
Num of Obs	480	480	480	480	480

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

This table reports the coefficients of the regression model:

$$perCon_{it} = \alpha + Female_{it}\beta_1 + genCom_{it}\beta_2 + Perc_{female} + Perc_{female} * female\beta_3 + session1_t\beta_4 + \varepsilon_{it}$$

The dependent variable, perCon, is the contribution of subject i. Female is a dummy variable that equals one if the subject is a woman and zero otherwise. $genCom$ includes two dummy variables, gender imbalanced group and gender homogenous group. Gender imbalanced group equals one if the subject is in a gender imbalanced group; gender homogenous group is a dummy variable that equals one if subject is in a gender homogenous group. $perc\_Female$ is the percentage of female subjects in the group. The sample includes data from session 1 and session 2. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

Appendix B: Instruction

Instructions for Part 1

You are about to participate in a decision-making process in which you will play games with other participants in this room. What you earn depends partly on your decisions, and partly on the decisions of others. This experiment consists of three parts with 8 participants. In each part, eight participants will be assigned to two groups with each group of four individuals.
Throughout the experiment, you will not learn who exactly you are playing with. However, gender composition is provided in the beginning of each treatment with a text box.
As you came in you drew an index card [in a white envelope] with a number on it. The number ranges from 1 to 8. This randomly assigned number, is your ID number used in this experiment to ensure anonymity of your decisions.
Please turn off cellular phones now. We ask that you do not talk to each other during the experiment. If you have a question, please raise your hand and an experimenter will assist you.
Your earnings are given in Experimental Currency Units (ECUs). Everyone is now given **400** ECUs. Your total earnings in this experiment will be the total amount of ECUs you earn plus these **400** ECUs. At the end of the experiment you will be paid in private and in cash based on the following exchange rate:

$1 = 80 ECUs

The session has 3 parts and there are 10 periods for each part.
Please open the white envelope and pull out the contents. The number ranges from 1 to 8. The number represents the group that you are assigned to. Your seat number should be as the same as the one you draw. If you are not sitting in front of the right computer. Please raise your hand. The system will assign you with other three individuals into a group according the number you draw. Please note that you will remain in the same group throughout part 1 but will be re-grouped in the part 2 and part 3.
Please raise your hand if you have any questions about this step.

Part 1 (Periods 1 - 10):

Decisions and Period Earnings
At the beginning of each period each participant will receive 25 ECUs called **endowment**. Each participant will need to decide how much to contribute to a project and how much to keep for herself/himself. The amount contributed and the amount kept must be integers between 0 and 25 (including 0 and 25) and add up to 25.
For each ECU a participant keeps, he/she earns 1 ECU. For each ECU contributed to the project, every participant in this room (including the person who contributes it) will earn 0.5 ECUs. That is, every ECU you contribute to the project will bring you 0.5 ECUs and everybody else in this room 0.5 ECUs, therefore this leads to a total of 0.5*4=2.0 ECUs per 1 ECU contributed. Similarly, if someone else contributes 1 ECU to the project, you and everyone else in this room will earn 0.5 ECUs per person.
Your earnings in each period are calculated as:
ECUs you keep for yourself + 0.5*(total contributions by all participants in your group).
Example: Now suppose you contribute 20 ECUs to the project and other participants contribute 60 ECUS in total. Then the total contributions to the project are 80 ECUs. Therefore, you will earn
(25 – 20) +0.5*(20 + 60) = 5 + 0.5*80 = 45 ECUs
Once the contribution decision is submitted, it can no longer be revised. At the end of each period after all the participants submit their decisions, you will be informed about the total contributions by each of the participants, including your earnings, in that period.
The decisions made by other participants will affect your earnings. Gender composition is provided to you in the beginning of each part.
If you have any questions, please raise your hand.

Instructions for Part 2

Part 2 (Periods 11 - 20):

The system will assign you with other three individuals into a group according to your seat number which should be the same as the number you draw. Please note that you will remain in the same group throughout part 2 (10 periods) but will be re-grouped into a different group in part 3.
Please raise your hand if you have any questions about this step.

Instructions for periods 11 to 20 are the same as those during the first ten periods. That is, everyone will receive 25 ECUs at the beginning of each period and need to decide how much to contribute to the project and how much to keep privately. Your earnings in each period are calculated as:

ECUs you keep for yourself + 0.5*(total contributions by all participants in your group).

Example: Now suppose you contribute 20 ECUs to the project and other participants contribute 60 ECUS in total. Then the total contributions to the project are 80 ECUs. Therefore, you will earn
(25 – 20) +0.5*(20 + 60) = 5 + 0.5*80 = 45 ECUs
At the end of each period after all the participants submit their decisions, you will be informed again about the total amount of contributions to the project by all the participants and your earnings in that period.
The decisions made by other participants will affect your earnings. Gender composition is provided to you in the beginning of each part.
If you have any questions, please raise your hand.

Instructions for Part 3

Part 3 (Periods 21 - 30):
The system will assign you with other three individuals into a group according to your seat number which should be the same as the number you draw. Please note that you will remain in the same group throughout part 3 (10 periods).
Please raise your hand if you have any questions about this step.

Instructions for periods 21 to 30 are the same as those during the first ten periods. That is, everyone will receive 25 ECUs at the beginning of each period and need to decide how much to contribute to the project and how much to keep privately. Your earnings in each period are calculated as:

ECUs you keep for yourself + 0.5*(total contributions by all participants in your group).

Example: Now suppose you contribute 20 ECUs to the project and other participants contribute 60 ECUS in total. Then the total contributions to the project are 80 ECUs. Therefore, you will earn
(25 – 20) +0.5*(20 + 60) = 5 + 0.5*80 = 45 ECUs
At the end of each period after all the participants submit their decisions, you will be informed again about the total amount of contributions to the project by all the participants and your earnings in that period.
The decisions made by other participants will affect your earnings. Gender composition is provided to you in the beginning of each part.
If you have any questions, please raise your hand.

At the end of the experiment (after the 30th period), you will be asked to complete a short questionnaire. Thank you for participating in our experiment!