

Gender composition in teams

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Abstract

How does gender composition influence team decisions? Our evidence from a group dictator game is: (i) groups are more generous and equalitarian when women are in majority, but (ii) the most generous groups are those with two men and one woman.

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1. Introduction

Does the presence of women, or the relative balance of women and men, on a decision-making committee matters for its decisions? Very little research seems to have been done on this topic.² Yet recent experimental research suggests that men and women often make different decisions,³ and that groups and individuals often make different decisions.⁴ The combination of these results gives reason to believe that gender composition matters for group decisions.

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² Studies on gender and entrepreneurship, for example, appear to focus on individual traits rather than group composition. See Sonfield et al. (2001) for a survey.

³ For example, Eckel and Grossman (1998) find that women are more generous, Andreoni and Vesterlund (2001) find that women are more equalitarian, and Gneezy et al. (2003) and Gneezy and Rustichini (2004) find that competition increases the performance of men relative to women (and this result may depend on the gender composition of the competing group).

⁴ See for example Cason and Mui (1997) and Bornstein and Yaniv (1998).

Against this background, we report experimental results for a very simple context: a version of Cason and Mui's (1997) team dictator game. Groups of three people divide a sum of money between themselves and a fourth person. Gender composition differs across groups, and we explore how this influences decisions.⁵

2. The experiment

2.1. Design⁶

Two sessions (I and II) were held at Stockholm University as part of an economics class for prospective teachers. Participants wrote their first names on separate slips of paper that were collected. One or two (depending on session) were drawn at random and the name(s) copied onto a separate paper that was put in a sealed envelope.

All original slips were arranged into groups of three, and each group was assigned a number. The group members were asked to sit together and given 5–10 min to propose a split of the sum of 1000 kr (\approx US\$ 110, at the time of the experiment) between the group and the pre-selected person whose identity was documented in the sealed envelope. It was made clear that money allocated to the group would be divided equally between its members. The instructions explained that one (two in Session II) group(s) would be randomly selected to receive their self-determined share in cash, the rest going to the pre-selected recipient(s).

2.2. Hypotheses

Following the work on gender differences for single decision makers by, respectively, Eckel and Grossman (1998) and Andreoni and Vesterlund (2001), the hypotheses we test relate to generosity (how much is given) and equalitarianism (making a donation of exactly 250 kr). If there are differences between female-majority and male-majority groups, we should be able to reject one or both of the following hypotheses:

H₁. Female majority groups and male-majority groups make the same donations.

H₁^{*}. Female majority groups and male-majority groups give 250 kr equally often.

We also compare groups with different gender composition, focusing on three cases: all-female versus groups with two women, groups with two women versus groups with one woman, and groups with one woman versus all-male groups. The associated hypotheses are

H₂. Groups make the same donations in pair-wise comparisons when the number of women is increased by one.

H₂^{*}. Groups give 250 kr equally often in pair-wise comparisons when the number of women is increased by one.

⁵ Cason and Mui have some results, which are precursory to ours. They compare behavior in team dictator and standard dictator games. In the process, they record data on and some results about gender composition although that is not their main focus. They also restrict attention to groups of two whereas we have groups of three so that we can say something about the difference between unisex groups and groups that are not unisex but still have a strict majority of persons of a given sex.

⁶ Dufwenberg and Muren (2004), includes a more detailed version of this section, as well as experimental instructions. Go to http://econ.eller.arizona.edu/downloads/working_papers/Econ-WP-04-08.pdf.

Table 1
Number of donations at each sum for all groups

	0 kr	1 kr	10 kr	100 kr	250 kr	300 kr	400 kr	1000 kr
Number of groups	3	6	2	10	30	1	1	3

Table 2
Mean (median) donations for FFF + FFM and FMM + MMM groups

FFF+FFM	225 (250)
FMM+MMM	203 (100)

Table 3
Relative number of equalitarian donations for FFF + FFM and FMM + MMM

FFF + FFM	25/38
FMM + MMM	5/18

2.3. Results

One hundred and sixty-eight persons, comprising 56 groups, participated. Session I had 63 participants (21 groups); Session II had 105 participants (35 groups). In Session I seven of the students elected not to participate; in Session II all present at the lecture participated. We found no session effect on donations,⁷ and thus look at data from all 56 groups. We use the following notation for the four possible gender-compositions: FFF = all-female; FFM = 2 women and 1 man; FMM = 1 woman and 2 men; MMM = 3 men.

The number of groups for each group type are 26 FFF, 12 FFM, 10 FMM, and 8 MMM.

Table 1 shows the distribution of donated amounts. It is remarkable that the data is distributed over *exactly eight* different amounts, although groups could pick any integer between 0 and 1000.⁸

The overall mean donation is 218 kr; the median is 250 kr. Table 2 shows means and medians when the data is partitioned into female-/male-majority groups. We find that female-majority groups donate more. H_1 is rejected (P -value 0.03).⁹

Moving to equalitarianism and H_1^* , we first note that 30 out of the 56 groups donated 250 kr. Table 3 breaks this down on female-/male-majority groups. The equalitarian donation is particularly frequent with a female majority and the difference is highly significant (P -value 0.008).¹⁰ H_1^* is rejected.

Next we consider H_2 . Table 4 shows means and medians of donated amounts. Our result that female majority groups are more generous suggests that donations may increase in pair-wise comparisons as the number of women is increased by one: FMM versus MMM, FFM versus FMM, and FFF versus FFM. The differences between the FFF and FFM groups and the FFM and FMM groups are significant (P -values 0.04 and 0.03), while the difference between the FMM and MMM groups is not (P -value 0.68).

⁷ $P = 0.82$ in a Kolmogorov–Smirnov test; $P = 0.40$ in a Wilcoxon–Mann–Whitney test.

⁸ The amounts 1, 10, 100, 250, 400, and 1000 share the characteristic that remainders are divisible by 3.

⁹ Two-sided Wilcoxon–Mann–Whitney tests are used when comparing donated amounts.

¹⁰ Two-sided tests for equality of proportions (the *prtest* in Stata) are used when comparing proportions.

Table 4
Mean (median) donations for each gender composition

FFF	189 (250)
FFM	304 (250)
FMM	195 (100)
MMM	334 (100)

Table 5
Number of equalitarian donations relative to total number per group type

FFF	16/26
FFM	9/12
FMM	3/10
MMM	2/8

The difference between the FFF and FFM groups actually goes in the *opposite* direction from what our first result may seem to suggest about generosity and the number of women. Two women and one man is the most generous gender composition!

Moving to H_2^* , the relative numbers of equalitarian donations appear in Table 5. The FFM versus FMM test delivers a significant result (P -value 0.03), which neither the FFF versus FFM nor the FMM versus MMM does (P -values: 0.42 and 0.81, respectively).

All in all, this may suggest a non-monotonic relation between the number of women in a group and the generosity of that group.

3. Discussion

We find evidence of a gender effect in group decisions: female-majority groups give more to the individual recipient and also choose the equalitarian division more often than male-majority groups do. We also have the interesting but puzzling result that groups with two women and one man are the most generous.

To end on a somewhat speculative note regarding the last result, one possibility is that the presence of a man triggers an exaggerated generosity among the women in the group. This argument receives some support from an observation by Stockard et al. (1988). In a public goods game, they found no gender difference in cooperation although female subjects seemed more eager to appear altruistic. If women use male altruism as a neutral level for comparison, two women may want to be more generous when the third person in the group is a man rather than another woman.

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