



Only Mine or All Ours: Do Stronger Entitlements Affect Altruistic Choices in the Household

UTTEEYO DASGUPTA^a and SUBHA MANI^{b,c,d,*}

^a *Wagner College, USA*

^b *Fordham University, USA*

^c *University of Pennsylvania, USA*

^d *IZA, Bonn, Germany*

Summary. — We introduce a novel allocation game to investigate the role of entitlements in household decision-making. Subjects can allocate their earnings on joint consumption good, or on gender-specific private consumption good. Subjects' consumption choices are observed under two treatments: earning with effort, and earning without effort. Women's choices for the joint consumption good in the household remain largely independent of the treatment. In contrast, men exhibit a stronger preference for private consumption good in the effort treatment. Additionally, using a survey we find that the observed choices in the experiment are consistent with existing social norms in our subject population.

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1. INTRODUCTION

Household is the core decision-making unit of all economic activities. Consequently, there has been considerable theoretical and empirical work in economics analyzing decision-making in the household and its effects on household welfare (Becker, 1981, 1965; Kusago & Barham, 2001; Lundberg & Pollak, 2003; Samuelson, 1956; Sen, 1990). The literature suggests that men and women often have different bargaining powers that lead to different welfare outcomes for the family (Duflo & Udry, 2004; Fafchamps & Quisumbing, 1999; Mani, 2011; Munro, Kebede, Tarazona-Gomez, & Verschoor, in press; Prabhu, 2010; Udry, 1996).

An unequivocal picture seems to emerge however of women being the more altruistic member in the family compared to their male counterparts. Empirical evidence from different countries suggests that they provide stronger patronage to overall family welfare, and promote joint household consumption more (Datt & Jolliffe, 2005; Imai, Annim, Kulkarni, & Gaiha, 2014; Quisumbing, 1996; Udry, Hoddinott, Alderman, & Haddad, 1995). These findings indicate a clear direction toward endowing women in the household with a greater decision-making role in an effort to foster and improve family welfare (Kabeer, 1999). In fact some developing countries have already started a purposeful shift toward promoting women's role as the primary decision-maker in their targeted welfare policies (De Brauw, Gilligan, Hoddinott, & Roy, 2014).¹

Interestingly though, there is relatively little work that examines whether such demonstrated altruistic preferences by wives in the household are affected by changes in the way resources were earned, and associated feelings of entitlements. Since husbands and wives in the household, can have different roles due to historical reasons, social conventions or current economic conditions, it begs the question whether altruistic choices among household partners depend on their entitlements over economic resources. We ask: "Do stronger entitlements over economic resources affect altruistic decision-making in the household?" Our experiment results reply in the affirmative.

Laboratory experiments on individual decision-making suggest that there can be gender differences (or the lack of it) in behavior depending on the nature of the task and the experimental design. However, results in allocation games largely support the stereotypes of the more selfless woman and individually oriented man (Andreoni & Vesterlund, 2001; Bolton & Katok, 1995; Dickinson & Tiefenthaler, 2002; Dufwenberg & Muren, 2006; Eckel & Grossman, 1996; Eckel & Grossman, 1998).² A small body of work additionally focuses on economic decision making in mixed gender pairings (Cadsby, Servátka, & Song, 2010; Dasgupta, 2011; Sutter, Bosman, Kocher, & Winder, 2009) to find effects of gender pairing, although inconclusive. An overall consensus that arises from the literature is that women are more sensitive than men to experiment treatments, social cues, and norms in determining appropriate behavior (Cox & Deck, 2006; Gilligan, 1982; Krupka & Weber, 2013).

A second strand of experimental evidence on individual decision-making indicates that varying the process of earning resources affects perceptions of entitlement and influences choices in a variety of economic scenarios.³ In particular, Dasgupta (2011), Oxoby and Spraggon (2008), Rutsröm and Williams (2000), Hoffman *et al.* (1994), Hoffman and Spitzer (1985) find that the frequency of self-regarding choices generally increase when subjects earn the resources or the rights to be the allocators compared to a situation where subjects are randomly assigned to be the allocators.

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Evaluating decision-making in the *household* however, can be complicated. The close proximity of the decision-makers, along with repeated interactions in multiple dimensions, increases the complications (Basu, 2006; Lundberg & Pollak, 2003). While there have been attempts to use very different investigative tools to gather reliable data on household decision-making (Almeida & Kessler, 1998; Bolger, Davis, & Rafaeli, 2003; Larson & Almeida, 1999), a controlled experiment environment can circumvent some of the potential biases that arise exclusively in survey-based data gathering exercises (see Mani (2011) and Bertrand and Mullainathan (2001) for a discussion).

So far the experimental work on household decision-making has focused primarily on issues of efficiency in joint decision-making and consistently finds evidence against it (see Mani (2011) for a review). Results suggest considerable information hiding tendencies between the two members of the household, as well as loss of efficiency and economic surplus (Ashraf, 2009; Castilla, 2014; Iversen, Jackson, Kebede, Munro, & Verschoor, 2011; Mani, 2011; Munro, Bateman, & McNally, 2008; Munro *et al.*, in press). Results indicate that economic dependency along with age and the level of household income affects women's decision-making power in the household (Bateman & Munro, 2005; Carlsson, He, Martinsson, Qin, & Sutter, 2012a, 2012b).

In contrast to the above literature that focuses primarily on implications and plausibility of the unitary household model of decision-making (Becker, 1981), and issues of efficiency in decision-making in the household more generally, we focus on eliciting the role of entitlements on altruistic consumption choices among husbands and wives.⁴ As suggested by Andreoni, Harbaugh, and Vesterlund (2008), an altruistic consumption choice in our extra-lab experiment indicates consequence/considerations for others in the household and affects one's own choice (although, it might or might not imply sacrifice on one's own part); although ulterior motives might exist alongside altruistic choices, they are not the only motives for the behavior.

We introduce a novel allocation game to examine whether changes in the way economic resources are earned affect altruistic choices in the household. Subjects in our experiment are randomly assigned to one of the two treatments—(a) no-effort: where a subject receives money for consumption without performing any task, and (b) effort: where a subject performs a task to earn money for consumption. In both treatments subjects choose between a private consumption bundle and a joint household consumption bundle. We also implement a survey to evaluate cultural norms among our subject population using the Krupka and Weber (2013) framework.

We find that subjects assigned to the effort treatment have an overwhelming tendency to choose the private consumption bundle over the joint consumption bundle. However, when we separate our results by gender, we find women's choices for joint consumption in the household remain largely independent of the treatment. In contrast, men exhibit a stronger preference for the private consumption bundle in the effort treatment. Our results seem to suggest that regardless of the way economic resources are earned, women in the household are relatively more altruistic in their consumption choices compared to males; further, such a behavior is consistent with existing social norms.

2. EXPERIMENT

Due to the complexity of a dynamic decision making environment we do not explicitly test a theoretical model. However, we provide a theoretical sketch in Appendix 4 to situate our experiment better. We follow the basic framework

of the separate spheres bargaining model (Lundberg & Pollak, 1993) where socially evolved gender norms provide focal points for gender-specific tacit division of responsibilities.

2.1 The Household Consumption Game

To examine altruism in consumption choices in the household, we introduce the "Household Consumption Game," a novel allocation game that retains the within-game non-strategic set-up of the dictator game.⁵ Each decision-maker was asked to choose between a bundle containing private consumption goods, and a bundle containing joint household consumption goods. Food items were representative of joint consumption; personal clothing was representative of "assignable" and excludable personal consumption (see Browning, Bourguignon, Chiappori, & Lechene, 1994; Lundberg, Pollak, & Wales, 1997).

The decision-maker was presented with the two options and asked to use the money from the experiment to choose one of them. The private consumption bundle for males contained a shirt and a pair of trousers; the private consumption bundle for females contained two Sarees. The joint household consumption bundle contained staple food grains (8-kg rice and 1-kg lentil). Each consumption bundle was valued at Rs. 200. It is useful to point out that Rs. 200 was equivalent to a little over a day's worth of average wage for our subject sample.⁶ At the end of the experiment, the decision-maker was given a store credit receipt (from designated stores) specifying their choices.⁷ We believe that our Household Consumption Game ensures that the possibility of reversibility of intra-household transfers between the couples, post-experiment, is substantially reduced due to the nature of our payoffs; they were specified in terms of real commodities and not money which would be relatively more fungible.

2.2 Treatments

In the baseline no-effort treatment the subjects were told that they have received Rs. 200 and were asked to choose one of the two consumption bundles. They were shown samples of clothing items as well as the staple food bundle before making their choices.

In the effort treatment, to induce a stronger sense of entitlement, the decision-maker was asked to participate in a task prior to choosing a bundle (Cox, Friedman, & Gjerstad, 2007). Our effort task was purposefully kept simple keeping in mind our subject population in the extra-lab experiment (see related discussion in Dasgupta, Gangadharan, Maitra, Mani, & Subramanian, 2012). Previous extra-lab experiments confirm that similar tasks provide considerable treatment effects in our context (see Barr, Justine, Miller, & Shaw, 2011; Jakiela, 2011). In the effort treatment, the subject was presented with four plastic bowls, three empty and one containing red, blue, and white poker chips, and was asked to separate in five minutes the chips into the three bowls—one containing only white chips, a second containing only red chips, and the third containing only blue chips. If they were successful, they could choose one of the two bundles described above. If they could not complete the task in the allotted time they were promised only the show-up fee of Rs. 50. Note, that 5 min were sufficient to complete the task, and all subjects in the effort treatment successfully completed the task.

2.3 Procedure

The experiment was conducted in Bhogal, a prominent resettlement colony situated in South Delhi, India. In preparation for the experiment, we surveyed a subset of members in

the community to identify their staple food diet and preferred personal clothing choices. We also visited the local marketplace in Bhogal, which catered mostly to the local population. Here we surveyed multiple grocery stores to identify and verify the staple food items purchased by families residing in Bhogal. Similarly, we surveyed the clothing stores in the same market area to identify the commonly used clothing items purchased by residents of Bhogal. To evaluate the desirability of the gender-specific personal bundles further, we used self-reported data collected from Bhogal residents who participated in a subsequent *social norm elicitation survey* (see Section 4). Each subject ranked the desirability of the private good on a scale of 1 to 4: dislike it a lot, dislike it, like it, and like it a lot. We found that subjects consider the private consumption bundle highly desirable. All subjects ranked the private good as either “like it a lot” or “like it”: 31.4% of female subjects from the *social norm elicitation survey* rank the private good, as “like it a lot” and 24.3% of male subjects rank the private good, as “like it a lot”. Further, we found that difference in ranking of the private good as “like it a lot” is not statistically significantly different between males and females at even the 10% significance level (p -value = 0.45, two-tailed t -test), allowing us to infer that any observed differences in experiment choices between two sexes are not likely to be due to differences in the levels of perceived desirability of the private good between the two sexes. To implement payoffs from the experiment, we picked two prominent stores in the area to serve the subjects. The stores provided us with store-credit receipts, which we used during our experiment payoffs.

Given our interest in observing altruism in the *household*, our subjects comprise married spouses only. We hired research assistants from Bhogal to recruit the couples. Each subject was promised Rs. 50 (=1 US dollar) for showing up on time for the experiment, and additional remuneration. The nature of the additional remuneration was not disclosed at the time of recruitment. Note, we maintained the same recruiting protocol for our follow-up survey on cultural norms, where we invited a new group of subjects.

We used a community center near Bhogal as our gathering area for the subjects where the subjects were asked to congregate at a pre-specified time in one of the large rooms. Several research assistants were in charge of monitoring them and ensuring that there was no communication among participating subjects. Each married couple were then separated and escorted to two smaller adjoining rooms in the community center. In one of the rooms the subject participating in the extra-lab experiment made decisions privately, and after completing the decision participated in a survey on demographic and socioeconomic characteristics of their own household.⁸ The subject then received the pay-off from the game and the show-up fee. Simultaneously, in the other room, the spouse of the decision-maker was asked to complete the same socio-economic survey and was given Rs. 50 for completing the survey. Once the decisions were made, and the survey was completed, the husband-wife pair regrouped and left the community center without communicating with the other waiting subjects (see Appendix 1 for experiment instructions).

We implemented a pre-randomized order and selected one decision-maker from each married couple to be placed into either the effort treatment or the no-effort treatment. This ensured balanced gender representation in each treatment. Of the 210 couples participating in the experiment, 100 were assigned to the effort treatment and the remaining 110 were assigned to the no-effort treatment.

Note, in contrast to Munro *et al.* (in press) where both partners receive endowment to allocate, only one of the partners

received endowments to allocate in our experiment. This was explained to the partners at the beginning of the experiment thus enabling us to observe choices where the earning and the allocation decision are clearly assigned—devoid of any beliefs or expectations about the (non decision making) partner’s choice in household allocation.

3. RESULTS

3.1 Description of the Subject Pool

210 married individuals (105 males and 105 females) participated in the extra-lab experiment. Bhogal residents predominantly include poor migrants from Tamil Nadu who have moved to the national capital in search for better jobs and economic opportunities. The majority of the households comprise of earning couples. Table 1 presents a description of the background socioeconomic and demographic characteristics of our subjects. Our subjects on average are 33 years old, with male subjects being only slightly older than our female subjects. The average length of marriage is 12 years for male subjects and 15 years for female subjects indicating quite early marriages among our subject population. The subjects on an average have three children. Average monthly household income reported by male subjects (Rs. 5,520) is marginally higher than female subjects (Rs. 5,186). A higher proportion of male subjects report positive savings out of their own income in comparison to female subjects.⁹ We also collected data on self-reported measures of conflict on budget allocation decisions between spouses. Male subjects report higher conflict over budget allocation decisions compared to female subjects.

Since we collect data on socioeconomic characteristics from the decision-maker as well as his/her spouse, we can compare the extent to which husbands and wives give similar answers on years married, number of children, household income, and conflict over budget allocation decisions. We find that there is no discrepancy in the number of children and years married reported between couples. Additionally, the difference in total household income reported between couples is zero for 95% of the subjects, and for the remaining 5%, the discrepancy in household income is within 0.50 standard deviation of the mean. Couples also have similar views on conflict over budget allocation decisions; among those that report any conflict, 76% of the spouses agree on the presence of conflict over budget allocation decisions. In comparison to the Munro *et al.* (in press) sample from Tamil Nadu, our subjects depict higher congruence in reported measures of household characteristics. We also note that our sample averages on age, years married, and income are typically lower than sample averages reported in Mani (2011), except that the percentage of women reporting conflict on household budget allocation decision is similar to Mani (2011).

3.2 Subject decisions

We find that 22.7% of the subjects choose the joint consumption bundle in the no-effort treatment, and 9% of the subjects choose the joint consumption bundle in the effort treatment (see Figure 1). We further examine the distribution of these choices by gender and find that 21.8% of the male subjects choose the joint consumption bundle in the no-effort treatment while only 4% of the male subjects choose the joint consumption bundle in the effort treatment (see Figure 2). In the no-effort treatment, 23.6% of female participants choose the joint consumption bundle, and 14% choose the joint consumption bundle in the effort treatment (see Figure 3).

Table 1. *Summary statistics*

Variables	Pooled (1)	Male (2)	Female (2)
Joint (% choosing the joint consumption bundle)	16 (37)	13.33 (34.15)	19.04 (39.45)
Age (in years)	33.40 (9.45)	34.7 (9.83)	32.10 (8.90)
Completed grades of schooling	2.70 (2.80)	3.84 (3.03)	1.56 (1.99)
Years married	13.81 (9.68)	12.18 (9.17)	15.43 (9.93)
Number of children	2.87 (1.30)	2.66 (1.33)	3.08 (1.22)
Monthly household income (in Rupees)	5353.07 (2505.15)	5520.09 (3273.24)	5186.05 (1357.00)
Own income (in Rupees)	2774.5 (2557.89)	3956.05 (3133.72)	1592.95 (713.71)
Log (monthly household income)	8.50 (0.40)	8.48 (0.48)	8.51 (0.30)
Savings (% reporting positive savings)	81 (39)	86.66 (34.15)	75.23 (43.36)
Employed (% working)	95 (21)	95.23 (21.39)	95.23 (21.39)
Conflict (% reporting conflict over budget allocation decisions)	8 (27)	12.38 (33.09)	4.0 (19.23)
Sample size	210	105	105

Notes: Standard deviations reported in parentheses.

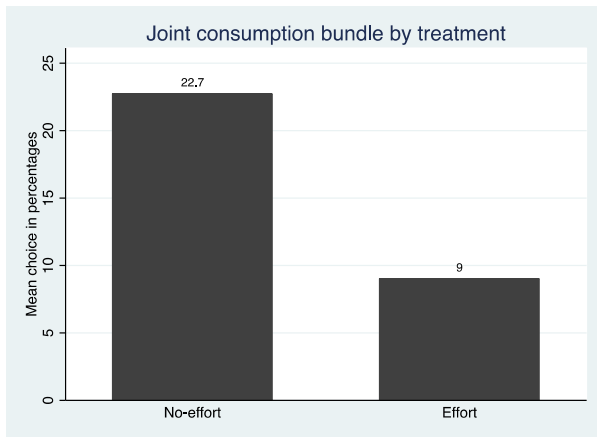


Figure 1. *Average choice of the joint consumption bundle: pooled.*

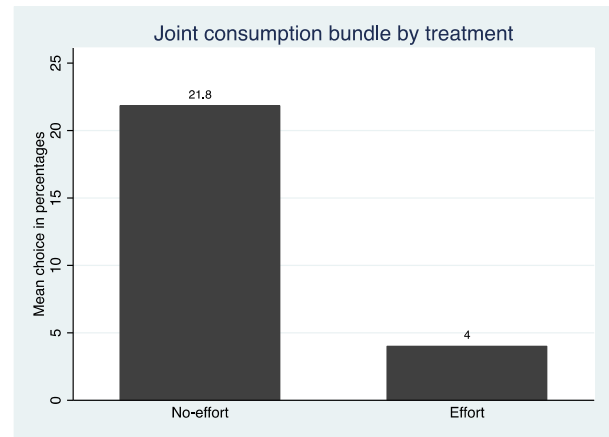


Figure 2. *Average choice of the joint consumption bundle: married males.*

Next, we formally test the following hypotheses: H1: Choices are identical in the effort and the no-effort treatment; H2: Choices in the effort treatment are identical for males and females; H3: Choices in the no-effort treatment are identical for males and females; H4: Choices for males are identical in the effort and the no-effort treatments; H5: Choices for females are identical in the effort and the no-effort treatments.

Our results indicate that subjects in the effort treatment are significantly less likely to choose the joint consumption bundle compared to subjects in the no-effort treatment (H1 is rejected at the 1% significance level, p -value = 0.0068, two-tailed t -test). Males are significantly less likely to choose the joint consumption bundle compared to females in the effort treatment (H2 is rejected at the 10% significance level p -value = 0.08, two-tailed t -test). Male and female choices for joint consumption bundles are not significantly different in the no-effort treatment (we fail to reject H3 at even the 10% significance level, p -value = 0.82,

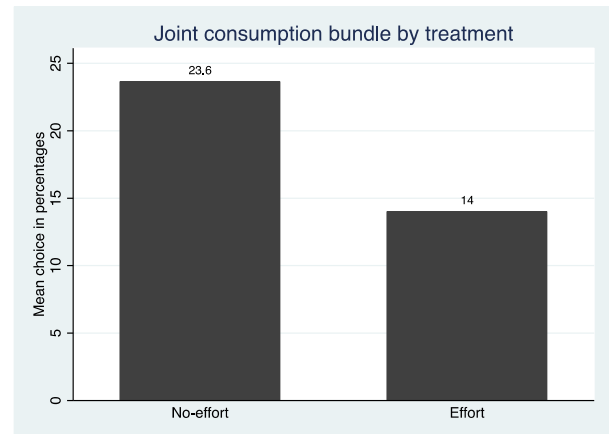


Figure 3. *Average choice of the joint consumption bundle: married females.*

two-tailed *t*-test). Males are less likely to choose the joint consumption bundle in the effort treatment compared to the no-effort treatment (H4 is rejected at the 1% significance level, *p*-value = 0.007, two-tailed *t*-test). Finally, there is no significant difference in the choice of the joint consumption bundle for females across treatments (we fail to reject H5 at even the 10% significance level, *p*-value = 0.21, two-tailed *t*-test).¹⁰

3.3 Regression analysis

The mean tests however, do not allow us to disentangle treatment differences and gender-specific treatment differences from differences in socioeconomic characteristics. Our experiment design allows us to use socioeconomic characteristics collected during the experiment to provide a better insight into choice, conditioning on such factors. In Table 2 we examine household and demographic characteristics between subjects who participated in the effort treatment and subjects who participated in the no-effort treatment. We find that subjects in the effort treatment are on average 5 years younger and have fewer years of marriage compared to subjects assigned to the no-effort treatment. We also find that subjects in the effort treatment have 10% more monthly household income than subjects in the no-effort treatment. We find no statistically significant difference in other characteristics between the two groups (see column 3, Table 2). To be able to isolate the impact of the treatment from other factors, we control for these differences in household and demographic characteristics in our regression results presented next.

Treatment effects

We estimate a multivariate probit regression model to examine treatment and gender-specific treatment differences in consumption choices, controlling for demographic and socio-economic characteristics. The associated marginal effects

from the probit regression model are reported in Table 3. The underlying latent response function of the probit model takes the following form:

$$Y_i^* = \beta_0 + \beta_1 Treatment_i + \beta_2 Male_i + \beta_3 Treatment * Male_i + \sum_{j=4} \beta_j X_{ij} + \epsilon_i$$

The dependent variable in Table 3 takes a value 1 if the subject chooses the joint consumption bundle, and 0 otherwise. Treatment is a binary variable, which takes a value 1 if the individual is assigned to the effort treatment and 0 if assigned to the no-effort treatment. Male is equal to 1 if male, 0 if female. *X*s include a vector of socio-economic characteristics reported in Table 1.

To test whether consumptions choices are identical in the effort and non-effort treatment, we estimate the probit regression model without the interaction term (β_3), where β_1 captures differences in consumption choices between the effort and no-effort treatments. The associated regression result is reported in column 1, Table 3. We find that subjects assigned to the effort treatment are 10 percentage points less likely to choose the joint consumption good compared to subjects assigned to the no-effort treatment. This difference is statistically significant at the 5% significance level suggesting that the earning procedure influences altruistic consumption choices.

We are particularly interested in identifying gender-specific treatment differences in consumption choices. The associated regression results are reported in columns 2 and 3 of Table 3. Our preferred specification reported in column 3, Table 3 explains more of the variation in the choice of the joint consumption bundle compared to models specified in columns 1 and 2 in Table 3. The joint test on the treatment dummy and the interaction term ($\beta_1 + \beta_3$), captures differences in consumptions choices between the effort and no-effort treatment

Table 2. Average socio-economic characteristics in treatment groups

Variables	Effort (1)	No-effort (2)	Difference (3) = (1) - (2)
% Male	50 (50)	50 (50)	0.0 (7.0)
Age (in years)	30.82 (7.37)	35.75 (10.50)	-4.93*** (1.26)
Completed grades of schooling	3.00 (3.04)	2.43 (2.55)	0.57 (0.38)
Years married	12.48 (8.29)	15.01 (10.68)	-2.53* (1.32)
Number of children	2.74 (1.14)	3 (1.41)	-0.26 (0.18)
Monthly household income (in Rupees)	5619.85 (2668.64)	5110.54 (2332.47)	509.30 (345.16)
Log (monthly household income)	8.55 (0.38)	8.45 (0.41)	0.10* (0.06)
Own income (in Rupees)	2911.6 (2866.07)	2649.86 (2247.61)	261.73 (353.80)
Savings (% reporting positive savings)	85 (36)	77 (42)	7 (5)
Conflict (% reporting conflict over budget allocation decisions)	5 (22)	11 (30)	-6 (4)
Sample size	100	110	

Notes: In columns 1 and 2, standard deviations reported in parentheses. In column 3, standard errors reported in parentheses.

**Significant at the 5% level.
 ***Significant at the 1% level.
 *Significant at the 10% level.

Table 3. *Determinants of joint consumption good: pooled sample*

Variables	(1)	(2)	(3)
Treatment	-0.102** (0.046)	-0.005 (0.06)	0.015 (0.06)
Male	-0.02 (0.052)	0.04 (0.05)	0.07 (0.06)
Treatment*male		-0.15*** (0.04)	-0.15*** (0.04)
Age (in years)	-0.006 (0.006)	-0.005 (0.005)	-0.005 (0.0056)
Completed grades of schooling	-0.0215** (0.009)	-0.014 (0.008)	-0.02** (0.009)
Years married	-0.00025 (0.006)	-0.001 (0.005)	-0.0012 (0.005)
Number of children	0.045** (0.02)	0.05** (0.02)	0.051** (0.022)
Log (monthly household income)	-0.121 (0.07)	-0.17** (0.07)	-0.19** (0.07)
Savings (=1 if positive savings, 0 otherwise)	-0.053 (0.07)	-0.05 (0.06)	-0.03 (0.06)
Conflict (=1 if conflict over budget, 0 otherwise)	0.353*** (0.13)	0.40*** (0.12)	0.767*** (0.20)
Conflict*male			-0.11*** (0.03)
<i>Linear hypotheses</i>			
Treatment + treatment*male = 0		-0.22*** (0.07)	-0.20*** (0.06)
Conflict + conflict*male			0.16** (0.07)
Predicted probability	0.12	0.10	0.10
Pseudo-R-square	0.17	0.19	0.21
Log pseudolikelihood	-77.14	-75.04	-73.59
Sample size	210	210	210

Notes: Marginal effects from a probit regression model are presented along with robust standard errors in parentheses. The dependent variable takes a value 1 if the subject chooses the joint consumption bundle, 0 otherwise.

- *Significant at the 10% level.
 **Significant at the 5% level.
 ***Significant at the 1% level.

for males. The coefficient estimate on the treatment dummy and the interaction term jointly has a value of -0.20 (appended in column 3, Table 3) and is statistically significant at the 1% significance level. We find that male subjects are 20 percentage points less likely to choose the joint consumption good when assigned to the effort treatment compared to when assigned to the no-effort treatment. Next we examine treatment differences among female subjects. The coefficient estimate on the treatment dummy (β_1) captures differences in consumption choices between the effort and the no-effort treatment among female subjects. We find no significant difference in the choice of the joint consumption good when assigned to the effort treatment compared to when assigned to the no-effort treatment. This suggests that women's preferences for the joint consumption bundle is independent of her treatment status, while males indicate a strong preference for the private consumption good in the effort treatment. Finally, β_3 captures the difference between differences in consumption choices between the effort and no-effort treatment for males and the differences in consumption choices between the effort and no-effort treatment for females. We find that male subjects in comparison to female subjects are 15 percentage points less likely to choose the joint consumption good in the effort treatment compared to the no-effort treatment. This suggests considerable gender-specific difference in consumption choices by treatment. Our results suggest that differences in the way income is earned does not

influence altruistic choices for women; however, it significantly changes men's altruistic choices.

Influence of socioeconomic characteristics on consumption choice

Column 3, in Table 3 (see below) provides further insights into the role of socioeconomic characteristics, and its influence on choices in the experiment. First, we find that subjects with more children are more likely to choose the joint consumption good. Every additional child in the household increases the probability of choosing the joint consumption good by five percentage points. This is possibly indicative of a general pressure on joint consumption in larger families, where parents would like to provide more to joint consumption whenever possible, *ceteris paribus*.

Second, a 100% increase in household income is associated with a 19-percentage point decline in the probability of choosing the joint consumption bundle. Subjects with any positive savings are also less likely to choose the joint consumption bundle compared to subjects who do not save anything, though this difference is not statistically significant. Families with relatively high income and or saving are not in need of basic food consumption. As a result, they are in a convenient position to spend the earning from the experiment on private consumption. These effects are also in line with the coefficient estimates on completed grades of schooling, for which we find

that every additional grade of schooling completed decreases the probability of choosing the joint consumption good by two percentage points.

Third, we find that conflict in the household over budget allocation decisions affects consumption choices significantly. Overall, subjects who report conflict in the household over budget allocation decisions are 40 percentage points more likely to choose the joint consumption good (column 2, Table 3). Curiously, we find that the response to conflict differs by gender. In column 3, Table 3, we find that female subjects reporting conflict over budget allocations in the household are 76 percentage points more likely to choose the joint consumption good. In comparison, male subjects that face conflict over budget allocations in the household are only 16 percentage points more likely to choose the joint consumption good.

We present the robustness of our above findings to some alternative explanations in Appendix 3.

4. INFLUENCE OF SOCIAL NORMS ON CONSUMPTION CHOICE

Our results seem to indicate the possibility of social norms influencing choices of our subjects. To explore this we collected additional data on 140 new subjects (70 married female subjects and 70 married male subjects) who participated in a *social norm elicitation survey*.¹¹ Of 70 female subjects, 35 participated in the elicitation for the effort treatment and the remaining 35 participated in the elicitation for the no-effort treatment. Similarly, of 70 male subjects, 35 participated in the elicitation for the effort treatment and the remaining 35 participated in the elicitation of the no-effort treatment. Further, only the husband or the wife from each household was invited to participate in the *social norm elicitation survey* in a single sex environment.

Following Krupka and Weber (2013), each subject was asked a range of questions on household decision-making and asked to rate each alternative available to the subject as either “very socially inappropriate”, “somewhat socially inappropriate”, “somewhat socially appropriate”, or “very socially appropriate” that were scored respectively as -1 , $-1/3$, $1/3$, and 1 . Figures 4 and 5 present average social appropriateness rankings by male and female respondents for available choices in the effort and the no-effort treatment (i.e., a male’s choice between private and the joint consumption bundle, and a female’s choice

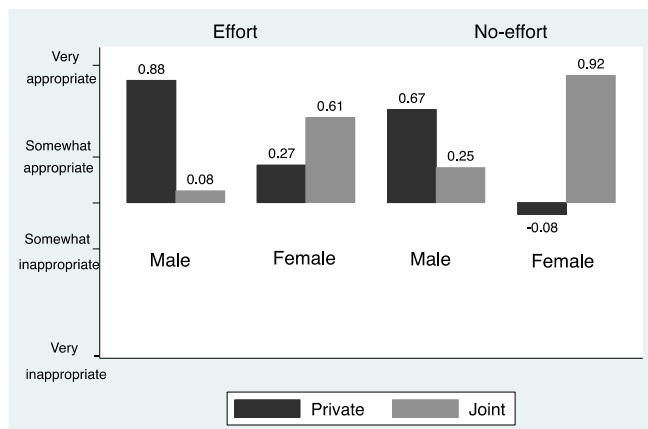


Figure 4. Average social appropriateness rankings of experiment choices: married males.

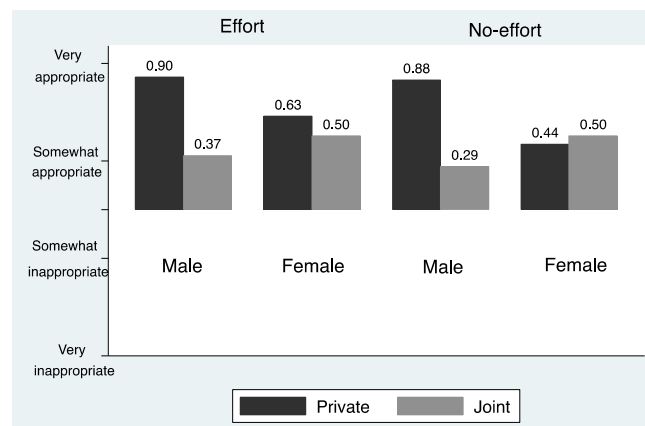


Figure 5. Average social appropriateness rankings of experiment choices: married females.

between private and the joint consumption bundle); Table 4 reports the average social appropriate rankings.

We find that for the effort scenario, males find it strongly *very socially appropriate* for other male spouses to choose the private consumption good, and less than *somewhat socially appropriate* to choose the joint good; they however find it close to *somewhat socially appropriate* for other female spouses to choose the private good, and strongly *somewhat socially appropriate* for other female spouses to choose the joint consumption good (see Panels A and B, Table 4).

In the no-effort scenario, males find it strongly *somewhat socially appropriate* for other male spouses to choose the private consumption bundle and less than *somewhat socially appropriate* for male spouses to choose the joint consumption bundle. In contrast, males find it mildly *somewhat socially inappropriate* for other female spouses to choose the private consumption bundle, and very *socially appropriate* to choose the joint consumption bundle (see Panels A and B, Table 4).

In the effort scenario, females find it strongly *somewhat socially appropriate* for other female spouses to choose the private consumption good as well as the joint consumption good with marginally higher appropriateness rankings for the private good; they find it *very socially appropriate* for other male spouses to choose the private consumption good, and *somewhat socially appropriate* for other male spouses to choose the joint good (see Panels C and D, Table 4).

In the no-effort scenario, females find other female spouses’ choice of both the private and the joint consumption bundle *somewhat socially appropriate*; they find it strongly *somewhat socially appropriate* for other male spouses to choose the private consumption good, and *somewhat socially appropriate* for the male spouses to choose the joint consumption good (see Panels C and D, Table 4).

Our norm survey reveals considerable support for gender spheres and indicates that males in particular prefer their own private consumption under stronger entitlement situations and females seem agreeable to that belief. On the other hand, males seem to feel that women should choose the joint household good more often, especially when the latter has weaker entitlement claims. Interestingly, these results qualitatively support previous results from a multi-country survey by Dwyer and Bruce (1988) where they found that gender ideologies commonly “support the notion that men have a right to personal spending money, which they are perceived to need or deserve, and that women’s income is for collective

Table 4. Average social appropriateness rankings of choices

Treatment	Private (1)	Joint (2)	Difference (3) = (1) – (2)
<i>Male</i>			
<i>Panel A: Perception toward other Male spouses</i>			
Effort	0.88 (0.25)	0.08 (0.32)	0.80*** (0.06)
No-effort	0.67 (0.34)	0.25 (0.42)	0.42*** (0.09)
<i>Panel B: Perception toward other Female spouses</i>			
Effort	0.27 (0.33)	0.61 (0.33)	-0.34*** (0.08)
No-effort	-0.08 (0.45)	0.92 (0.21)	-1.00*** (0.08)
<i>Female</i>			
<i>Panel C: Perception toward other Male spouses</i>			
Effort	0.90 (0.24)	0.37 (0.32)	0.53*** (0.07)
No-effort	0.88 (0.25)	0.29 (0.27)	0.59*** (0.06)
<i>Panel D: Perception toward other Female spouses</i>			
Effort	0.63 (0.34)	0.50 (0.30)	0.13* (0.07)
No-effort	0.44 (0.41)	0.50 (0.30)	-0.06 (0.08)

Notes: In columns 1 and 2, standard deviations reported in parentheses. In column 3, standard errors reported in parentheses.

**Significant at the 5% level.

*Significant at the 10% level.

***Significant at the 1% level.

purposes” (1988, pp. 5–6). Overall, observed choices in our extra-lab experiment seem consistent with the social norms prevalent in the subject population.

5. CONCLUSION

Our experiment evaluates how differences in the way economic resources are received affect altruistic consumption choices among male and female spouses. Results support previous work on entitlements that suggest that subject choices become more self-serving when feelings of entitlements are strengthened. However, we find that women’s altruistic behavior remains largely independent of changes in entitlements, lending support to the notion that females promote choices that are relatively more nurturing and caring (Brickell & Chant, 2010; Eagly & Crowley, 1986). Our survey on social norm further supports such a conclusion. Our extra-lab experiment results also seem to be supportive of the framework of

cooperative conflict (Sen, 1990) where women identify more than men in household’s interest. The latter is particularly interesting to observe in our subjects where presence of household conflicts over budgetary allocations make men and women behave very differently; facing such conflicts men prefer more private consumption, while women prefer joint family consumption more.

Although, our primary interest in the experiment is in eliciting consumption choices in the household under different earning procedures, our results have implications toward some of the classic work testing common preference models of the family. These models suggest a form of Ricardian equivalence, that is, which family member receives or controls income should not affect the allocation of family resources, implying that gender-targeted transfer policies might be unnecessary. Lundberg and Pollak (1993) provide a theoretical framework where this might not necessarily be true. Lundberg *et al.* (1997) use changes in the U.K. child benefit scheme in the late 1970s as a natural experiment to investigate consumption patterns when child benefits accrued to the husband vs. when it accrued to the wife. They reject the income-pooling model as their results suggest that there are significant differences in family expenditure patterns and conclude that their results support the notion that children do better when their mothers control a larger fraction of family resources. More recently, Kuhn (2014) evaluates the Electronic Benefit Transfer program in the US to find that a stronger entitlement to women in the household can change the time path, as well as the composition of the food-stamp expenditure, mitigating some of the typical effects of dynamically inconsistent consumption-expenditure planning that leads to the “calorie crunch”. In our experiment we exogenously vary the income earner as well as the way income is earned and come to a similar conclusion, i.e., we find wives’ choices to be relatively more altruistic, catering more toward joint household consumption compared to husbands; this is especially stark when the wife earns the income and is also the decision-maker.

In retrospect, our results broadly support the conclusion of enhancing the role of women in the household. The steps taken by countries such as Mexico and Sri Lanka, where food coupons were directed toward women instead of men, and India’s recent step toward making women the head of the household for food distribution purposes seem a positive move to improve household welfare keeping in mind the more altruistic concerns women spouses exhibit. Further, our results suggest that a push toward women’s empowerment (Duflo, 2012; Lépine & Strobl, 2013; Mabsout & van Staveren, 2010; Weber & Ahmad, 2014; Wiig, 2013), especially through women’s greater participation in the labor force, can have positive benefits for joint household consumption and development, since empowered women seem to care significantly more for household consumption than empowered men.

NOTES

1. See “Are Men Useless? (Government Says Yes)”, NYT, March 9, 2012.
2. Croson and Gneezy, (2009), and also Eckel and Grossman (2009) provide an extensive overview of the experiment literature on gender differences.
3. For example see Ruffle (1998), Keasey and Moon (1996), Ackert, Charupat, Church, and Deaves (2006), Konow (2003), Reinstein and Riener (2012), Carlsson, Haoran, and Peter (2013).

4. Our notion of altruism here is analogous to Nagel (1970): “by altruism I mean not abject self-sacrifice, but merely a willingness to act in the consideration of the interests of other persons, without the need of ulterior motives.”

5. See Engel (2011) for a survey of the dictator game, and also Eckel and Grossman (1998).

6. The Indian National Sample Survey's 55th round (2000) estimates the mean monthly per capita consumption of rice and pulses to be respectively 5.5 kg and 1 kg. Also at the time these experiments were run the minimum wages in India were pegged at Rs. 100.
7. We had already explained to the shopkeepers that they would be receiving subjects with store receipts. We also explained to the shopkeepers the nature of our research and the fact that the subjects can only receive the items mentioned in the store-credit receipt. We verified at the end of each day that the protocol was indeed followed by the shopkeepers through picture records.
8. See Table 1.
9. Using the Indian Human Development Survey from 2005, we compute the average monthly household income for poor households residing in urban Delhi to be Rs 4,702. This is close to the average income made by our participant households in New Delhi, India.
10. Our results remain robust and qualitatively similar to a *singlelesame-sex environment* where only a randomly chosen husband or his wife from the household was invited to participate in the extra-lab experiment. See Appendix 3 on Robustness for further details.
11. We are particularly grateful to an anonymous referee for suggesting us this method. See Appendix 2 for the *social norm elicitation survey*.
12. We are grateful to an anonymous referee for suggesting this treatment to us.

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APPENDIX 1. EXPERIMENTAL INSTRUCTIONS

Welcome to today's experiment.

You will receive a colored chip with a code on it. If you have a red chip please go to the room on the left. In this room, you will be asked some survey questions about your day to day life. You are free to say that you do not want to answer any particular question. At the end of the survey, you will be given Rs. 50 and escorted out of the room by one of the experimenters.

No effort

If you have received a green chip please go to the room on the right. Here you will participate in the following tasks:

We will give you a store receipt worth Rs. 200 which can be used to buy only the specified choices below. You have to choose from one of the two options below:

Option 1: A shirt and a pair of trousers [Two Sarees (for females)]. See examples displayed on the table.

Option 2: Food items (see packets displayed on the table).

Once you have made your choice, you will be asked some survey questions about your day-to-day life. You are free to say that you do not want to answer any particular question. At the end of the survey, you will be given Rs. 50 and the store receipt and escorted out of the room by one of the experimenters.

If you have any questions/clarifications you can raise your hand and I will answer your query privately.

Effort

If you have received a green chip please go to the room on the right. Here you will participate in the following tasks:

There are four bowls. In one bowl there are chips containing three colors. There are three other empty bowls. You need to separate out the chips into the three bowls, with each containing chips of only one color. You will get 5 min to finish your task. If you complete the task successfully, we will give you a store receipt worth Rs. 200 which can be used to buy only the specified choices below. You have to choose from one of the two options below:

Option 1: A shirt and a pair of trousers [Two Sarees (for females)]. See examples displayed on the table.

Option 2: Food items (see packets displayed on the table).

Once you have made your choice, you will be asked some survey questions about your day-to-day life. You are free to say that you do not want to answer any particular question.

At the end of the survey, you will be given Rs. 50 and the store receipt and escorted out of the room by one of the experimenters. Note: if you cannot separate the chips in the three bowls within five minutes you will only receive Rs. 50 for showing up on time.

If you have any questions/clarifications you can raise your hand and I will answer your query privately.

APPENDIX 2. SOCIAL NORM ELICITATION SURVEY QUESTIONS

No effort situation [effort situation]

Consider two scenarios. (1) A married man from Bhogal was given Rs. 200 to spend either on 8 kg of rice and 1 kg of lentil or on a shirt and pair of trousers. (2) A married woman from Bhogal was given Rs. 200 to spend either on 8 kg of rice and 1 kg of lentil or on two sarees. [Consider two scenarios. (1) A married man from Bhogal was asked to perform a small task that will take 5 min of his effort. In return he will be given Rs. 200 to spend either on 8 kg of rice and 1 kg of lentil or on a shirt and pair of trousers. (2) A married woman from Bhogal was asked to perform a small task that will take 5 min of her effort. In return she will be given Rs. 200 to spend either on 8 kg of rice and 1 kg of lentil or on two sarees.]

Indicate for each scenario whether you believe choosing each of the options below is “very socially inappropriate”, “somewhat socially inappropriate”, “somewhat socially appropriate”, or “very socially appropriate”. By socially appropriate, we mean behavior that most people agree is the “correct” or “ethical” thing to do. Another way to think about what we mean is that if the husband were to select a socially inappropriate choice, then his wife might be angry at him for doing so. Or if the wife were to select a socially inappropriate choice, then her husband might be angry with her for doing so.

Be as truthful as possible. We will ask the same question to other participants from Bhogal. You will earn additional money if your response to a randomly-selected question is the same as the most common response provided in today’s session.

APPENDIX 3. ROBUSTNESS

We present the robustness of our findings to the following alternative lines of explanations: (1) differential access to resources, (2) differences in the waiting time in the extra-lab experiment, (3) influence of the non-decision making partner in the experiment, (4) scope and occurrence of transferability of the private good between the decision-making subjects and their children.

First, the gender-specific treatment differences reported in Table 3 may be confounded by differential access to resources between the two sexes. To allow for gender-specific differences in socioeconomic characteristics, we estimate the treatment effects separately for males and females. These results are reported in Table 5 (see below), we find that the impact of certain socioeconomic characteristics on consumption differs by gender. We find that males are 10 percentage points less likely to choose the joint consumption good in the effort treatment compared to the no-effort treatment (see column 1, Table 5). For women, the treatment effects are statistically insignificant, close to zero in magnitude, and have no impact on consumption choices (see column 2, Table 5). Every additional grade of schooling decreases the probability of choosing the joint consumption good for males and females, with the effects being statistically significant only for the former. Presence of an additional child in the household increases the probability that a woman chooses the joint consumption good by 12 percentage points. The gender differential effects found here is further re-enforced from examining spending patterns between male and female subjects. Using data on spending patterns collected from the 140 subjects who participated in the *social norm elicitation survey*, we find that in the previous month female subjects spent 29% more than males (significant difference, p -value = 0.00) on the purchase of the joint consumption good. Note, the regression results reported in Tables 3 and 5 control for household income that can mask the influence of individual income on choice. Since women in our sample earn less than men it is plausible that women’s choice of the joint consumption good is driven by their eagerness to finally contribute more to the household. To allow for differences in individual earnings we replace our measure of household income with a measure of own income to find own income

Suppose the married man received the money and spent it on	Very socially inappropriate	Somewhat socially inappropriate	Somewhat socially appropriate	Very socially appropriate
Shirt and trouser for himself				
8kg of rice and 1 kg of lentil				
Suppose the married woman received the money and spent it on	Very Socially inappropriate	Somewhat socially inappropriate	Somewhat socially appropriate	Very socially appropriate
Two Sarees for herself				
8kg of rice and 1kg of lentil				

Table 5. *Determinants of joint consumption good by gender*

Variables	(1)	(2)
	Male	Female
Treatment	-0.10** (0.04)	-0.05 (0.10)
Age (in years)	0.006 (0.007)	-0.014 (0.009)
Completed grades of schooling	-0.015** (0.006)	-0.021 (0.02)
Years married	-0.014 (0.009)	0.009 (0.008)
Number of children	0.048 (0.03)	0.125*** (0.04)
Log (monthly household income)	-0.107 (0.12)	-0.072 (0.18)
Savings (=1 if positive savings, 0 otherwise)	-0.04 (0.13)	0.035 (0.08)
Conflict (=1 if conflict over budget, 0 otherwise)	0.18 (0.11)	0.73*** (0.21)
Predicted probability	0.06	0.13
Pseudo <i>R</i> -square	0.29	0.22
Log pseudolikelihood	-29.18	-40.01
Sample size	105	105

Notes: Marginal effects from a probit regression model are presented along with robust standard errors in parentheses. The dependent variable takes a value 1 if the subject chooses the joint consumption bundle, 0 otherwise. ***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

having no effect on the choice of the joint consumption good. Further, the coefficient estimates on all other variables also remain qualitatively similar to those reported earlier in column 3, Table 3. The additional robustness results are available from the authors upon request.

Second, our findings are robust to the order in which subjects participate in the choice task. First, note that the waiting time was random by design for subjects in both treatments since each subject was given a randomly generated id number that determined the order in which they each made decisions. Further, we find that inclusion of the order variable (*order*), that determines the order in which each subject made the decision and its interaction with the treatment dummy (*order* * *treat*) as additional covariates in our most preferred specification reported in column 3, Table 3, have no statistically significant effect on the choice of the joint consumption good (see Table 6).

Third, even though our decision-makers take decisions in isolation from their partner, it is conceivable that some subjects' choices could have been affected in anticipation of eventual scrutiny of the decision by the non decision making partner right after the experiment. To rule out such concerns we tested the robustness of our findings in an environment where only *one* of the spouses from a household was invited to participate in the exact same extra-lab experiment; i.e., either a married man or a married woman was randomly chosen to be invited from every household. Twenty-four married men and 24 married women participated in a single-sex environment extra-lab experiments.¹² Upon arrival, our subjects were separated in two rooms based on their gender. In the room with only male decision makers, 12 men were randomly assigned to make decisions in private under the "effort" treatment and the remaining 12 men were assigned to make decisions once again in private under the "no-effort" treatment. Similarly, in the room with only female decision makers, 12 women were randomly assigned to make decisions in private

Table 6. *Determinants of joint consumption good: pooled sample*

Variables	(1)
Treatment	-0.009 (0.09)
Male	0.062 (0.05)
Treatment*male	-0.143*** (0.04)
<i>Order</i>	-0.0008 (0.0009)
<i>Order</i> * <i>treatment</i>	0.0004 (0.0016)
Age (in years)	-0.003 (0.005)
Completed grades of schooling	-0.02** (0.009)
Years married	-0.002 (0.005)
Number of children	0.052*** (0.022)
Log (monthly household income)	-0.18*** (0.07)
Savings (=1 if positive savings, 0 otherwise)	-0.035 (0.06)
Conflict (=1 if conflict over budget, 0 otherwise)	0.787*** (0.17)
Conflict*male	-0.11* (0.03)
<i>Linear hypotheses</i>	
Treatment + treatment*male = 0	-0.217** (0.09)
Conflict + conflict*male	0.17** (0.06)
Predicted probability	0.10
Pseudo- <i>R</i> -square	0.21
Log pseudolikelihood	-73.16
Sample size	210

Notes: Marginal effects from a probit regression model along with robust standard errors in parentheses. The dependent variable takes a value 1 if the subject chooses the joint consumption bundle, 0 otherwise.

*** Significant at the 1% level.
** Significant at the 5% level.
* Significant at the 10% level.

under the "effort" treatment and the remaining 12 women were randomly assigned to make decisions once again in private under the "no-effort" treatment. All other protocols/design of the extra-lab experiment was identical to our original experiment in every other respect. Using data on these 48 observations, we test our original hypotheses H1–H5 stated Section 3.2. Our findings remain robust to the modified design of single-sex, single household member subject pool suggesting that even in the single-sex environment, where the non-decision making partners are absent (hence the scope of influencing the decision-maker's choices is further minimized), our key findings continue to hold (see Table 7).

Fourth, we find that family composition influences the choices in the experiment. Every additional child in the household increases the probability of choosing *the joint consumption good* by five percentage points (see columns 1–3, Table 3) instead of the private consumption bundle. Even though we did not collect data on the age of children in the household, we use four other variables (age, years married, number of male children, and number of female children)

Table 7. Results from the single-sex experiment

Hypothesis	Decision	p-Value
H1: Choices are identical in the effort and the no-effort treatment	Reject	0.046
H2: Choices in the effort treatment are identical for males and females	Reject	0.07
H3: Choices in the no-effort treatment are identical for males and females	Fail to reject	0.68
H4: Choices for males are identical in the effort and the no-effort treatments	Reject	0.028
H5: Choices for females are identical in the effort and the no-effort treatments	Fail to reject	0.40

collected in the experiment to further explore the scope of sharing the private consumption between the decision making parent and their children. First, note that the average age of our subjects are only 33 years and they are married on an average for 13.8 years (see column 1, Table 1); hence even if we assume very early conception, the age of the oldest child would have to be 13 years or less. It is therefore highly unlikely that the adult clothing provided in our extra-lab experiment is amenable to sharing with the first-born young adolescents; it is certainly not possible to share the clothing with their even younger siblings. Additionally, when we look at our males subject choices in the two treatments we find that subjects who chose the private bundle and subjects who chose the joint consumption bundle do not significantly differ in the number of male children they have (p -value = 0.34, two-sided t -test). Also, we find that female subjects with higher number of female children tend to choose the joint consumption good significantly more (p -value = 0.0.9, two-sided t -test). The discussion above allows us to conclude that any concern about the scope and occurrence of transferability of the private good between the subjects and their children are minimal.

APPENDIX 4. CONCEPTUAL FRAMEWORK FOR HOUSEHOLD CHOICES

We assume that the husband (h), and the wife (w) respectively have VNM utility functions $U_h(x_h, q)$, and $U_w(x_w, q)$; x_h and x_w are private goods consumed by the husband and wife respectively, and q the household public good jointly consumed by them. The joint consumption of the public good is an important gain from marriage and remains the only source of interdependence in the marriage even when the spouses choose their consumption bundles non-cooperatively. A cooperative solution

with Nash bargaining specifies x_h, x_w, q that maximize the product of the gains from cooperation. We assume social norms influence consumption choices of household members in their respective gendered roles and constitute the threat points (that are socially sanctioned). The threat points are given as the indirect utility function $T_i(p, I_h, I_w, N)$ where p is the relative price of the public good. Prices of x_h and x_w are equal and normalized to one. I_h and I_w are exogenous incomes received by the husband and the wife respectively. N describes the social norm. The Nash social welfare function is defined as the difference between the individual utility and the threat points: $S = (U_h - T_h) (U_w - T_w)$. The demand function for each good is derived by maximizing S subject to the household budget constraint $x_h + x_w + pq = I_h + I_w$. It follows that the demand functions are $x_i = g_i^x(p, I_h, I_w, N)$, and $q = g^q(p, I_h, I_w, N)$, $i = h, w$. Income received by the husband and the wife enters these demand functions separately because they affect not only the feasible set but also the threat point. In a non-cooperative equilibrium, when we assume socially prescribed gender roles to assign primary responsibilities to each of the two household members (Ex: looking after the food requirement for children might fall typically within the wife’s sphere) it suggests that the husband and the wife unilaterally decides whether to spend on q or not. Consequently, in a non-cooperative voluntary contribution equilibrium in the family, socially prescribed gender roles (gender spheres) might lead to different equilibrium distribution of resources depending on the social norms and who controls the resources (Munro *et al.*, in press).

In our experiment, only one of the spouses was exogenously given income, and was asked to make a choice between the private consumption bundle and the public good (joint consumption bundle). If N influences income allocation on q in a stereotypical way, we would expect $q > 0$ whenever $I_w > 0$ and $q = 0$ if $I_h > 0$.