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DO CHILDREN MAKE WOMEN MORE PATIENT? EXPERIMENTAL EVIDENCE FROM INDIAN VILLAGES[1]

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ABSTRACT

This paper studies gender heterogeneity in preferences. We used experimental methods to elicit the subjective discount rate in Indian villages. Results show that women are significantly more patient than men and that their discount rate is related to the number of children they have. There is no gender difference for individuals without children. Women's discount rate declines up to four children, whereas men's discount rate does not. Our findings suggest that conflictual interactions within a household are more likely when a couple has young children, hence the spousal heterogeneity in patience is the most profound.

Keywords: time preference; gender; India
JEL classifications: C93, D13, 012

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I. Introduction

The idea that men and women have heterogeneous preferences has been a cornerstone of a growing literature on intra-household conflict and has shaped much of the policy in developing countries. Using evidence from a series of "lab experiments in the field" on a sample of more than 500 villagers spread across eighteen villages in India, we find that women make more patient choices than men and that the gender heterogeneity is closely associated with the number of children in a family.

Many empirical observations of behavior in various contexts are supportive of the view that women make more development-prone choices. It has been reported that a higher share of income in the hands of women: leads to higher child survival probability (Thomas 1990), enhances anthropometric status of girls (Duflo 2000), increases educational expenditures (Quisumbing and Maluccio 2003), and reduces the budget shares of alcohol and cigarettes (Hoddinott and Haddad 1995)[2]. The experience of microfinance institutions gives women an equally favorable record. Armendariz de Aghion and Morduch (2005) provide numerous examples of substantially lower repayment difficulties for women compared to men. Pitt and Khandker (1998) report larger positive effect of microcredit on schooling and household assets when women are participants.

However, it remains unclear what drives these behavioral differences. Women can be more patient, have less self-control difficulties, be more risk averse, or simply feel more concern about others.[3] Muhammad Yunus (2002, p.374), for example, mentions all these components of the utility function in his explanation of the positive experience of the Grameen Bank with women: "…women have a longer vision than men. Men are more likely to enjoy what they've got right away, and they are generally more impulsive. But a woman is more likely to have a very consistent vision for the future. She wants a better life and to build security for her and for her family." In addition, we don't know if the often assumed preference heterogeneity between genders is immutable or if it varies and could be explained by some observable economic characteristic or family background.

Lab experiments organized in the field can be a powerful tool to shed some light on these questions and complement the literature on intra-household decision-making that is primarily concerned with the bargaining process within a household and assumes preference

[2] For surveying article on intra-household models and evidence see Xu (2007).
[3] Complementary to our paper is a study of Ashraf (2005) whose experiments in Philippines show that contextual differences have substantial effect on intrahousehold decisions and may potentially exacerbate the intrinsic differences in preferences.

heterogeneity. In our study we apply an experimental methodology in field labs[4] organized in villages in Karnataka, India, to elicit individual time discounting and attitude to risk. Our sample is 573 individuals whose descriptive statistics are similar to the overall rural population of Karnataka. We complemented the experimental responses with a detailed survey of individual economic and demographic characteristics.

We find significant gender differences in the level of patience, but not in the likelihood of having hyperbolic time preferences (being impatient now and patient in the future) or attitude to risk. In accordance with the conventional wisdom and behavioral patterns mentioned above, women emerged more patient than men when making choices between current tradeoffs and future tradeoffs[5]. Perhaps more interestingly, in their discounting women are less responsive to economic conditions (measured by education and wealth), but we found intimate connection between women's inferred subjective discount rate and their number of children. When a woman has no children younger than 18 years[6], her discount rate is relatively high and similar to a man's. Her patience increases with children until she has four, whereas men's remains stable. As a consequence, their discount rates diverge. Over four children, the discount rates increase for both genders.

Our data suggest that having children motivates a woman to make more patient choices until she gets overloaded by the immediate needs of a large family. The positive effect of children on patience is consistent with the psychological model of backward discounting with dual selves (Ray and Wang 2001), where a parent maximizes, besides her own utility, the utility of her children positioned in the stage of life of the parent. A well-known saying "I want my child to have a better life than I have" nicely illustrates a parental concern about a child imprinted into their position[7]. Alternatively, with children, parents may become more patient if there are some high fixed costs high return investments which are specific for children (e.g. education, vaccination or saving for dowry). In both cases the more altruistic a person is towards her child, the more patient she will be.

[4] Artefactual field experiments using the classification of Harrison and List (2004).

[5] During the experimental meetings the participants were given a lunch. Notably in this context, the majority of women did not eat the meal, but waited until the end of the session and brought it home to share it with their children. Men ate the lunch immediately.

[6] Although it may sound as an unnecessary adjective, we will use a shorter term "young children" interchangeably with "children younger than 18 years". It should distinguish them from the total number of children (including adults).

[7] Seymour (1999, p. 184), an anthropologist, quotes an Indian woman from Andhra Pradesh: "My ultimate aim in life was to make my children educated. My father prevented me from studying when I wanted to continue. …. I brought them [my children] up differently then I was."

There are many economic experiments conducted in developed countries among the student population. Although some studies identify gender differences (e.g. Kirby and Marakovic 1996), for obvious reasons, this is not a setting conducive to studying the link based on the number of children. Studies conducted by psychologists capture a bigger variety of populations and the overall conclusion (Silverman 2003) is that women are better able than men to delay gratification. A few interesting studies in developing countries measured individual time discounting, although these did not focus on studying gender differences. Rubalcava, Teruel and Thomas (2007) in Mexico and Ashraf, Karlan and Yin (2005) in Philippines find that women are more patient than men, on the other hand Tanaka, Camerer and Nguyen (2007) in Vietnam and Pender (1996) in India fail to establish this relationship.

The remainder of this brief paper is organized as follows: In Section 2 we describe the sample and experimental methodology. Section 3 summarizes the main results. Section 4 discusses alternative explanations for the observed pattern and Section 5 concludes.

II. Sample and experimental methodology

The selection procedure for the field was designed to generate an unusually varied sample of the rural population of the south-western Indian state of Karnataka. Data were collected in June 2007 in cooperation with an Indian NGO called BPKS[8] in Honavar and Haliyal taluks (a taluk is an administrative unit akin to a county, part of a larger district within a state). Figure 1 provides a map. Nine villages were selected from each taluk, and 35 people were selected in each village using a random walk method.[9] Those identified were invited to participate in the study, and 90 percent participated. The total number of participants was 573, with no fewer than 25 participants per village.

We used village meeting halls, typically schools, as field labs. Table 1 compares the sample characteristics with Karnataka averages from 2001, restricted to the population older than 15 years. The average age and education levels are not statistically different, but we have a slightly lower proportion of illiterate respondents in our sample (40 percent compared with 43

[8] BPKS is an Indian NGO, its mission is to support education for needy children. The organization was founded in 1991 and it administers the Child sponsorship program (school fees, uniforms and health care) for 5 000 children in northern Karnataka. It receives funding from donors in the Czech Republic, the Slovak Republic, the Netherlands and Belgium.

[9] The villages were randomly selected based on the 2001 Indian Census database; however, in three villages in each Taluk the BPKS did not have a good access and knowledge of a village head. These were replaced with other villages that were similar in size, distance to town and educational facilities to the ones originally selected. [link on website with more details on selection strategy]

percent in the entire state). This may reflect increases in school enrollment ratios in the 1980s and 1990s. Age of marriage is typically higher in urban areas that are included in the Karnataka average, while our respondents are villagers and therefore more likely to be married. Although the selection strategy was not intended to generate a representative sample of rural population of the whole Karnataka, the sample captures most of its variety and in our opinion is exceptional for an experimental study with real rewards.

We used a simple protocol to elicit discount rates, drawing on practices common in developed and developing countries (e.g. Harrison, Lau, Rutström and Sullivan 2005; Tanaka, Camerer and Nguyen 2007).[10] Respondents were asked to choose between receiving a smaller monetary amount earlier in time or a larger amount with three months delay. For example: "Do you prefer Rs. 250 tomorrow or Rs. 300 three months later?"[11] We posed five such questions to each individual, each question increasing the future amount while keeping the earlier amount constant. We thus made the choice to delay increasingly more attractive in each subsequent binary choice. The point at which an individual switches from choosing the earlier reward to the future reward gives an interval of her discount rate. In the analysis we use the arithmetic means of these intervals to approximate individual discount rates. If a participant switched more than once, nothing could be inferred about the discount rate.[12]

The same series of binary choices were made at a further time frame: "Do you prefer Rs. 250 in one year time or Rs. 300 in one year and three months?" The time frame was shifted by exactly one year to avoid possibility of confounding factors due to seasonality of agricultural incomes and due to regularity of local celebrations. For a complete list of binary choices involved, see Table 2. We denote the discount rate calculated from the current tradeoffs as the "current discount rate," and that calculated from the future tradeoffs as the "future discount rate."

We have applied the "front-end-delay" method (Harrison, Lau, Rutström and Sullivan 2005; Pender 1996) in the earlier time frame to control for potential confounds due to lower credibility and higher transaction costs associated with future payments. If participants lacked

[10] In their surveying article Cardenas and Carpenter (2005) classify this methodology as the "choice task method." For a discussion on relative advantages of using "choices task method" vs. alternative "matching-task method" see Frederick et al. (2002). Our decision was largely made on the basis of simplicity given the low education levels in the area.

[11] In July 2007 the exchange rate was 1USD= 40.2 Indian Rupees. In the area of our study Rs. 250 is approximately a weekly wage.

[12] There were 5% of inconsistent responses, which are uncorrelated with observable characteristics. Four other respondents did not answer some of the other questions of interest. These were excluded from the analysis and the final sample size is then restricted to 540 individuals.

confidence that they would receive a reward in the future, they might tend to prefer current reward irrespective of their actual discount rate. Therefore there were no choices that included payments on the day of the experimental session so that all rewards face similar "credibility discount". The future payments were guaranteed by cash certificates signed by the chief of the NGO, a local leader and a social worker familiar in the community.

To elicit aversion to risk we have used the near replication of the simple protocol designed by Binswanger (1980) among peasants in ICRISAT villages and later used by, for example, Barr (2003) in Zimbabwe. Each participant was asked to select one out of six different gambles. Every gamble yielded either a high or a low payoff with the probability 0.5. In each subsequent gamble the expected value increased jointly with the variance, allowing us to assign a degree of risk aversion.[13] Two sets of prizes were used. The first one was set at the level of amounts studied in the discount rate question. The expected value of the least risky gamble was Rs. 250 and the higher payoff in the most risky gamble was Rs. 1000. The second set of prizes was lower, with the expected value of Rs. 30 for the least risky gamble and with the maximum payoff of Rs. 120 in the most risky gamble. The exact numbers for all the gambles are in Table 3.

Much care has been devoted to ensure correct understanding of experimental choices given the uniquely high proportion of illiterate respondents. Ten trained research assistants helped the illiterate respondents complete the questionnaire. Before the experimental choices were made, all rules were explained publicly, the experimenter explained the principle of cash certificates and simulated the randomization procedure based on simple tossing of ping-pong balls. At the end of the session 20% of randomly selected respondents were paid or received certificates according to one of their choices.

III. Results

Table 4 presents the means and the standard deviations of attitude to risk, subjective discount rates, and likelihood of having hyperbolic preferences. Women are on average more risk averse, although the difference is not significant at any reasonable level. Adding controls for economic characteristics and family background does not change this result (not reported). We *do* observe substantial difference in the level of subjective discount rates. The current discount rate is 27.2% for men, whereas it's only 21.6% for women. For the future discount rate the

[13] We did not impose any particular structure on the individual utility function to derive an index of risk aversion. Instead, we labeled the gambles from 1 to 6, where 6 is the most risky gamble.

averages are 22.5% and 15.9% respectively. For both discount rates the differences are significant at 1% level. Similarly as Ashraf, Karlan and Yin (2005) we consider a person as having hyperbolic time preferences if her current subjective discount rate is higher than her future discount rate[14]. One third of our respondents are more impatient now than in the future and hence more likely to face self-control difficulties. We do not observe any significant gender differences in the likelihood of having hyperbolic preferences. This result holds with or without adding controls.

Tables 5 and 7 show how the discount rates are correlated with observable characteristics. First let's consider economic characteristics such as education, wealth, income and income fluctuations that are traditionally regarded as determinants of patience (Becker and Mulligan 1997; Kirby et al. 2002; Tanaka, Camerer and Nguyen 2007). We find that more educated men are significantly more patient. For women, we also find a negative correlation with respect to education, though not statistically significant[15]. None of the other economic characteristics is correlated with women's patience.

Next we explore the relationship between subjective discount rates and family characteristics. For women, we find a u-shaped relationship with respect to the number of children. In Chart 1 or Table 5 we can observe that women with no young children have a current three-month discount rate of 25.1%, with one child it is 20.3% and reaches a minimum 14.4% with four children. There are only eleven women in our sample who have more than four children younger than 18 years. These women seem to be overloaded as their discount rate goes steeply up to 30.6%. In Table 7 we control for all other variables and consider both the whole sample and a sub-sample of married individuals[16]. Using a non-linear specification for the number of young children our results (columns 2, 4, 6, 8) indicate the same u-shape pattern as simple

[14] There are other possible explanations why we may observe more impatient choices with regard to current tradeoffs than for future tradeoffs other than hyperbolic preferences such as noise in the data, confusion of respondents or differential transaction costs and credibility of future payments. We deal with this issue in bigger detail in other paper Bauer, Chytilova and Morduch (2008), where it is shown that financial strategies of people with hyperbolic preferences comply with the predictions of psychological models of temptation or dual selves. We skip this discussion here, where the gender difference in the probability of having hyperbolic preferences is statistically insignificant.

[15] This can be also due to lower variance in women's education as 45.1% of women in our sample are illiterate, compared to 34.2% in the case of men.

[16] The reported regression results are based on OLS with standard errors clustered on a village level. We have done several robustness checks. Firstly, we have tested the sensitivity of results on village fixed effects and very similar results were found. Secondly, the results could potentially be driven by calculation of discount rate values as arithmetic means of the inferred ranges. Using geometric means or ordered probit does not affect patterns discussed in the paper (not reported, available upon request).

averages, although the effects are even more profound, especially for the sub-sample of married individuals.

It is interesting to notice that there is only a small difference in the discount rates of men and women if they do not have any young children. The discount rates start to diverge with more children, since women's patience increases, whereas there is no such effect on men's patience (Charts 1 and 2). When having three or four young children, the difference is more than 10 percentage points for both current and future average discount rate (for three children p-value <0.01; for four children p-value = 0.03). In Table 7, columns 1, 3, 5 and 7 we control for other variables and interact a female dummy with number of young children. Again, the interaction coefficients suggest that heterogeneity in discount rates builds up with additional young children up to three and the difference remains large also for higher numbers of children, though not always significant. The interaction coefficients for having three or four children are slightly larger (around 15 percentage points) than the differences inferred from simple averages.

In line with numerous observations about differential treatment of sons and daughters in India, the association of discounting with children could be gender specific. For example, the dowry system may motivate parents to be more patient after having a daughter. Deolalikar and Rose (1998) show positive impact of a daughter relative to a son on household savings. In our sample, the positive association of patience and number of children observed for women is not driven by daughters or sons alone (not reported).

In order to assess the predictive power of our experimental measures, we have examined several types of behavior and preferences outside of the lab which one would expect to be closely knit with patience. The results are intuitively plausible. In Table 10 we show that higher patience predicts higher savings, higher likelihood of participation in self-help groups – local microfinance organizations -, higher likelihood of having a future-oriented purpose of savings and higher desired level of schooling for children.

IV. Patience and number of children: alternative explanations

Let's think why a woman with young children may emerge more forward-looking. The observed correlations between the number of children and the subjective discount rates do not, of course, imply a casual effect in either direction. Being a parent may influence how people

think about future, a proposition that we have emphasized so far. Or alternatively, being patient may affect the number of children one would like to have, or there could be an unobserved variable causing both.

Following the traditional assumption of Becker and Tomes (1976) about altruistic parents, one could argue that more patient parents put bigger weight on quality of their children (in the form of an investment in their human capital). Since higher quality of children is costly, more patient parents should prefer a lower quantity of children. In such a case our estimates of the effect of children on subjective discount rates would be biased downwards. Or alternatively, if the parents were selfish they might consider children as a form of investment in better care during their old age. In this case patient individuals should want more children and our estimates would be biased upwards.

We do not have an exogenous source of variation in fertility to test a causal effect on women's patience. However, several of our results suggest that the downward-sloping part of the observed u-shape *is not* driven by the causal effect of patience on a higher number of children. If children were an investment for old age, firstly we should observe a closer connection of patience with the *total* number of children compared to the number of children that are currently nurtured (younger than 18 years), and secondly, more patient women should want to have more children and we should see strong negative correlation between *desired* number of children and discount rate.

In Table 8 the dependent variable is again the subjective discount rate, the sample is restricted to women and we focus on comparison of the results for total number of children and children younger than 18 years. In column 2 it is shown that the u-shape is much stronger for young children. Admittedly, there can still be a negative relationship between discount rate and total number of children, but perhaps masked by the fact that women get overwhelmed by current needs if they have more than four young children and become impatient. In Table 8, columns 3 and 4, we include a dummy for having more than four young children to control for this effect and observe the correlation with number of children. The negative coefficient is much stronger for young children. A similar exercise is done for future discount rate and we find qualitatively similar results, although less statistically significant (Table 8, columns 5-8).

In Table 9, columns 1, 2, 3, and 4 the dependent variable is desired number of children.[17] If the explanation of the observed pattern were to be grounded in the causal effect of patience on number of children, we would expect the negative relationship to hold particularly closely. The coefficient for a discount rate is indeed negative, but it is not significant at 10% level in any of the specifications. The significance level for pairwise correlation between desired children and discount rates is even lower.

Number of children is, of course, tied up with different stages of life cycle. The effect of children may be overestimated if it captured unobserved life cycle effects. For example, Becker and Mulligan (1997) predict a u-shaped relationship between age and patience due to effects of learning to be future oriented during youth and recognition of shortening life expectancy when getting old. If the first effect overlapped with having new children and the second one with children becoming adult, we could also observe positive correlation between number of small children and patience. We do not, however, observe statistically significant relationship between age and the discount rate for women even if the number of children is not controlled for (Table 8, columns 5 and 10).

Although the wealth index in our analysis is based on wide range of information about household assets, it is commonly argued that measures of wealth are particularly vulnerable to measurement error. Since the number of children is likely to be measured more precisely, we might be concerned about the regression coefficient of number of children being biased upwards if richer women had more children. In contrast, wealthier women in our sample have fewer children (the correlation coefficient is negative with p-value < 0.01).

V. Conclusions

We conducted a series of "experiments in the field" on time discounting and attitude to risk across 18 villages in India and collected unusually detailed information on demographic and economic characteristics of the participants. This paper focuses on preference heterogeneity between men and women. We have not found any significant differences in attitude to risk or the likelihood of having hyperbolic time preferences. In accordance with the earlier empirical

[17] To measure the desired number of children we have used the formulation commonly used in Demographic and Health Surveys: "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?"

work of others who observe more forward-oriented use of income if in the hands of women, we find significantly lower subjective discount rates among women.

Our findings suggest that gender differences in patience are not constant over a lifetime. Men and women have similar discount rates if they have no children, but the preference heterogeneity emerges when there are young children in their family. We find a strong u-shaped pattern between patience and the number of children women currently have, whereas men's patience is not very sensitive to the number of children. We provide several arguments why we believe our results indicate a causal effect of children on how women think about the future, although additional work should be done to establish this link more clearly. Panel data with experimental measures of patience for the same individuals in different stages of life would be particularly suitable.

Our findings may inform the growing literature that studies intra-household decision-making in developing countries. For example, financial strategies that result from intra-household conflicts (such as participation in ROSCAs, Anderson and Baland 2002) may not be correlated only with marital status and decision-making power. Our findings suggest that these actions should be more likely when a couple has young children, hence spousal heterogeneity in patience is likely to be the most profound.

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Figure 1: Geographical location of Honavar and Haliyal Taluks

Chart 1: Current discount rate and number of children younger than 18 years

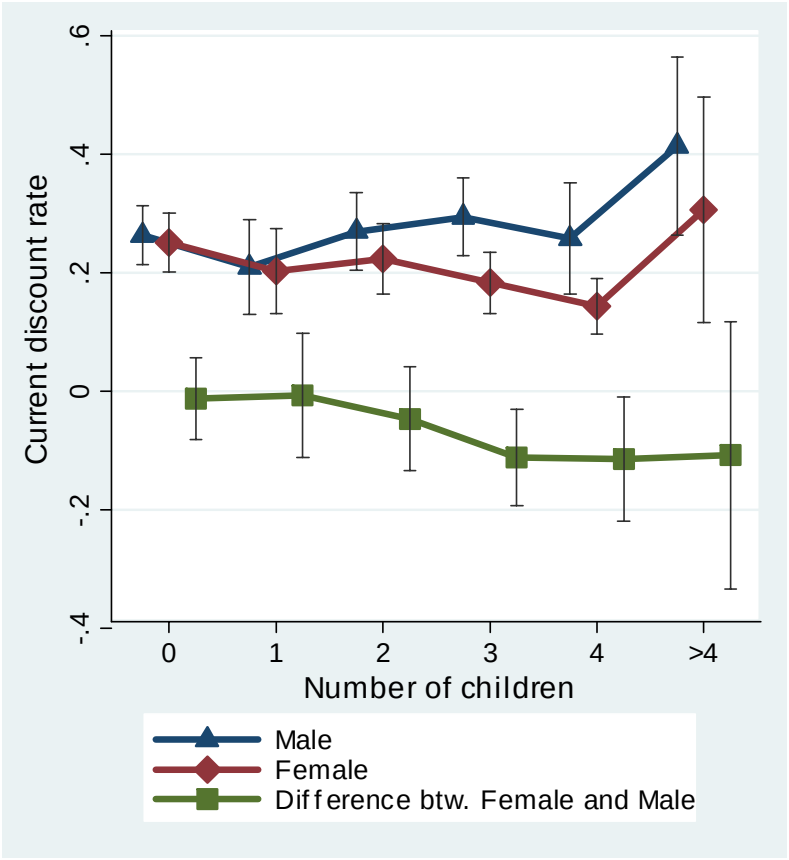

Chart 2: Future discount rate and number of children younger than 18 years

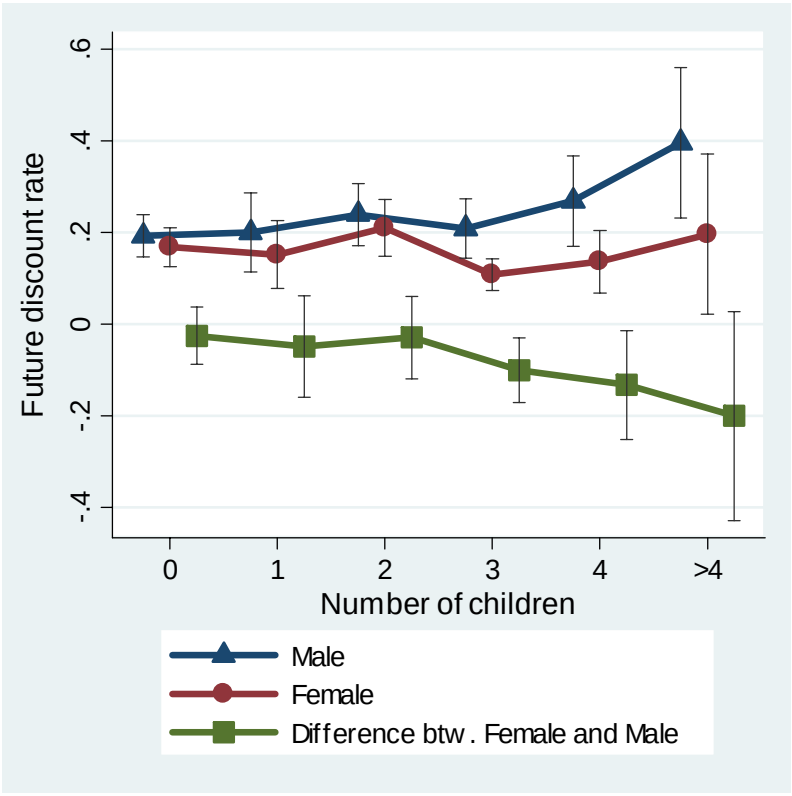

Table 1: Sample characteristics, comparison with Karnataka averages (means and standard deviations)

	Total	Female	Male	Honavar	Haliyal	Karnataka*
Age (years)	36.869	35.537	38.180	36.852	36.885	36.300
	(11.740)	(11.273)	(12.061)	(11.015)	(12.443)	
Education (classes)	4.244	3.485	4.993	5.970	2.519	4.200
	(4.433)	(4.041)	(4.675)	(4.474)	(3.658)	
Illiterate	0.396	0.451	0.342	0.204	0.589	0.425
	(0.490)	(0.499)	(0.475)	(0.403)	(0.493)	
Married	0.789	0.780	0.798	0.733	0.844	0.670
	(0.408)	(0.415)	(0.402)	(0.443)	(0.363)	
Farmer	0.703	0.669	0.737	0.643	0.772	0.750**
	(0.457)	(0.471)	(0.441)	(0.483)	(0.420)	
Sample size	540	268	272	270	270	

Note: Means, standard deviations in parentheses. *Source: Indian Census 2001: data for the Karnataka population above 15. **Only rural population

Table 2: Eliciting discount rates (payoffs)

Current discount rate			Future discount rate		
	Tomorrow	After three months		After one year	After one year and three months
choice 1	250	265	choice 1	250	265
choice 2	250	280	choice 2	250	280
choice 3	250	300	choice 3	250	300
choice 4	250	330	choice 4	250	330
choice 5	250	375	choice 5	250	375

Table 3: Eliciting attitude to risk (payoffs)

Attitude to risk (low amount)			Attitude to risk (high amount)		
Prospect	Bad luck payoff (50%)	Good luck payoff (50%)	Prospect	Bad luck payoff (50%)	Good luck payoff (50%)
1	30	30	1	250	250
2	27	57	2	225	475
3	24	72	3	200	600
4	18	90	4	150	750
5	6	114	5	50	950
6	0	120	6	0	1000

Table 4: Preferences and gender

	Total	Sex		
		Female	Male	
Current discount rate	0.244	0.216	0.272	*
	(0.227)	(0.211)	(0.239)	
Future discount rate	0.192	0.159	0.225	*
	(0.221)	(0.194)	(0.240)	
Hyperbolic preferences	0.330	0.343	0.316	
	(0.471)	(0.476)	(0.466)	
Attitude to risk (low amount)	3.854	3.776	3.930	
	(1.548)	(1.566)	(1.529)	
Attitude to risk (high amount)	3.843	3.787	3.897	
	(1.538)	(1.505)	(1.571)	

Note: Means, standard deviations in parentheses. *Gender difference of means significant at 5% (t-test).

Table 5: Discount rates and socioeconomic characteristics

	Age		Education			Wealth			Number of children 0-18 years old						
	young	old	low	high		low	high		0	1	2	3	4	above 4	
Female															
Current discount rate	0.202	0.232	0.239	0.189	*	0.238	0.195		0.251	0.203	0.223	0.183	0.144	* 0.306	
	(0.205)	(0.218)	(0.224)	(0.192)		(0.219)	(0.202)		(0.231)	(0.198)	(0.212)	(0.198)	(0.121)	(0.284)	
Future discount rate	0.164	0.153	0.179	0.135		0.183	0.136	*	0.168	0.152	0.211	0.109	* 0.137	0.196	
	(0.203)	(0.184)	(0.210)	(0.170)		(0.207)	(0.177)		(0.198)	(0.204)	(0.223)	(0.133)	(0.177)	(0.260)	
Number of observations	145	123	147	121		134	134		86	32	52	59	28	11	
Male															
Current discount rate	0.261	0.283	0.340	0.198	*	0.309	0.234	*	0.264	0.209	0.270	0.294	0.258	0.414	*
	(0.242)	(0.237)	(0.253)	(0.199)		(0.248)	(0.225)		(0.240)	(0.214)	(0.239)	(0.235)	(0.250)	(0.260)	
Future discount rate	0.232	0.218	0.292	0.153	*	0.264	0.185	*	0.193	0.200	0.240	0.209	0.269	0.396	*
	(0.247)	(0.233)	(0.266)	(0.183)		(0.258)	(0.213)		(0.222)	(0.232)	(0.244)	(0.232)	(0.263)	(0.283)	
Number of observations	139	133	141	131		137	135		93	30	53	52	30	14	

Note: Means, standard deviations in parentheses. *Difference of means significant at 5% (t-test). For number of children the mean is always compared to the mean when having no children.

Table 6: Definition of variables

Variables	Definition	Mean	Std dev
Experimental choices			
Current discount rate	6 values approximating 3-months discount rate in earlier time frame: 0.03 = if discount rate < 6%; 0.09= if 6% < discount rate < 12%; 0.16 if 12% < discount rate < 20%; 0.26 = if 20% < discount rate < 32%, 0.14 if 32% < discount rate < 50%; 0.6= if 50% < discount rate	0.244	0.228
Future discount rate	6 values approximating 3-months discount rate in delayed time frame: 0.03 = if discount rate < 6%; 0.09= if 6% < discount rate < 12%; 0.16 if 12% < discount rate < 20%; 0.26 = if 20% < discount rate < 32%, 0.14 if 32% < discount rate < 50%; 0.6= if 50% < discount rate	0.192	0.221
Hyperbolic preferences	Dummy; 1 = if current discount rate > future discount rate	0.330	0.471
Attitude to risk (low amount)	6 values approximating attitude to risk depending on the gamble selected: 1 = (30,30); 2 = (27,57); 3 = (24,72); 4 = (18,90); 5 = (6,114); 6 = (0,120)	3.854	1.548
Attitude to risk (high amount)	6 values approximating attitude to risk depending on the gamble selected: 1 = (250,250); 2 = (225,475); 3 = (200,600); 4 = (150,750); 5 = (50,950); 6 = (0,1000)	3.843	1.538
Socioeconomic characteristics			
Children	Number of children younger than 18 years	1.798	1.605
1 child	Dummy; 1 = if 1 child younger than 18 years	0.115	0.319
2 children	Dummy; 1 = if 2 children younger than 18 years	0.194	0.396
3 children	Dummy; 1 = if 3 children younger than 18 years	0.206	0.404
4 children	Dummy; 1 = if 4 children younger than 18 years	0.107	0.310
> 4 children	Dummy; 1 = if more than 4 children younger than 18 years	0.046	0.210
Total number of children	Total number of children ever born to respondent	2.865	2.081
Desired children	Desired number of children	3.555	0.645
Female	Dummy; 1 = female; 0 = male	0.496	0.500
Age	Age minus average age of marriage (21.8).	15.105	11.740
Education	Years of schooling completed	4.244	4.433
Married	Dummy; 1 = married; 0 = single or widow	0.789	0.408
Wealth	Wealth index calculated by principal component analyses from questions on type of house, electricity connection, land ownership and dummies for possesion of 14 types of household equipment	0.000	1.895
Income in June < income in Sept.	Dummy; 1 = if income in June < income in September; 0 = if income in June >= income in September	0.494	0.500
Financial behavior			
Total savings (Rs. th.)	Rs. th. (savings in bank + savings in post office + SHG monthly contribution*average length of participation + home savings)	2.540	5.431
Future-oriented purpose of savings	Dummy; 1 = if the major purpose of savings is future-oriented (agricultural investment, business, education, doctor); 0 = if it focuses on current consumption (celebration, personal items, household equipment)	0.546	0.498
SHG participation	Dummy; 1 = if participant of a self-help group; 0 = if not	0.429	0.495
Desired education of first-born boy	Years of schooling reported as desirable for first-born son	12.894	2.300
Desired education of first-born girl	Years of schooling reported as desirable for first-born daughter	12.113	2.680

Table 7: Determinants of current and future discount rate

Dependent variable	Current discount rate				Future discount rate			
	Whole sample	All women	All married	Married women	Whole sample	All women	All married	Married women
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	-0.053		-0.047		-0.076		-0.099	
	(0.066)		(0.128)		(0.045)		(0.079)	
Education	-0.013	-0.008	-0.011	-0.006	-0.014	-0.007	-0.013	-0.006
	(0.003)***	(0.005)	(0.004)***	(0.006)	(0.003)***	(0.005)	(0.004)***	(0.005)
Age	-0.011	8.3e-04	-0.018	-0.007	-0.012	-2.6e-04	-0.018	-0.006
	(0.005)*	(0.004)	(0.006)***	(0.005)	(0.004)***	(2.7e-03)	(0.003)***	(0.004)
Age * Female	0.012		0.011		0.011		0.012	
	(0.007)*		(0.009)		(0.005)**		(0.006)**	
$(Age)^2$	2.7e-04	-7.6e-05	3.8e-04	1.0e-04	2.5e-04	-5.7e-05	3.5e-04	7.3e-05
	(1.1e-04)**	(9.9e-05)	(1.2e-04)***	(1.3e-04)	(7.3e-05)***	(7.1e-05)	(6.0e-05)***	(1.1e-04)
$(Age)^2$ * Female	-3.5e-04		-3.0e-04		-3.0e-04		-3.0e-04	
	(1.4e-04)**		(2.0e-04)		(1.0e-04)**		(1.4e-04)**	
Wealth	-0.001	-2.2e-04	0.005	0.003	0.002	-0.002	0.004	-0.002
	(0.006)	(0.007)	(0.008)	(0.010)	(0.005)	(0.008)	(0.007)	(0.010)
Income in June < income in Sept.	-0.015	0.016	-0.017	0.011	-0.022	0.006	-0.031	0.004
	(0.025)	(0.026)	(0.030)	(0.038)	(0.023)	(0.029)	(0.028)	(0.036)
Married	0.081	0.078			0.056	0.048		
	(0.041)*	(0.050)			(0.047)	(0.052)		
1 child	-0.067		-0.090		0.009		-0.015	
	(0.063)		(0.064)		(0.050)		(0.054)	
2 children	-0.019		-0.025		0.042		0.029	
	(0.045)		(0.047)		(0.040)		(0.046)	
3 children	0.021		0.019		0.026		0.017	
	(0.062)		(0.064)		(0.055)		(0.063)	
4 children	-0.040		-0.037		0.059		0.052	
	(0.088)		(0.090)		(0.073)		(0.077)	
> 4 children	0.119		0.119		0.189		0.181	
	(0.074)		(0.063)*		(0.090)*		(0.094)*	
1 child * Female	-0.028	-0.086	-0.032	-0.126	-0.064	-0.045	-0.030	-0.050
	(0.087)	(0.047)*	(0.091)	(0.064)*	(0.068)	(0.039)	(0.082)	(0.053)
2 children * Female	-0.070	-0.082	-0.103	-0.134	-0.046	0.003	-0.052	-0.032
	(0.064)	(0.046)*	(0.070)	(0.052)**	(0.069)	(0.046)	(0.078)	(0.053)
3 children * Female	-0.161	-0.129	-0.200	-0.185	-0.143	-0.106	-0.154	-0.143
	(0.088)*	(0.047)**	(0.085)**	(0.055)***	(0.073)*	(0.049)**	(0.091)	(0.060)**
4 children * Female	-0.148	-0.179	-0.170	-0.211	-0.153	-0.085	-0.150	-0.107
	(0.092)	(0.045)***	(0.101)	(0.049)***	(0.090)	(0.058)	(0.098)	(0.059)*
> 4 children * Female	-0.131	-0.003	-0.186	-0.068	-0.211	-0.012	-0.252	-0.074
	(0.147)	(0.107)	(0.116)	(0.094)	(0.139)	(0.127)	(0.132)*	(0.106)
Constant	0.358	0.261	0.510	0.439	0.331	0.202	0.455	0.322
	(0.044)***	(0.059)***	(0.079)***	(0.084)***	(0.036)***	(0.047)***	(0.055)***	(0.066)***
Observations	540	268	426	209	540	268	426	209
R-squared	0.14	0.08	0.14	0.13	0.14	0.07	0.16	0.10

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. OLS. Standard errors corrected for clustering at the village level. In columns 1,2,3,4 the dependent variable is current discount rate calculated from the binary choices between amount tomorrow and after three months. In columns 5,6,7,8 the dependent variable is future discount rate calculated from the binary choices between amount after one year and after one year and three months. The omitted variable is "no children". The variable age equals to actual age minus the average age of marriage 21.8. (All the coefficients are intact by this shift except the female dummy, which has now easier interpretation as a gender difference at the age of marriage instead of at the birth time).

Table 8: Discount rates and the number of children

Dependent variable	Current discount rate					Future discount rate				
	All women (1)	All women (2)	All women (3)	All women (4)	All women (5)	All women (6)	All women (7)	All women (8)	All women (9)	All women (10)
Total number of children	-0.044	-0.015	-0.008			-0.025	-0.005	-0.005		
	(0.016)**	(0.019)	(0.008)			(0.026)	(0.028)	(0.007)		
(Total number of children)^2	0.004	0.002				0.002	0.001			
	(0.002)***	(0.002)				(0.002)	(0.003)			
Children		-0.093		-0.037			-0.059		-0.023	
		(0.031)***		(0.011)***			(0.033)*		(0.013)	
(Children)^2		0.016					0.009			
		(0.007)**					(0.008)			
> 4 children			0.110	0.216				0.048	0.113	
			(0.107)	(0.108)*				(0.113)	(0.108)	
Age	2.1e-04	0.006	-0.006	0.002	-0.007	-1.0e-04	0.004	-0.003	0.002	-0.004
	(0.009)	(0.007)	(0.009)	(0.007)	(0.009)	(0.005)	(0.005)	(0.006)	(0.005)	(0.007)
(Age)^2	3.2e-06	-1.0e-04	8.0e-05	-4.7e-05	8.3e-05	-9.7e-06	-7.9e-05	3.1e-05	-4.7e-05	3.6e-05
	(1.1e-04)	(8.9e-05)	(1.2e-04)	(9.3e-05)	(1.2e-04)	(6.4e-05)	(6.9e-05)	(7.5e-05)	(6.5e-05)	(8.5e-05)
Socioeconomic characteristics	yes	yes	yes	yes	yea	yes	yes	yes	yes	yes
Observations	268	268	268	268	268	268	268	268	268	268
R-squared	0.04	0.08	0.04	0.07	0.03	0.03	0.05	0.03	0.04	0.02

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Standard errors corrected for clustering at the village level. In columns 1,2,3,4 the dependent variable is current discount rate calculated from the binary choices between amount tomorrow and after three months. In columns 5,6,7,8 the dependent variable is future discount rate calculated from the binary choices between amount after one year and after one year and three months. The explanatory variable "Total number of children" contains all children ever born to a participant (including those who are already adult). The variable "Children" is number of children below 18 years.

Table 9: Determinants of desired number of children

Dependent variable	Desired number of children			
	All women (1)	Married women (2)	All women (3)	Married women (4)
Current discount rate	-0.668	-0.476		
	(0.412)	(0.504)		
Future discount rate			-0.231	-0.048
			(0.379)	(0.402)
Education	-0.015	0.010	-0.012	0.013
	(0.041)	(0.051)	(0.041)	(0.053)
Age	0.067	0.088	0.071	0.098
	(0.048)	(0.079)	(0.049)	(0.083)
(Age)2	-5.1e-04	-7.0e-04	-5.7e-04	-8.2e-04
	(5.8e-04)	(0.001)	(5.9e-04)	(0.001)
Wealth	-0.036	-0.100	-0.037	-0.103
	(0.079)	(0.110)	(0.081)	(0.113)
Income in June < income in Sept.	0.067	0.159	0.058	0.154
	(0.230)	(0.220)	(0.231)	(0.222)
Married	0.432		0.414	
	(0.187)**		(0.187)**	
Constant	1.728	1.488	1.553	1.194
	(0.999)	(1.416)	(1.025)	(1.556)
Observations	255	202	255	202
R-squared	0.06	0.04	0.06	0.04

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Standard errors corrected for clustering at the village level. The dependent variable is the desired number of children.

Table 10: Discount rates, savings and desired education

	Current discount rate			Future discount rate		
	Low	High		Low	High	
Female						
Total savings (Rs. th.)	2.078	1.669		2.165	1.530	
	(2.626)	(2.414)		(2.616)	(2.410)	
Future-oriented purpose of savings	0.646	0.500	*	0.684	0.438	*
	(0.480)	(0.503)		(0.466)	(0.499)	
SHG participation	0.688	0.587		0.721	0.531	*
	(0.465)	(0.495)		(0.450)	(0.502)	
Desired education of first-born boy	13.116	12.593	*	13.088	12.674	
	(1.756)	(2.149)		(1.759)	(2.139)	
Desired education of first-born girl	12.340	11.869		12.331	11.895	
	2.381	2.656		2.463	2.516	
Male						
Total savings (Rs. th.)	3.571	2.545		3.372	2.857	
	(8.412)	(5.039)		(6.392)	(8.008)	
Future-oriented purpose of savings	0.577	0.391	*	0.514	0.480	
	(0.496)	(0.490)		(0.502)	(0.502)	
SHG participation	0.213	0.198		0.228	0.183	
	(0.411)	(0.400)		(0.421)	(0.388)	
Desired education of first-born boy	13.391	12.148	*	13.053	12.609	
	(2.146)	(3.026)		(2.606)	(2.665)	
Desired education of first-born girl	12.515	11.429	*	12.211	11.857	
	(2.472)	(3.246)		(2.711)	(3.059)	

Note: Means, standard deviations in parentheses. + median used instead of mean (median test used to test differences). * difference of means significant at 5% (t-test).