Aspiring for the future: Drivers and consequences of women's aspirations in rural India

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Outline

- Motivation
- Our questions
- Aspirations and investments
- The formation of aspirations
- Data
- Measurement
- Methodology
- Results
- Conclusion

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MOTIVATION
Photo credit: Sam Scott

What are aspirations?

"A hope or ambition of achieving something." (Oxford English Dictionary)

"aspirations are drawn from past individual experience...but at the same time they are profoundly affected by one's social environment" (Genicot and Ray, 2017)

- These definitions suggest several interesting aspects of aspirations (Bernard et al, 2011, Genicot and Ray 2017):
  - **Forward-looking**/future oriented
  - Require some amount of **effort** to achieve
  - Act as **motivators**
  - Are **externally determined/driven** by factors in the individual's environment

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Why do we care about aspirations?

Under-investment as a cause of persistent poverty

- The economics literature has been interested in studying causes of poverty
- We know that households and individuals invest in a range of **tangible** (land, livestock, machinery) or **intangible** (human capital, social networks, political capital) assets
- Regardless of the nature of the investment, these are typically signals of forward-looking behavior
- Investments are important for economic and social mobility (Carter and Barrett 2006)
- Poor households typically underinvest, for a variety of reasons
  - External reasons: credit constraints, lack of insurance, lack of opportunities
  - Internal reasons: self-control, hyperbolic discounting, aspirations

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- The lack of aspirations for a better life can lead to under-investment in the assets needed to achieve that better life
- This can result in a low aspirations – low investment equilibrium
- Since the poor are more susceptible to low aspirations (for lack of opportunity, lack of information, marginalization etc), they are also more susceptible to *remain* poor
- Thus, the study of aspirations - their formation and their role in guiding investments - is crucial to understanding poverty and inequality

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OUR QUESTIONS

1. **Aspirations formation:** What are the determinants of aspirations formation, both internal to the individual and external to them?
2. **Aspirations 'failures':** What is the relationship between aspirations gaps (the difference between current status and aspired to status) and various kinds of investments?

Photo credit: Sam Scott

FIRST, PART II: ASPIRATIONS FAILURES

Aspirations failure – a simple model

(Janzen et al 2017, Genicot and Ray 2017)

- Consider an individual who lives for two periods
- Initial wealth endowment is y_0
- The individual can either consume this endowment (c), or save it for the future (k) such that $y_0 = c + k$
- Return on investment is ρ, so consumption in the next period is ρk
- The agent has aspirations, a, which are assumed to be exogenous
- First period utility comes from consumption, while second period utility comes from consumption, and from exceeding aspirations
- Her utility is given by: $u(c) + \beta[v(\rho k) + w * I(\rho k \geq a)]$

Standard assumptions: $u \; and \; v \; are \; smooth,$
$and \; u' > 0, u'' < 0, v' > 0, v'' < 0$

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- Investment is costly, defined as the loss in utility as a result of foregone consumption

$$C(k) = u(y_0) - u(y_0 - k)$$

- It follows then that the costs are increasing and convex in the amount of investment
- The individual then has to choose the amount to invest in order to maximise her "net benefit", $\phi()$, from investment, where

$$\phi(k) = \begin{cases} \beta v(\rho k) - [u(y_0) - u(y_0 - k)] \; if \; \rho k < a \\ \beta[v(\rho k) + w] - [u(y_0) - u(y_0 - k)] \; if \rho k \geq a \end{cases}$$

- The situation where future consumption exceeds aspirations is called the situation of *'aspiration satisfaction'*, while the situation where future consumption falls short of aspirations is called *'aspirations frustration'*

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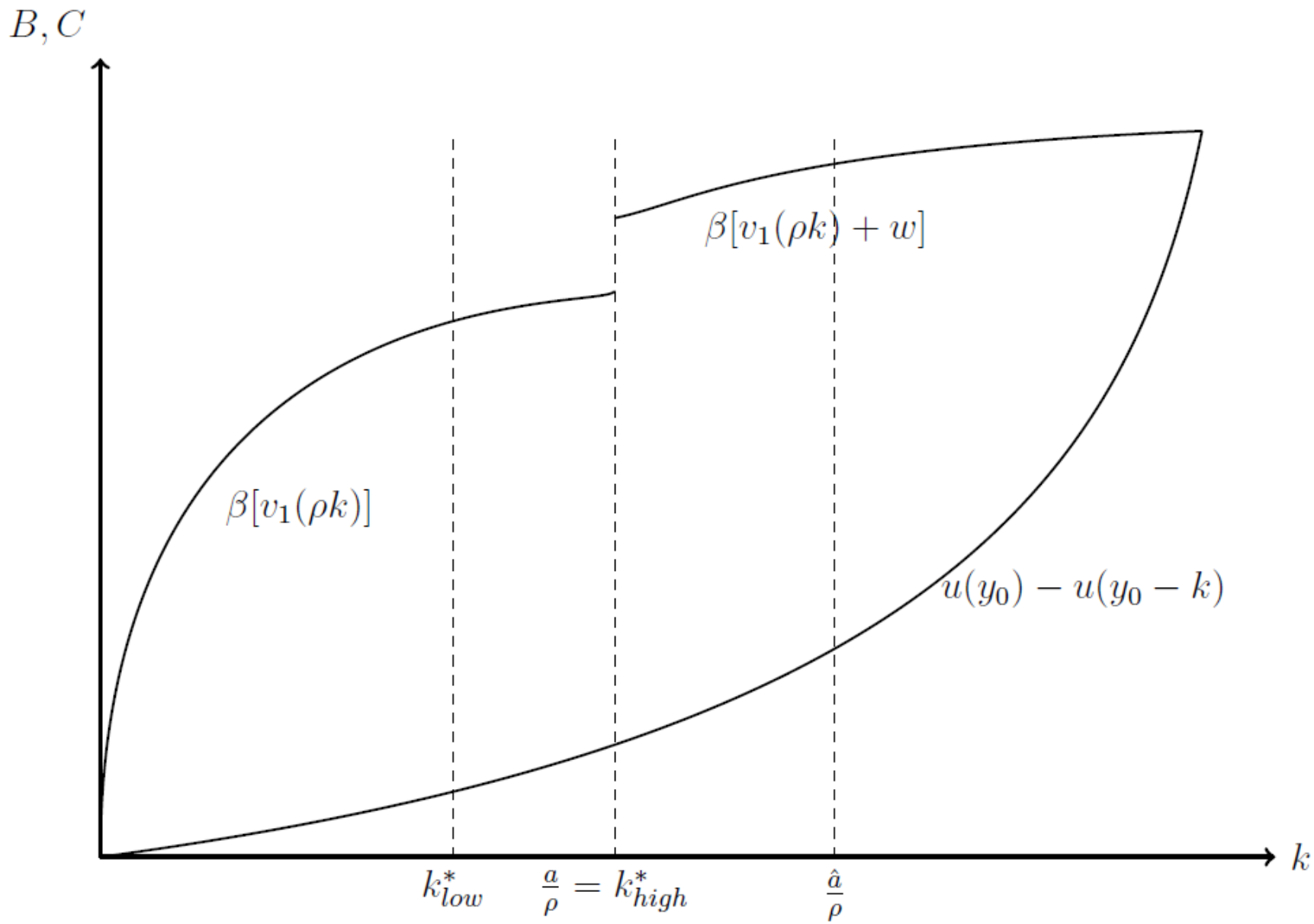
B, C
$\beta[v_1(\rho k) + w]$
$\beta[v_1(\rho k)]$
$u(y_0) - u(y_0 - k)$
k
k^*_{low}
$\frac{a}{\rho} = k^*_{high}$
$\frac{\hat{a}}{\rho}$

- The individual chooses the level of investment to maximise the net benefit
- Under some conditions on the slopes of the cost and benefit functions, there are two local solutions to the maximization problem, one to the left of the discontinuity (k^*_{low}) and one at or to the right of the discontinuity $\left(k^*_{high}\right)$
- The agent then chooses between the two levels of investment in order to maximise overall net benefits
- Genicot and Ray (2017) show that there is a unique level of aspirations, $\hat{a}$, where the individual is indifferent between selecting k^*_{high} and k^*_{low}

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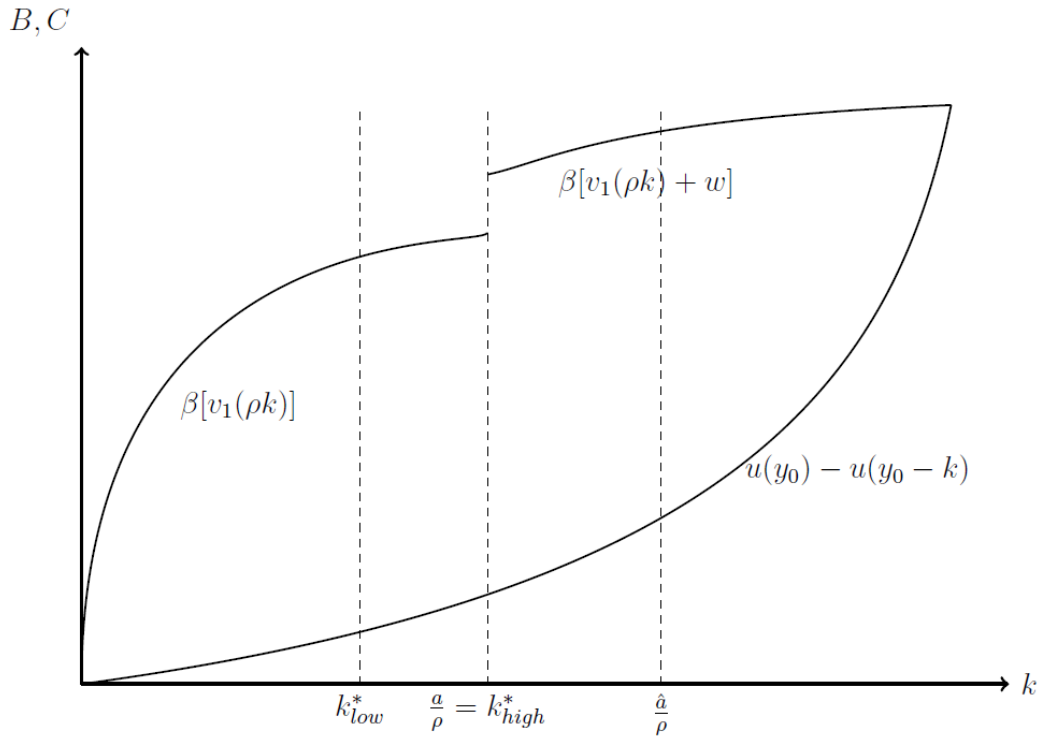
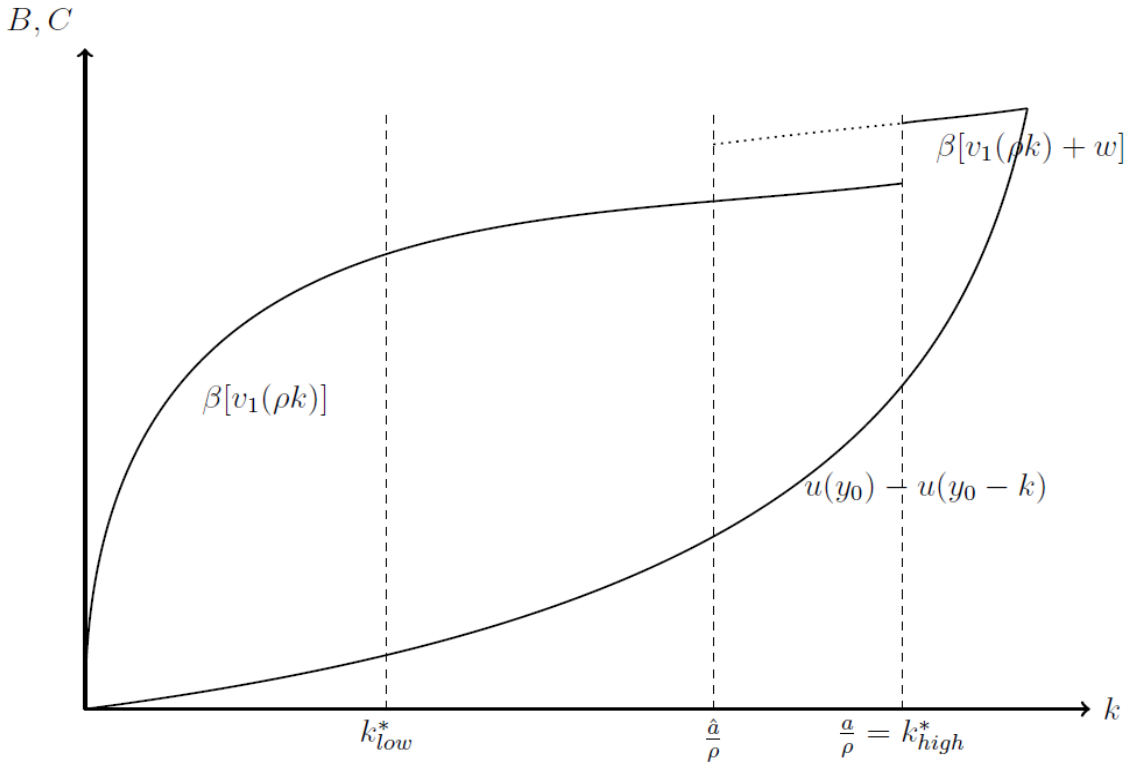
- If aspirations are ‘low’, i.e. $a \leq \hat{a}$, then the agent chooses the high level of investment (Panel A). k^*_{high} increases with a
- If aspirations are ‘too high’, i.e. $a > \hat{a}$, then aspirations are ‘frustrated’ and the individual chooses the low level of investment (Panel B)

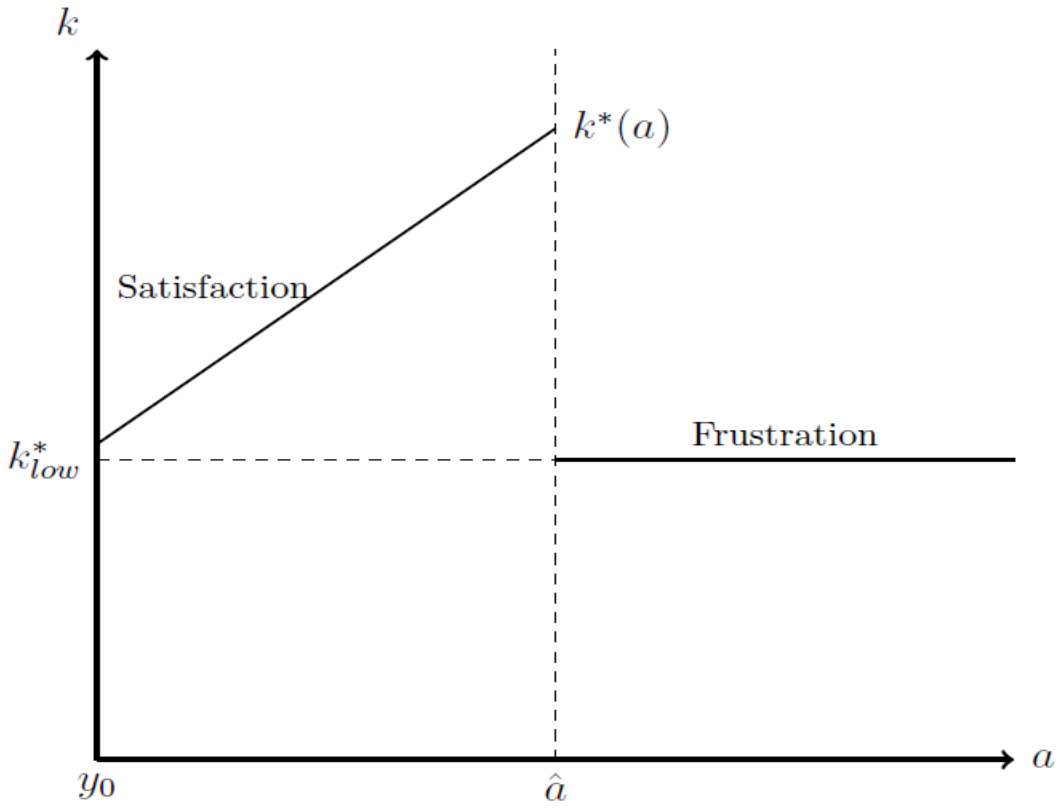


A



B

- This yields the following non-monotonic relationship between aspirations and investment
- To the left of $\hat{a}$, aspirations are low, and investment increases with aspirations
- To the right of $\hat{a}$, aspirations are too high, and investment drops to k^*_{low}



- If every individual in the sample had the same $\hat{a}$, then the aggregate relationship between aspirations and investment would look like the step function
- However, different people have different $\hat{a}$ - it can be shown that $\hat{a}$ depends on the initial endowment, the rate of return on investment and the discount factor
- This distribution of $\hat{a}$ in the population is likely to manifest itself in an inverted-U shape relationship between aspirations and investment

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- Note: All of this has been derived as a function of *aspirations*
- Ray (2006) and Genicot and Ray (2017) discuss the idea that one's investments are not driven by aspirations per se, but by the *gap* between aspirations and current status:

$$W^{gap} = \frac{W_{asp} - W_{actual}}{W_{asp}}$$

- The model can be modified to use aspirations gaps or ratios instead
- The theoretical prediction is then that at low levels of aspirations gaps investments are low, they rise with aspirations gaps up to a point, and then decline

⇒ an inverse U-shaped relationship between aspirations gaps and investments

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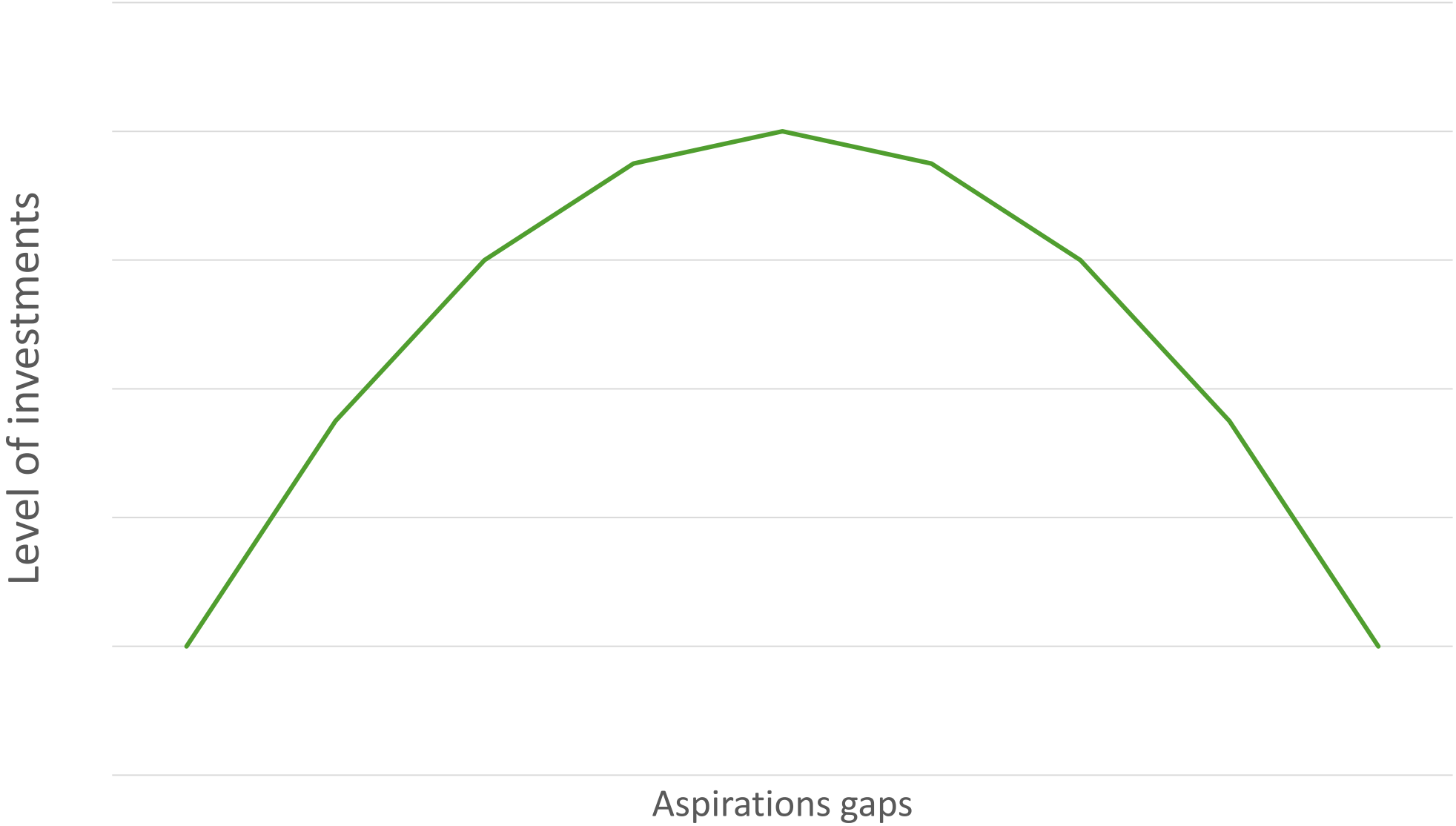
Hypothesized relationship between aspirations gaps and investments



NOW TO PART I: ASPIRATIONS FORMATION

Formation of aspirations: the “aspirations window”

- We talked about how aspirations are formed by an individuals social environment
- Ray (2006) defines the relevant piece of the social environment - the aspirations window - as the set of “similar” or “attainable” individuals
- What do we mean by ‘similarity’?
  - Geographical: people living within the same village, region, district (Ferrer-i-Carbonell 2005, Knight and Gunatilaka 2012, Fafchamps and Shilpi 2008)
  - Social network-based: people within the same social networks, including caste groups (Janzen et al 2017, Munshi and Myaux 2006)
- Then, what aspect of the reference group?
  - Average level of the outcome in the reference group (“common aspirations”)
  - Average of those with more - ‘upward-looking’ aspirations (Duesenberry 1949)
  - Average among those with less
  - Local aspirations within population/income neighbourhoods

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Preview of our findings

- We find that reference groups matter in the formation of aspirations, but that different reference groups matter in different ways
- Both income and social influence aspirations are driven by past experience
- In addition, social influence aspirations are indeed ‘upward-looking’
- Interestingly, we find only limited evidence of the inverse-U shape between aspirations gaps and levels of investment
- The strongest relationships are between income gaps and social influence investments, and vice versa

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DATA & MEASUREMENT

Data

- Cross-sectional data from a baseline survey from 8 districts in 5 states in India
- First round of data collection for a 4-year impact evaluation of a program initiated by PRADAN, an NGO that works with women's self help groups (SHGs)
- Selection:
  - States and districts were selected by PRADAN
  - Within each district, 3 blocks were chosen, and 5-7 villages were selected at random from each block
  - 20 ever-married women were selected at random from within each village
- Final sample was **2744** women from **136** villages

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Measuring aspirations

- We collect information on aspirations for income, assets, social influence and children's education
- For **own aspirations**, we asked
  - What is the level of [income/assets/social influence] you have at present?
  - What is the level of [income/assets/social influence] you would like to achieve?
- For **aspirations for their children's education**, we asked
  - What is the level of education you would like/would have liked your son to achieve?
  - What is the level of education you would like/would have liked your daughter to achieve?

- I focus in this presentation on the results from **income** and **social influence**

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More on measurement...

- Concepts like social influence and asset ownership are hard to quantify, especially for less educated respondents
- We used a ladder to elicit ordinal responses
- Respondents were shown a ladder like this one before each set of questions
- They were told “the lowest [highest] rung represents the worst [best] possible scenario in regard to this indicator”

Finally, how might SHGs affect aspirations?

Data on aspirations was collected because it was hypothesized that group membership could affect the individual's capacity to aspire. How?

1. By reducing *internal* constraints to information
   - Pooling information between group members
   - Information can be credibly conveyed to group members
2. By reducing *external* constraints to information
   - Groups can convey information to those outside the group as well (government, service providers etc)
   - Numbers give a sense of credibility
3. Coordination devices
   - Groups help as coordination devices, helping members commit to certain actions
   - This can affect the resultant equilibrium

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EMPIRICAL METHODOLOGY

Empirical methodology – aspirations formation

Research question 1: What are the determinants of aspirations formation, both internal to the individual and external to them?

We estimate the following equations using OLS:

$$Y^{g}_{ihvbds} = \alpha + \beta\overline{Y^{g}_{-i}} + \gamma X_{ihvbds} + \delta Z_{hvbds} + \zeta_s + \eta_d + \theta_b + \epsilon_{ihvbds}$$

Y^{g}_{ihvbds} is the level of aspirations around outcome Y for individual i in household h of village v in block b of district d in state s

and

$$Y^{g}_{ihvbds} = \alpha + \beta_1\overline{Y^{g}_{abovei}} + \overline{\beta_2 Y^{g}_{belowi}} + \gamma X_{ihvbds} + \delta Z_{hvbds} + \zeta_s + \eta_d + \theta_b + \epsilon_{ihvbds}$$

Y^{g}_{abovei} is the average level of *Y* among those in group *g* who have a higher level of *Y* than individual *i* (Y^{g}_{belowi} is defined analogously)

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Our reference groups (“aspirations windows”)

- Geographical: Within the same village
- Caste-based: Within the same caste (across villages)
- Geography x caste: Within district, by caste groups

In an ideal situation...

1. ...we would want sub-caste information, we do not collect that in our surveys, and
2. ...we would want information within village, by caste. Unfortunately our sample is too small to allow us to do that.

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Empirical methodology – aspirations and investment

Research question 2: What is the relationship between aspirations gaps (the difference between current status and aspired to status) and various kinds of investments?

We estimate the following equation using OLS:

$$\boldsymbol{Y_{ihvbds} = \alpha + \beta W^{gap}_{ihvbds} + \mu (W^{gap}_{ihvbds})^2 + \gamma X_{ihvbds} + \delta Z_{hvbds} + \zeta_s + \eta_d + \theta_b + \epsilon_{ihvbds}}$$

where the aspirations gap variable is defined as

$$W^{gap} = \frac{W_{asp} - W_{actual}}{W_{asp}}$$

We look at **three types of investments: financial, social** and **educational**

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Our measures of investments

- **Financial/Income-related:**
  - whether the respondent woman is part of an SHG;
  - if yes, whether she takes part in the SHG's savings and credit activities;
  - whether anyone in the household has taken a loan in the last 12 months
- **Social:**
  - # people with whom the woman has had a conversation in the last month;
  - # people from whom the woman thinks she can borrow INR 1000;
  - # people with whom the woman can leave her child in case of an emergency;
  - natural log of expenditure on special events (e.g. weddings, funerals, baptisms, partial and final lifting of mourning, dowry, ceremonies after birth) in INR
- **Educational**
  - # years of child's education
  - Expenditure on schooling

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RESULTS

Photo credit: Sam Scott

Descriptive statistics

- The average respondent is 32 years old, and has slightly over 2 years of education
- 92% of the sample is married
- 86% of the households were Hindu, and 66% were ST
- 38% of the respondents were members of an SHG
- Of these, 75% had participated actively in the savings and credit activities of the SHG
- 21% of the households had taken a loan in the previous year
- Average total HH expenditure on events was about INR 2800, in the year prior to the survey
- Average total HH expenditure on schooling was INR 1282, higher at INR 1596 among those with school-age children

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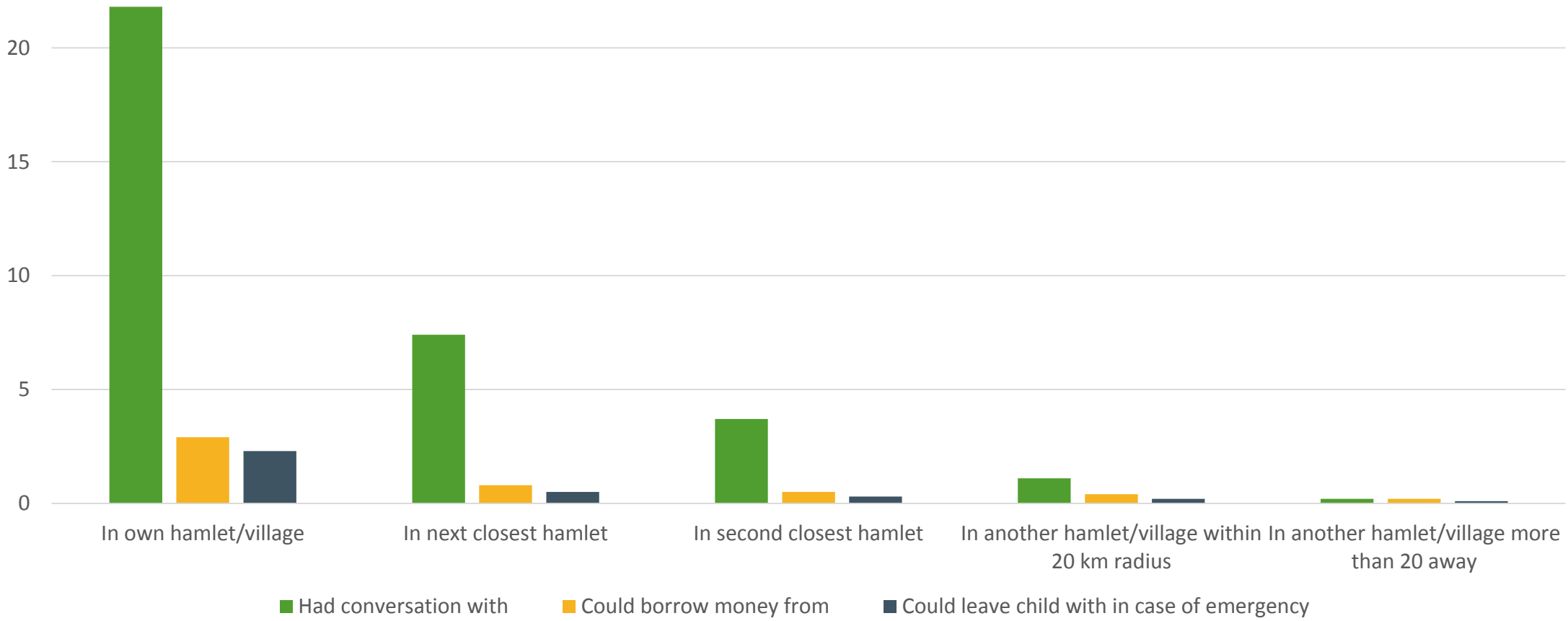
Descriptive statistics (contd.)

Social networks decline monotonically with distance



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ASPIRATION FORMATION

The formation of income aspirations

	Reference groups					
	Within caste groups	Within caste groups	Within village	Within village	Within district, by caste	Within district, by caste
(Natural log of) Average income in reference group	0.02		0.08**		0.06	
	(0.10)		(0.04)		(0.05)	
(Natural log of) Average income above		-0.30***		-0.12***		-0.30***
		(0.05)		(0.03)		(0.05)
(Natural log of) Average income below		-0.38***		-0.06**		-0.16**
		(0.08)		(0.02)		(0.06)
Current income (natural log)	0.95***	1.36***	0.95***	1.05***	0.96***	1.15***
	(0.01)	(0.07)	(0.01)	(0.02)	(0.01)	(0.06)
N	2625	2617	2625	2372	2625	2564
R-sq	0.934	0.939	0.935	0.950	0.934	0.942

The formation of aspirations around social influence

	Reference groups					
	Within caste groups	Within caste groups	Within village	Within village	Within district, by caste	Within district, by caste
Average social status level in reference group	1.36***		-0.20***		-0.17	
	(0.41)		(0.07)		(0.12)	
Average social status level above		-0.12		0.17**		0.21*
		(0.21)		(0.07)		(0.12)
Average social status level below		0.46		-0.40***		-0.36
		(0.35)		(0.13)		(0.22)
Current social status (scale of 1-5)	0.42***	0.36**	0.43***	0.46***	0.42***	0.40***
	(0.04)	(0.17)	(0.04)	(0.08)	(0.04)	(0.11)
N	2641	2633	2641	2379	2641	2578
R-sq	0.184	0.179	0.190	0.172	0.187	0.183

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What are the internal factors that matter?

- Respondent education (+)
- Highest education of male HH member (+)
- HH head is SC (-)
- HH head is ST (-)
- These four associations come out in all regressions, with strongly significant coefficients
- The results on SC and ST are most interesting – years of marginalization?

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Aspirations formation: Summary

- Income aspirations seem to be driven largely by the current level of income
- The greater the individual's current income, the greater her aspirations for income
- For social influence, reference groups seem to matter
- When defined within a narrower geography, aspirations for social influence are upward-looking, as predicted by Duesenberry (1949)
- Other characteristics also matter, notably caste status

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ASPIRATIONS AND INVESTMENT

Financial investments and the aspirations gaps

Dependent variable:	Respondent woman is an SHG member		Respondent woman participates in SHG savings and credit activities		Someone in the household took a loan in last 12 months	
Type of aspirations gaps:	Income	Social influence	Income	Social influence	Income	Social influence
Aspirations gap	-0.19	0.25**	-0.08	0.56**	0.22	0.47***
	-0.17	-0.12	-0.2	-0.22	-0.18	-0.15
Square of aspirations gap	0.21	-0.29*	-0.04	-0.36	-0.27	-0.39*
	-0.17	-0.16	-0.21	-0.27	-0.18	-0.21
Other associations	Respondent woman's age (+), maximum years of education of male household member (+)		Respondent woman's age (+), respondent woman's education (+), Hindu (-), number of positive shocks experienced in last year (+)		Respondent woman's age (+), maximum years of education of male household member (+), SC HH (-)	
N	2588	2459	993	945	1677	1567
R-sq	0.1	0.11	0.137	0.158	0.147	0.166

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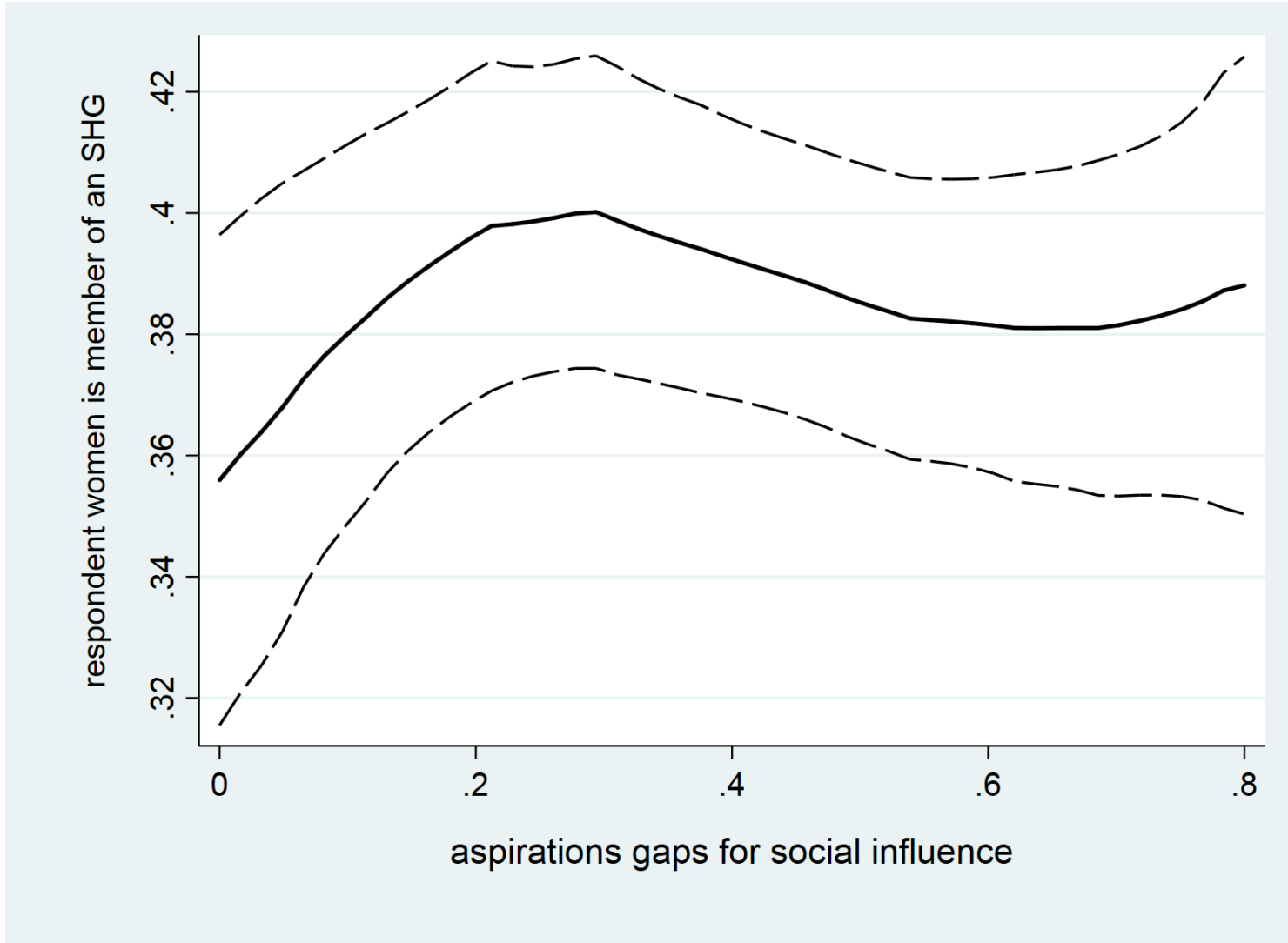
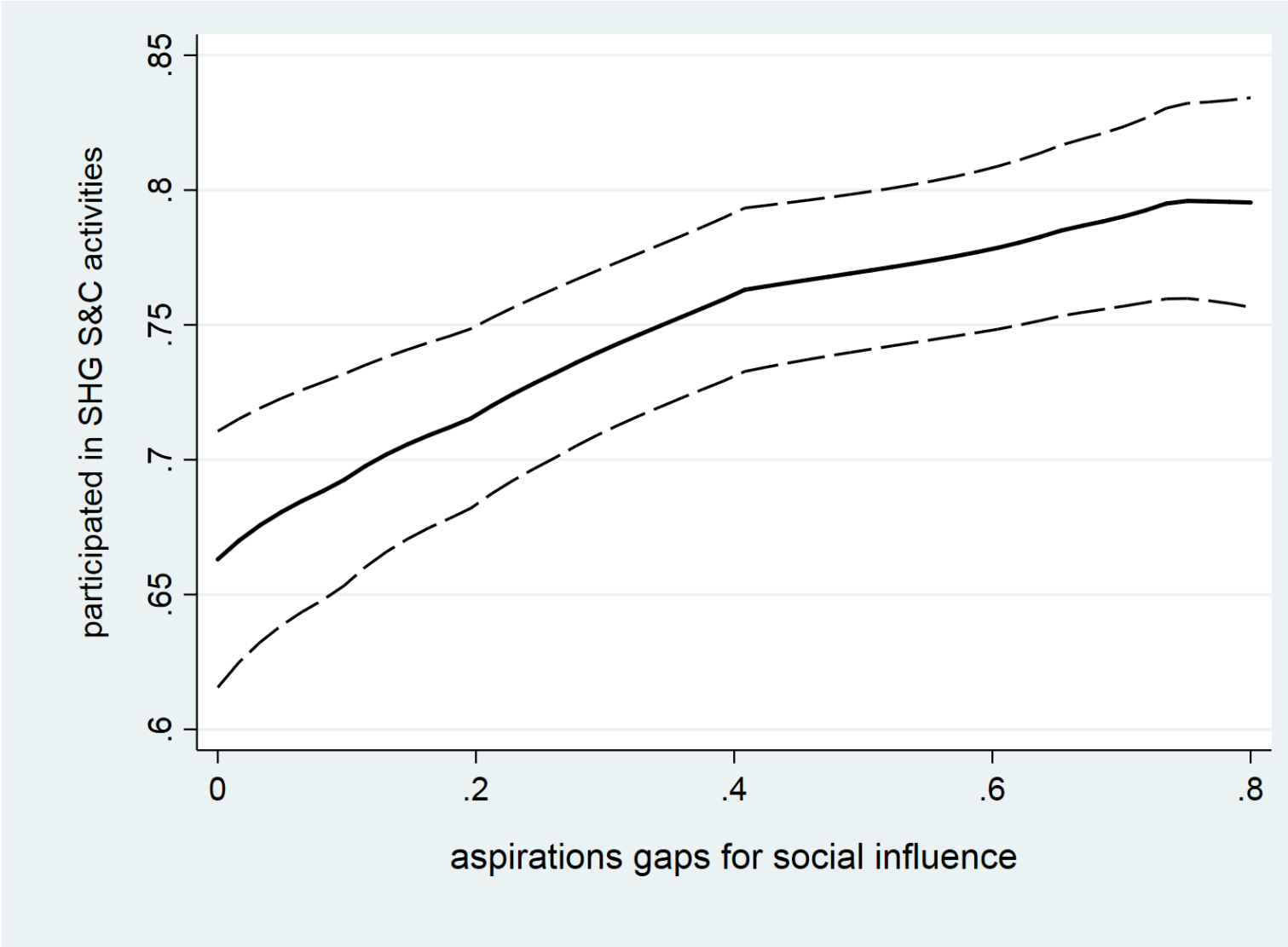
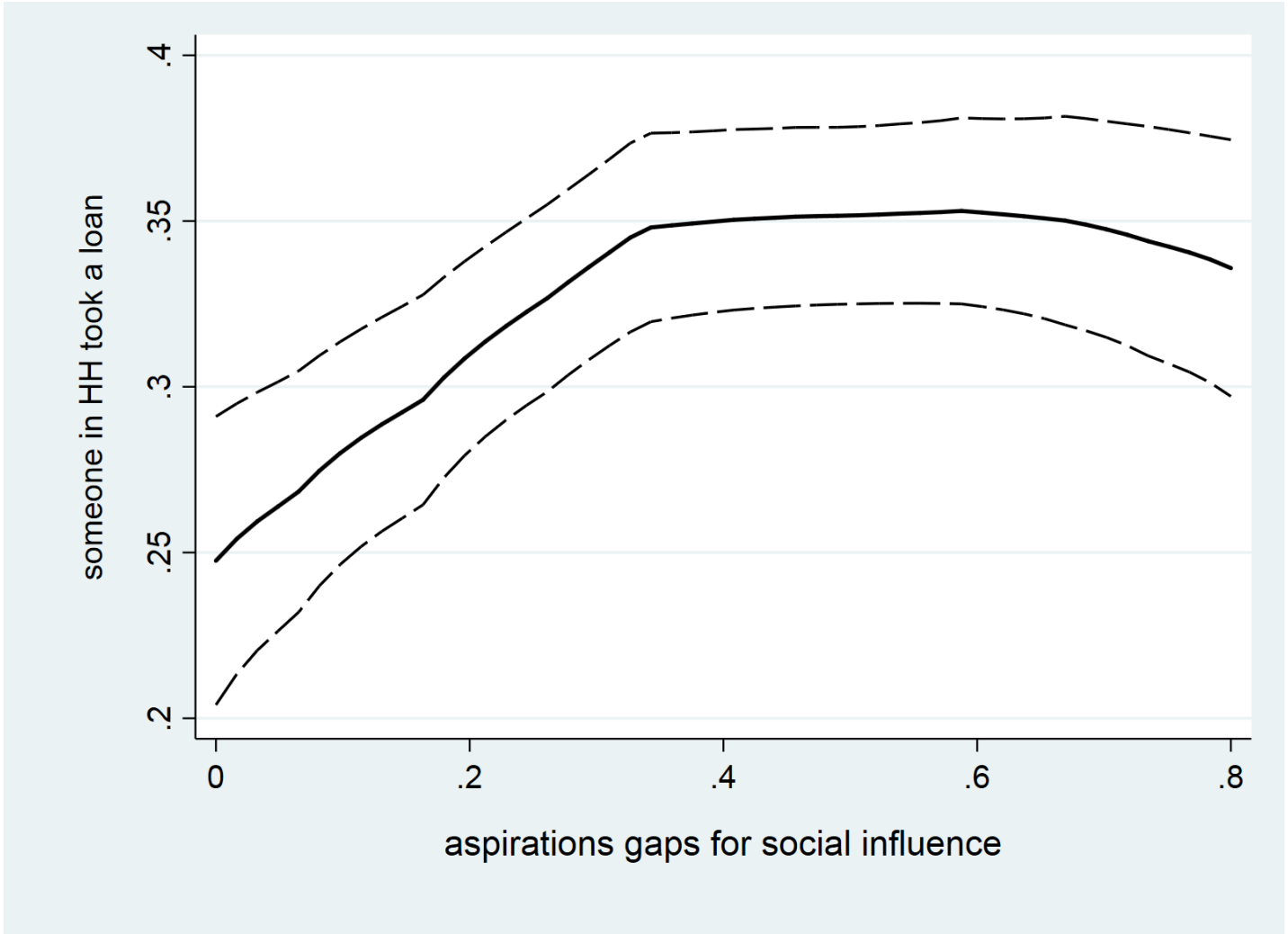

respondent women is member of an SHG
.32
.34
.36
.38
.4
.42
0
.2
.4
.6
.8
aspirations gaps for social influence


participated in SHG S&C activities
.6
.65
.7
.75
.8
.85
0
.2
.4
.6
.8
aspirations gaps for social influence


someone in HH took a loan
.2
.25
.3
.35
.4
0
.2
.4
.6
.8
aspirations gaps for social influence

Social investments and aspirations gaps

Dependent variable:	# people respondent can have a conversation with in own hamlet and neighboring hamlets (scores for component 1)		# people respondent can borrow money from in own hamlet and neighboring hamlets (scores for component 1)		# people respondent can leave her child with in own hamlet and neighboring hamlets (scores for component 1)	
Type of aspirations gaps:	Income	Social infl.	Income	Social infl.	Income	Social infl.
Aspirations gap	-2.21***	0.97*	0.93*	-0.55	1.38**	-0.35
	-0.8	-0.57	-0.48	-0.51	-0.61	-0.53
Square of aspirations gap	1.52**	-1.52*	-1.36***	0.74	-1.73***	-0.04
	-0.71	-0.82	-0.52	-0.62	-0.65	-0.57
Other associations	Respondent woman's age (+), respondent woman's education (+), number of positive shocks experienced in last year (+)		Respondent woman's age (+), respondent woman's education (+),, HH size (-), number of negative shocks experienced in last year (+)		Respondent woman's age (+), respondent woman's education (+), maximum years of education of male household member (+), ST HH (-), HH size (-)	
N	1731	1612	1768	1650	1760	1642
R-sq	0.214	0.207	0.069	0.066	0.037	0.04

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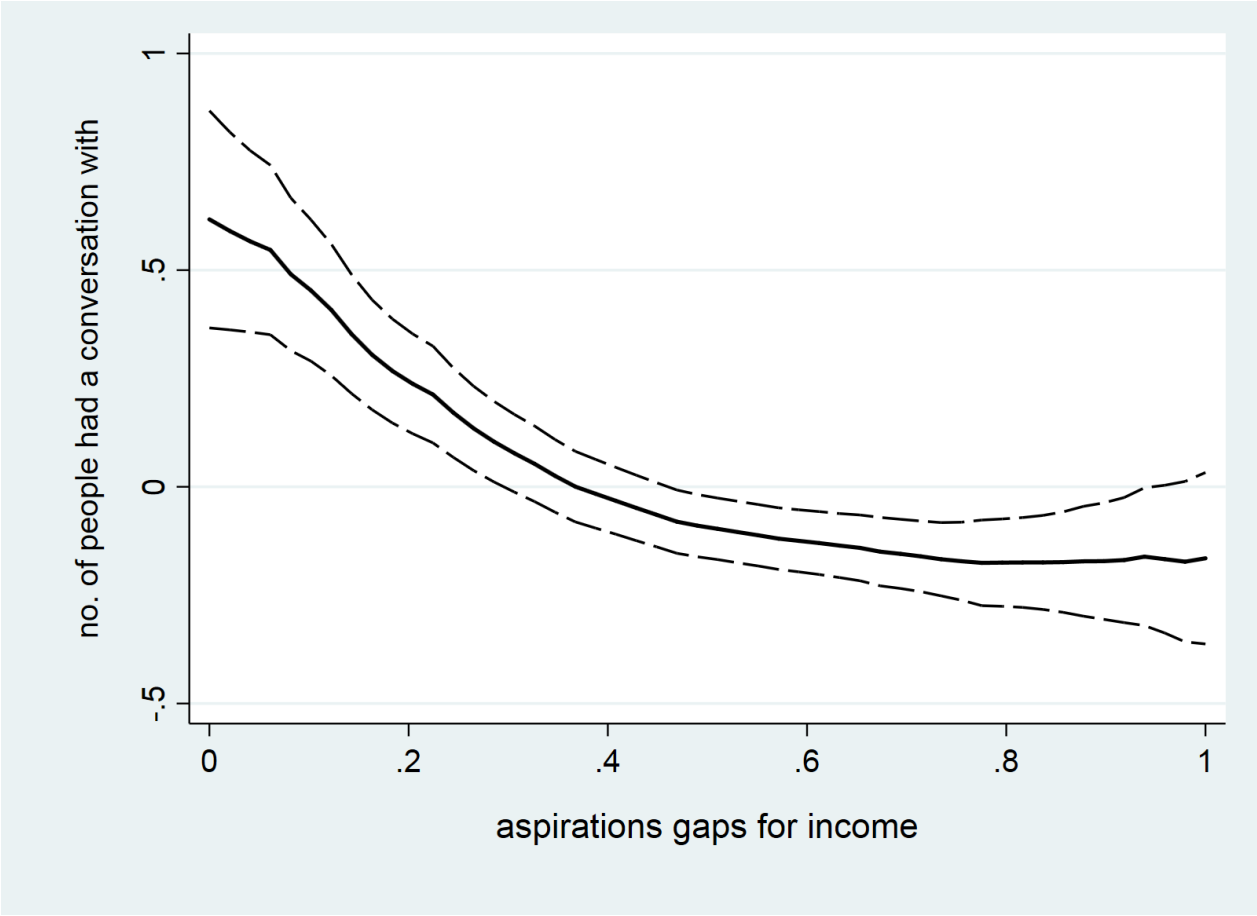
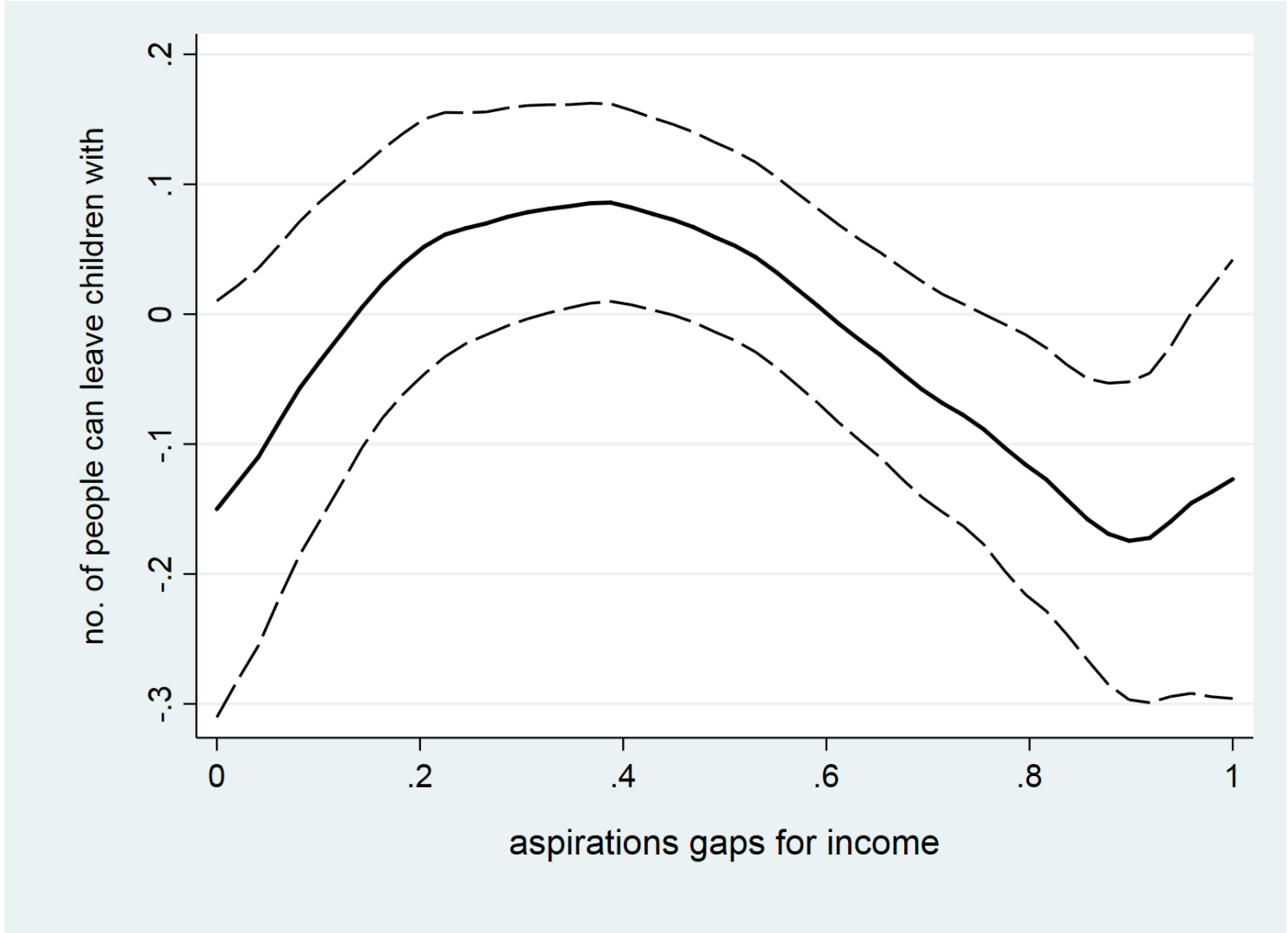
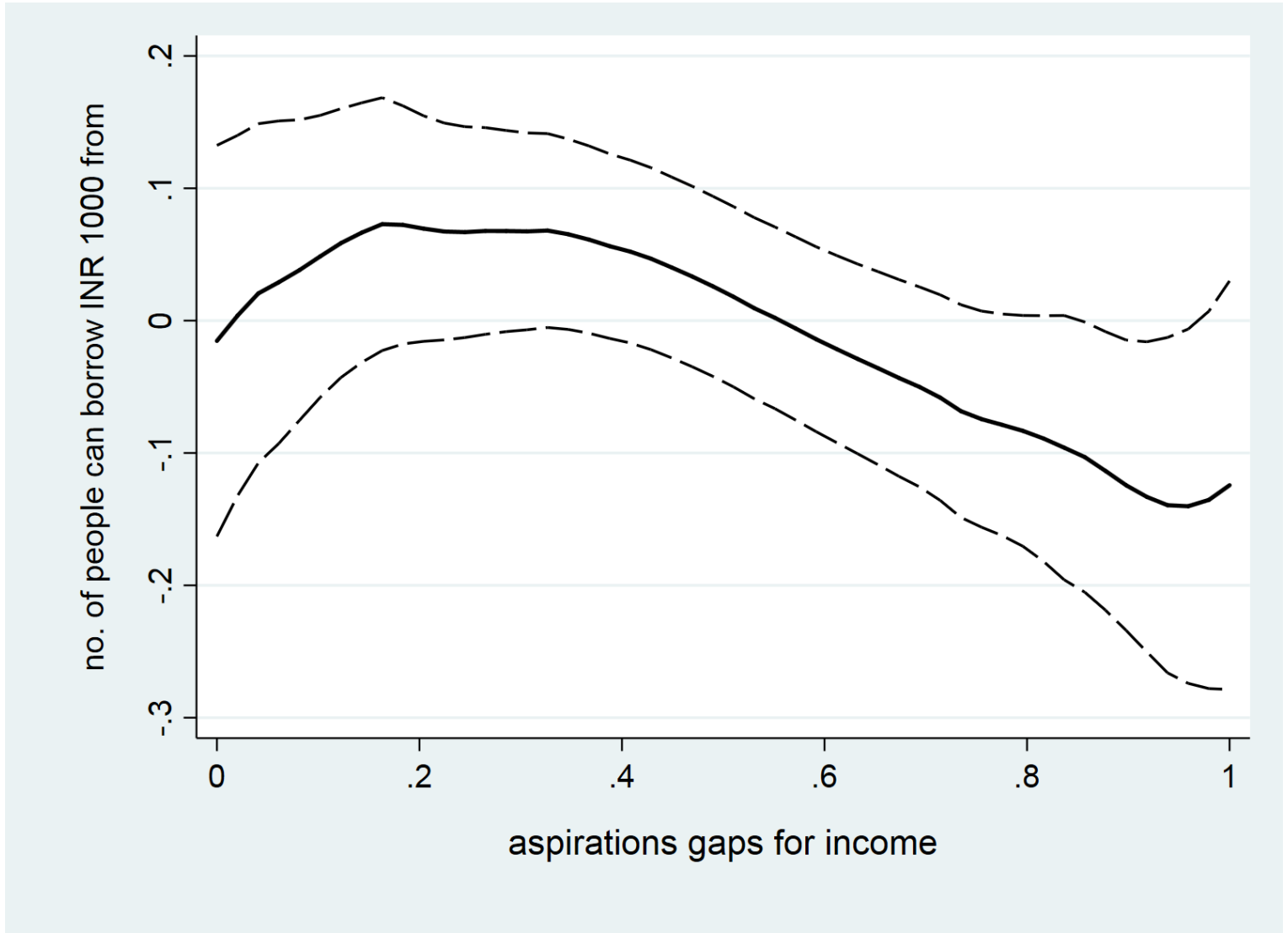

no. of people had a conversation with
1
.5
0
-.5
0
.2
.4
.6
.8
1
aspirations gaps for income


no. of people can leave children with
.2
.1
0
-.1
-.2
-.3
0
.2
.4
.6
.8
1
aspirations gaps for income


no. of people can borrow INR 1000 from
.2
.1
0
-.1
-.2
-.3
0
.2
.4
.6
.8
1
aspirations gaps for income

Social investments and aspirations gaps (contd)

Dependent variable:	**(Natural log of) total expenditure on weddings, funerals etc.**	
Type of aspirations gaps:	**Income**	**Social influence**
Aspirations gap	1.36**	-0.15
	-0.67	-0.84
Square of aspirations gap	-1.57**	-0.86
	-0.78	-1.1
Other associations	Respondent woman's education (+), ST (-), HH size (+)	
N	658	630
R-sq	0.258	0.268

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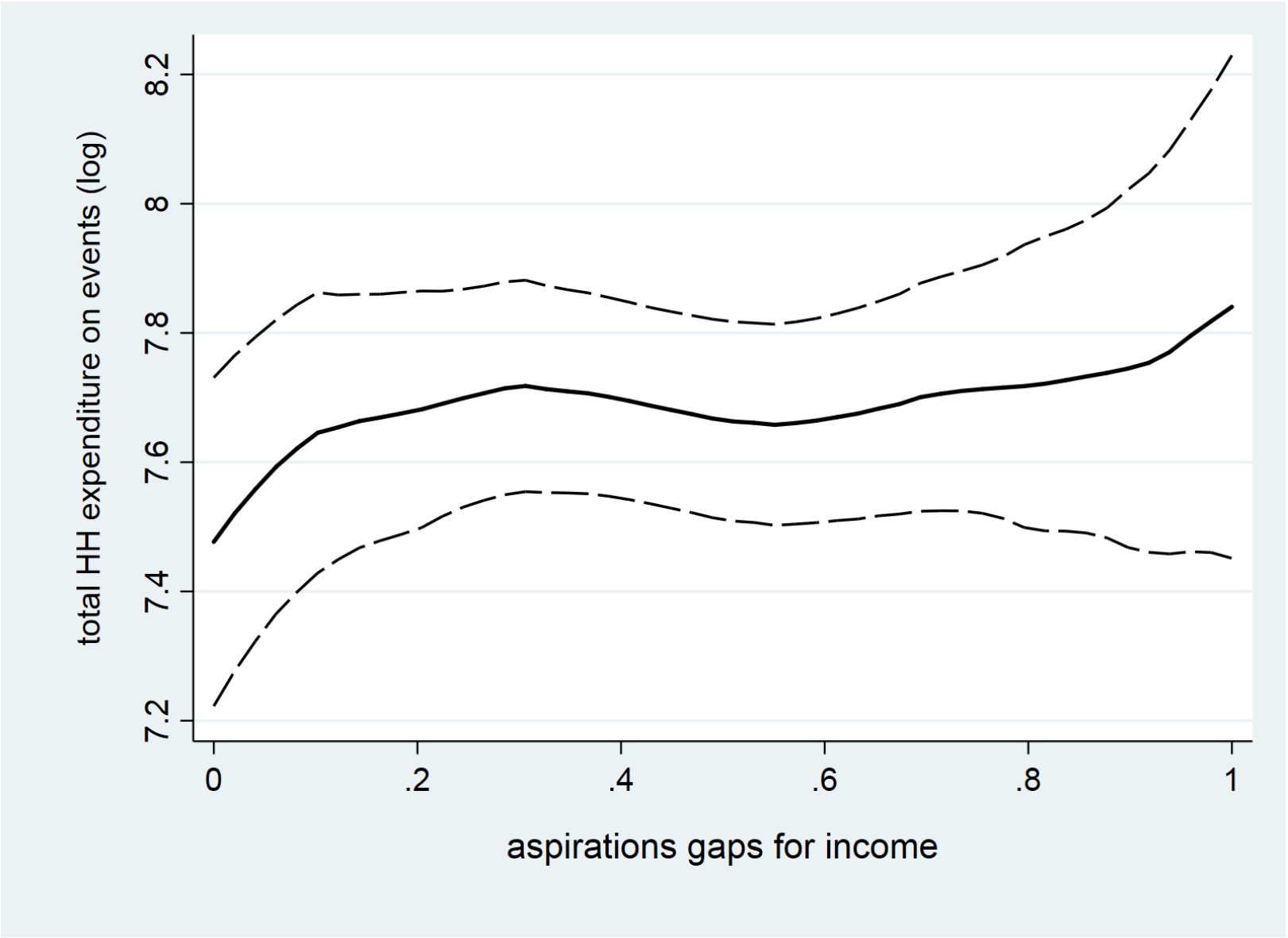
total HH expenditure on events (log)
7.2
7.4
7.6
7.8
8
8.2
0
.2
.4
.6
.8
1
aspirations gaps for income

Child education and aspirations gaps

Dependent variable:	Log total expenditure on schooling (INR)		Child education in years	
Type of aspirations gaps:	**Income**	**Social infl.**	**Income**	**Social infl.**
Aspirations gap	-1.09**	0.93**	-0.12	1.10**
	-0.54	-0.47	-0.65	-0.5
Square of aspirations gap	1.09**	-1.06*	-0.28	-1.43**
	-0.55	-0.6	-0.62	-0.61
Other associations	Respondent age (+) and education (+), highest education of male member of HH (+), number of positive shocks experienced in last one year (-), number of children between 5 and 21 (+)		Respondent age (+), marital status (+), highest education of male member of HH (+), ST (-), SC (-), male child (-), child age (+)	
N	1475	1412	3559	3352
R-sq	0.239	0.249	0.699	0.699

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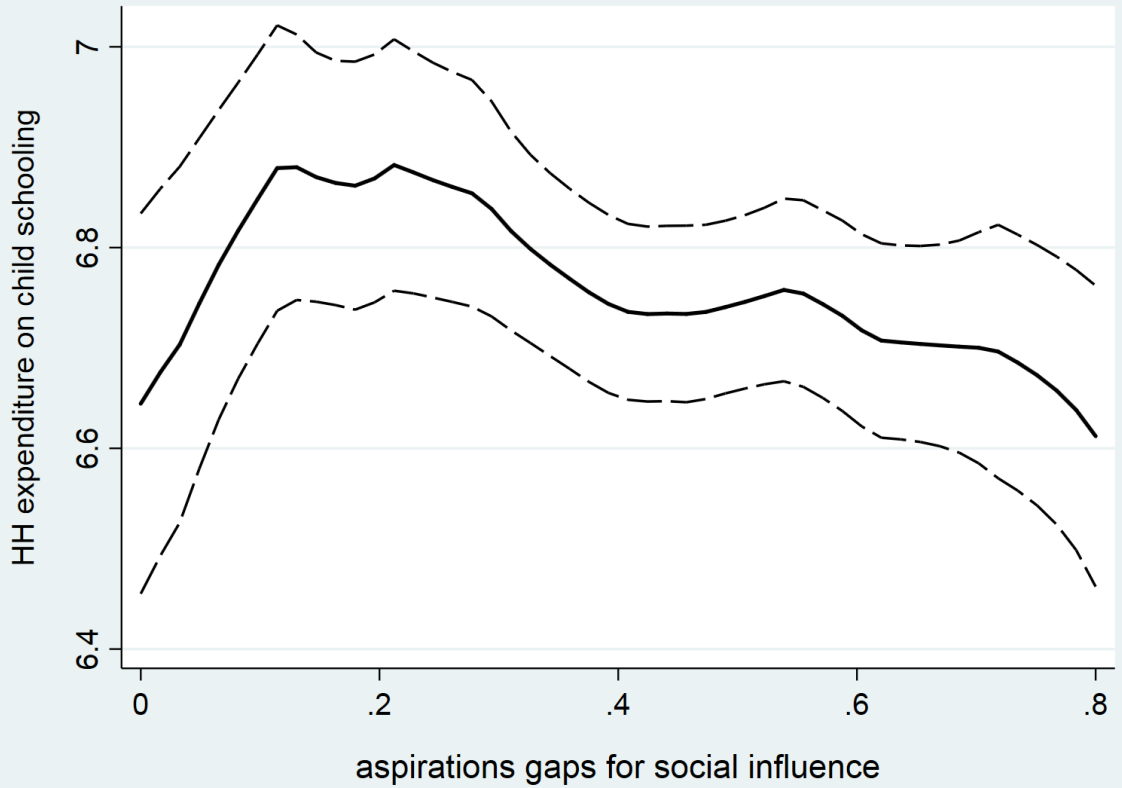
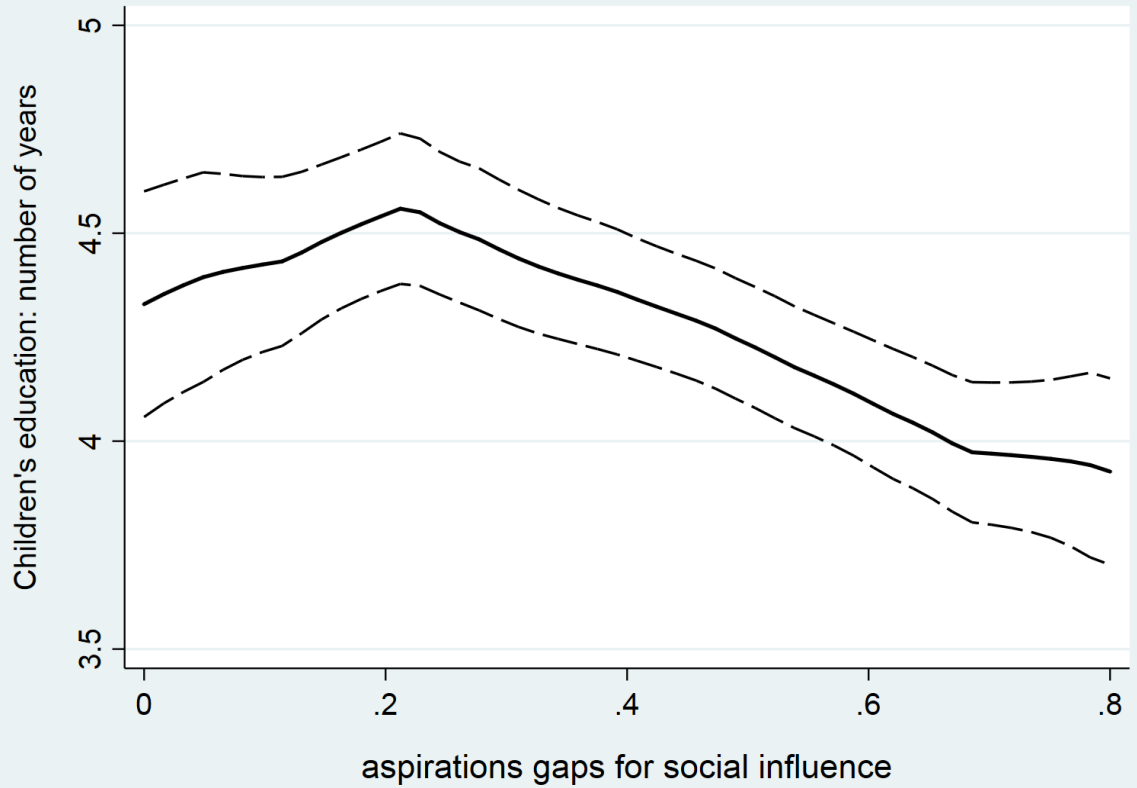

HH expenditure on child schooling
6.4
6.6
6.8
7
0
.2
.4
.6
.8
aspirations gaps for social influence


Children's education: number of years
3.5
4
4.5
5
0
.2
.4
.6
.8
aspirations gaps for social influence

Conclusion

- Aspirations for a given dimension are largely driven by current status on that dimension
- In addition to the role of current status, we find also that the household head belonging to an SC or ST group is almost always negatively associated with aspirations
- Reference groups play a role, but in different ways
- Social status aspirations are ‘upward-looking’
- Aspirations for income, conversely, are negatively influenced by the average levels of income among those who have more

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Conclusion (contd)

- Finally, we find less convincing evidence of the inverse-U shaped relationship between aspirations gaps and investment than others
- Part of this could be because our measures of investment are simplistic
- Social influence aspirations gaps seem to be major drivers of both financial investments and child education
- In the Indian context, education and income are often seen as ways to rise up the social ladder, so this is not surprising
- How do aspirations change over time? Avenue for further research

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Policy implications

- There is plenty of evidence that aspirations can change quite quickly with interventions (Macours and Vakis 2014; Beaman et al. 2012; Bernard et al 2013; Janzen et al. 2017)
- However, much of the experimental work has ignored the fact that aspirations can be shaped by those in one's reference group
- This is the first paper that studies this in the Indian context, and in the context of women's groups
- Being able to accurately characterize aspirations and their formation is a key element to being able to alter the way investments are made, and to help the poor escape the low aspirations-low investment traps

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Thank you

Photo credit: Sam Scott

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