

# Poverty, Social Disadvantage, and Parental Beliefs about Academic Performance

Evidence from India

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# Motivation

- Parental beliefs about child academic ability guide educational investments and outcomes
  - Beliefs influence perceived cost of effort, return to education
  - Direct impacts: Education and human capital investment decisions (List, Pernaudet, and Suskind, 2021; Dizon-Ross, 2019; Bobba & Frisancho, 2016; Jensen, 2010)
  - Indirect impacts: Self-fulfilling prophecies and motivational channels (Hill & Jones, 2017; Papageorge et al. 2018)
- Poverty and social identity may constrain parental beliefs
  - Existing evidence related to child self-beliefs (Mukherjee, 2017; Guyon & Huillery, 2020)
  - Evidence related to parental beliefs: Today
- Some parallels to the literature on aspirations and hope
  - Poverty may constrain aspirations (Dalton et al., 2016; Genicot & Ray, 2017; Ray, 2006), hope (Duflo, 2012; Lybbert & Wydick, 2018), and related outcomes
  - These may reduce effort, investment, outcomes in a reinforcing cycle

## Research Questions

1. Do beliefs among parents living in poverty and/or belonging to a more disadvantaged caste group exhibit a systematic negative bias?
2. Is there a causal link between poverty or social disadvantage and negatively biased beliefs?
3. What associated mechanisms might give rise to negatively biased beliefs?

# Research Questions

1. Do beliefs among parents living in poverty and/or belonging to a more disadvantaged caste group exhibit a systematic negative bias?  
→ Presenting evidence today
2. Is there a causal link between poverty or social disadvantage and negatively biased beliefs?  
→ Suggestive evidence, work in progress
3. What associated mechanisms might give rise to negatively biased beliefs?  
→ Work in progress

## Data: India Human Development Survey (IHDS)

- Nationally-representative, 2 waves, ~42,000 households
- Household characteristics: Education, consumption, etc.
- Up to 2 children per household aged 8-11
- (1) Scores: Math and reading
  - (a) Combine into composite level
  - (b) Standardized within same age, district, sector
  - Below average:  $>1$  SD below mean
  - Above average:  $>1$  SD above mean
  - Average: within 1 SD of mean
- (2) Parental beliefs:
  - Response to *"Is/was . . . an average student, better than average, or below average?"*
- Pairing (1) and (2)  $\rightarrow$  measure of under/overestimation

## Preview of Core Findings

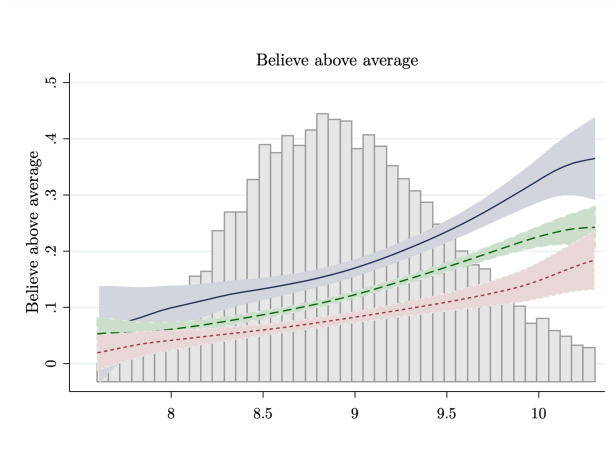
- Link between parental beliefs and SES: income, caste identity
  - Low income, SCST more likely to believe child below average
  - High income, non-SCST more likely to believe child above
  - Patterns persist after accounting for performance: Belief gaps outpace performance gaps along these lines
- Link between parental beliefs and context: urban status, district mobility, district poverty, etc.
- (Endogenous) beliefs correlate with educational investments
- (Plausibly exogenous) negative income shocks negatively influence beliefs

## Core finding: Link between parental beliefs and income

	(1) Believe above average	(2) Believe above average	(3) Believe below average	(4) Believe below average
Log household consumption	0.0410*** (0.007)		-0.0360*** (0.008)	
Below poverty line		-0.0160** (0.007)		0.0504*** (0.010)
Composite Level Score	0.118*** (0.011)	0.125*** (0.011)	-0.295*** (0.016)	-0.295*** (0.015)
SCST	-0.0184*** (0.006)	-0.0234*** (0.006)	0.0132 (0.009)	0.0133 (0.008)
Sample	Full	Full	Full	Full
Fixed Effects	Dist	Dist	Dist	Dist
Mean for Average Child	0.128	0.128	0.131	0.131
R-squared	0.111	0.108	0.175	0.176
Observations	22726	22722	22726	22722

- Strong link between household income (poverty status) and beliefs (accounting for performance, age, gender, etc.)
- Similar results using “overestimate” and “underestimate”
- Robust to using scores standardized relative to same district and sector, scores standardized relative to all-India, wave 1 or 2 only, etc.

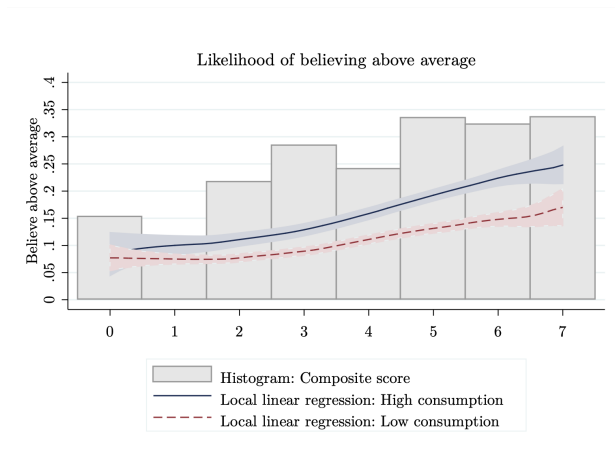
## Core finding: Income-based belief gaps



- Beliefs aligned with performance (gap between above/average/below)
- For given performance, more positive beliefs as consumption rises (upward slope)

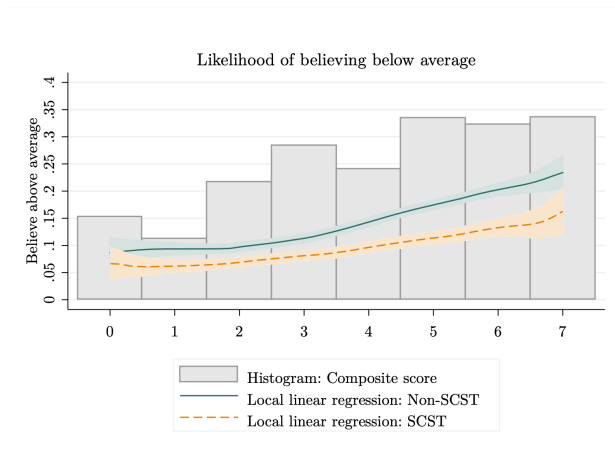


## Core finding: Income-based belief gaps



- Beliefs aligned with performance (upward slope)
- For given performance, more positive beliefs for non-poor (gap)

## Core finding: Caste-based belief gaps



- Beliefs aligned with performance (upward slope)
- For given performance, more positive beliefs for non-SCST (gap)

## Relative performance and income

	(1)	(2)
	Believe above average	Believe below average
Gap with village average performance	0.0168*** (0.003)	0.0265*** (0.003)
Low cons $\times$ Gap with village average performance	-0.00934** (0.004)	0.0110*** (0.004)
Sample	Full	Full
Fixed Effects	Dist	Dist
Mean for Average Child	0.128	0.131
R-squared	0.105	0.158
Observations	22715	22715

- (1) uses  $Score_i - \overline{Score}_v$  (distance above village mean)
- (2) uses  $\overline{Score}_v - Score_i$  (distance below village mean)
- High relative score predicts positive beliefs, attenuates for poorest HHs
- Low relative score predicts positive beliefs, more so for poorest HHs

## Link between parental beliefs and context

	(1) Believe above average	(2) Believe above average	(3) Believe below average	(4) Believe below average
Low cons	-0.0247*** (0.007)	-0.00429 (0.009)	0.0188** (0.009)	-0.00382 (0.010)
High mobility district	0.00510 (0.010)	0.0367*** (0.014)		
High mobility district × Low cons		-0.0511*** (0.015)		
High poverty district			0.0685*** (0.012)	0.0449*** (0.012)
High poverty district × Low cons				0.0382*** (0.014)
Sample	Full	Full	Full	Full
Fixed Effects	State	State	State	State
Mean for Average Child	0.128	0.128	0.131	0.131
R-squared	0.0651	0.0663	0.127	0.127
Observations	22715	22715	22715	22715

- Positive beliefs in high-mobility districts,<sup>1</sup> less so for poorest HHs
- Negative beliefs in high-poverty districts, especially for poorest HHs

<sup>1</sup>Mobility measures from Asher et al. (2021)

## Core finding: Link between income shocks and beliefs

	(1)	(2)	(3)	(4)
	Believe above average	Believe above average	Believe below average	Believe below average
Positive rainshock	0.00658 (0.020)	0.00849 (0.021)	0.00169 (0.034)	-0.0168 (0.041)
Negative rainshock	-0.0483** (0.022)	-0.0616** (0.024)	0.0627* (0.037)	0.0883** (0.045)
Sample	Panel	Rural Panel	Panel	Rural Panel
Fixed Effects	HH	HH	HH	HH
Mean	0.109	0.0958	0.178	0.198
R-squared	0.508	0.493	0.526	0.533
Observations	4456	3276	4456	3276

- Restricted to households with children observed in both waves
- Positive (negative) rainfall shock defined as annual average district-level rainfall above historical 80th percentile (below 20th)  
(as per Jayachandran, 2006; Kaur, 2019)
- Beliefs respond negatively to negative shocks

## Core finding: (Endogenous) beliefs linked to investments

	(1)	(2)	(3)	(4)	(5)
	Annual educational spending (Rs.)	Weekly minutes educational activities	Any tutoring	Absence last 30 days	Future track science or commerce
Believe above average	860.3*** (118.178)	49.31** (22.248)	0.0608*** (0.013)	0.0527 (0.153)	0.0677*** (0.016)
Believe below average	17.95 (74.098)	-58.77*** (19.156)	-0.00311 (0.010)	0.909*** (0.206)	0.0221** (0.011)
Sample	Full	Full	Full	Full	Wave 1
Fixed Effects	Dist	Dist	Dist	Dist	Dist
Mean for Average Child	2822.5	2504.6	0.191	3.033	0.153
R-squared	0.374	0.240	0.305	0.255	0.246
Observations	22381	20967	21142	21906	8492

- Beliefs correlated with investments (likely potential reverse causality)
- This is in addition to correlation between income, urban status, performance with investments

## Discussion of Potential Mechanisms (Next Steps)

- Depression
  - Linked to negative beliefs about future performance (Kenya)
- Affect
  - Suggestive evidence that low income, low caste more likely to report their economic circumstances have gotten worse in previous years
- Lower self-efficacy
- Internalization of constraints (feedback: aspirations → beliefs)
- Negative stereotypes
- Limited access to information
  - High income report greater access to information (Kenya, USA)
  - Low income report less confidence in knowledge of perf (Kenya)
  - But: Could explain inaccuracy, doesn't explain negative bias
- Lower access to quality institutions
  - High income more confident about quality of private schools
  - But: SCST more confident about quality of govt schools
  - But: Patterns persist across income and caste within school

## Conclusion

- Evidence of negative bias in beliefs about children's academic performance among low income and more socially disadvantaged parents
- Negative bias more prevalent in high poverty contexts, less prevalent urban, high mobility contexts
- Beliefs sensitive to transient shocks to income, suggesting potential causal relationship
- Beliefs may have direct and indirect consequences for educational outcomes and human capital investments
- Next step: Test for evidence to support one of several potential mechanisms
- Next step: Design future intervention to counteract negative bias and downstream influence on investments



Thank you!

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