

Measuring subjective returns to education among children: Heterogeneity among different social identity groups in India

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Motivation

- An important determinant of demand for schooling is the expected returns or earnings from the education and the employability (Kingdon & Theopold, 2008).
- Previous work has highlighted the role of credit constraints for education that lower education despite high earnings (Attanasio & Kaufmann, 2014)
- However, other reasons such as social norms, identities and prescribed roles of different social groups can also impact education goals despite projected high educational returns (Klasen, 2014).

Therefore there are some limitations when assuming a link between expected earnings (EE) and education decisions:

- Non pecuniary incentives or social norms shape an individuals belief on earnings expectations.
- Often individuals are not aware of the actual EE for different education levels.
- Projected returns (earnings) captures part of the earnings gap for sub groups but fails to recognise the pre market discrimination already observed in education and skill (Deshpande, 2011).

The subjective earnings expectations could be a more robust proxy for schooling decisions - capture an aspirational failure for minority discriminated groups

Subjective Expectations

- Increasing use of subjective expectations to forecast and estimate dynamic structural models.
- Require fewer assumptions to model individual decisions
- It is possible to collect expectations for future outcomes on counterfactual choices that might not necessarily be the individual's actual chosen path (lower selection bias).

With this view, I collected subjective expectations of earnings for different education choices among 14- 17 year old children.

Research Questions

- How does subjective educational returns vary across children from different socio economic identities?
- Do these subjective perceptions mirror the current labor market conditions in India? i.e strong discrimination and wage gaps for certain groups
- What policy options can bridge the aspirational gaps for minority groups?

Methodological caveats

- Education decisions are not made in isolation
- Income constraints, labor market conditions, supply of quality education, social norms are complements to an individual's schooling decisions.

Endogeneity concerns;

Simultaneity bias - labor market conditions such as supply of jobs and perceptions regarding returns from education are jointly determined.

Omitted variable bias - Other unobserved measures can impact both labor market conditions and subjective Expected earnings.

While we cannot solve the endogeneity issue, we contribute to the literature as follows:

- Presence of an aspirational decline or low expectations from education for certain minority groups.
- These differences mirror the labor market structure in today's India.
- On the methodological front, the importance of assessing effects beyond the mean.
- Use of a two year panel to estimate stability in responses.

Data and Methodology

We elicit subjective expectations from returns to education among children across 8 different schools in Mumbai, India.

At the age of 25, what monthly income do you think you will earn if you completed 12th grade/diploma (technical education)/college education?

- The students were asked to specify a minimum and maximum wage they would earn if they hypothetically completed each of the above mentioned educational levels.
- Dependent variable is the mean expected earnings at each educational level; complete school, diploma or technical education, college.
- We also collect the expected probability (0-10) of earning for each education level.

Methodology: Comparison between average estimation and distributional regression for heterogeneous effects

Average Earnings Estimates (Projected vs Subjective)

		Predicted 2011-12	Subjective 2017	Subjective 2018
School	μ	0.51	0.2	0.14
Technical Education	μ	0.67	0.59	0.18
College	μ	0.86	0.74	0.16
N		143533	900	1322

Notes: Dependent variable is log of mean earnings for hourly work

Column 1 predicted hourly earnings from the NSS0 datasets 2011-12

Col 2, 3 are subjective wages collected during researchers's field work in Mumbai

Who is our 'representative agent'?

Average Earnings Estimates for all sub-groups

		Upper caste		Muslims		OBC		SC-ST	
		M	F	M	F	M	F	M	F
School	μ	0.86	0.6	0.73	0.33	0.9	0.37	0.96	0.47
Technical Education	μ	1.06	0.67	1.01	0.54	1.09	0.75	1.08	0.74
College	μ	1.02	0.59	0.93	0.52	1.04	0.7	1.05	0.7

- Both upper caste females and Muslim females have significantly low earnings expectations from higher education
- Contrary to the current labor market conditions, lower caste males and females, on average have higher earnings expectations than upper caste children.

Not the complete picture

- Beyond the mean - Distributional Regression
- Policy effects are heterogeneous

Distributional Regression - looking beyond the mean

GAMLSS (Kneib et al, 2018)

- Distributional regression or GAMLSS - Generalized Additive Models for Location Scale and Shape.
- Not only observes the conditional mean (location), variance (scale) but also the skewness (skewed left or right)
- Location, scale and shape of the distribution is allowed to change with a change in the explanatory variable

India case study: Attempt to use the GAMLSS framework to explain the subjective earnings expectations for different levels of education

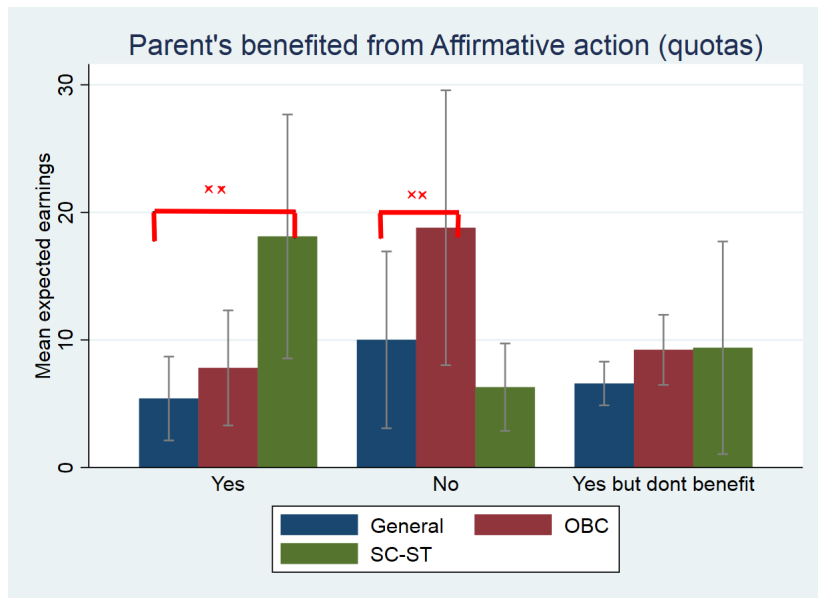
- Show varying distributions of earnings expectations for different identity groups
- Non linear effect of parent's education

eg. Instead of assuming a specific relation between parent's education and earnings expectation, I show expectations of children for a specific level of father's education (years of education = 10 years (Median education in the sampel))

Kendall's Tau/Skewness - Controlling for Father's education

		Upper caste		Muslims		OBC		SC-ST	
		M	F	M	F	M	F	M	F
School	τ	0.59	0.45	0.41	0.30	0.55	0.40	0.49	0.36
Technical Education	τ	0.59	0.44	0.40	0.29	0.53	0.39	0.48	0.35
College	τ	0.57	0.42	0.39	0.28	0.52	0.38	0.46	0.34

Heterogeneous Policy effects



Conclusions

- Muslim girls and boys have low earnings expectations compared to other groups.
- Mean/point estimates show low caste groups (both OBC and SC-ST) have similar expectations from earnings as upper caste children.
- Heterogeneity analysis and the skewness shows a different picture.
- More upper caste students have high expectations (thick right tail) compared to SC-ST groups (keeping other things constant).
- There is a significant and positive correlation between parent's benefiting from Affirmation action and the child's earnings expectations for SC-ST groups.

Thank you for your attention!