Social Identity, Behavior, and Personality: Evidence from India

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- Hierarchical structures of social identity have implications for shaping perceptions and beliefs among marginalized groups.

Introduction

- Hierarchical structures of social identity have implications for shaping perceptions and beliefs among marginalized groups.
- Caste is critical determinant of poverty and inequality in India.
- The lower castes (Scheduled Castes), indigenous tribes (Scheduled Tribes) and Other Backward Classes (OBCs) have fared worse than upper castes.
- Differences in endowments as well as discrimination play a role in perpetuating caste gaps.
    - Munshi & Rosenzweig 2006; Hnatkovska et al. 2012; Deshpande & Sharma 2013, 2016
- These gaps could be exacerbated due to self-fulfilling prophecies regarding negative stereotypes (Coate & Loury 1993; Hoff & Stiglitz 2010).

Objective

Examine the effect of social affiliation (caste) on preferences and personality traits, using a large-scale data set:

- Behavior: risk preference, competitiveness, confidence, distributional preferences
- Personality: Big Five traits, grit, and locus of control

Personality traits and behavioral preferences are important predictors of educational attainment, earnings and job performance (Borghans et al. 2008; Buser et al. 2014)

Given the observed gaps in socioeconomic characteristics, one would expect some differences across castes in behavior and personality.

Related Literature

- Hoff and Pandey (2006): revelation of caste leads to drop in performance and willingness to compete in a cognitive task among among rural Indian students.
- Bros (2014): caste is a major determinant of perceived social rank.
- Spears (2016): low castes express lower life satisfaction in rural north India.
- Mukherjee (2015): priming caste and gender affects parents' aspirations about their children's future.

Data

- Second and third year college students enrolled in undergraduate programs across 15 colleges at University of Delhi
- Incentivized experiments followed by socioeconomic surveys
- 60 sessions lasting around 75 minutes each
- Sample size: > 2000 students
- Show-up fee: Rs. 150; average additional payment: Rs. 230

Data: competitiveness and confidence

- Competitiveness game a la Niederle and Vesterlund (2007)
- Subjects administered a real-effort task of adding up four 2-digit numbers in 90 seconds.
- After a practice round and before actual task, asked to choose between:
    - Piece-rate scheme: Rs. 10 for every correct answer.
    - Tournament scheme: Rs. 20 for every correct answer if subject outperforms a randomly selected university student who had played game earlier ('competitive').
- Subject is considered 'confident' if she believes her performance in the actual task will exceed those of others in the university.

Data: distributional preferences

- Bartling et al. (2009)
- Subject is 'egalitarian' if always choosing option A

	Option A		Option B
Row 1	You get Rs. 200; and other person gets Rs. 200.	OR	You get Rs. 200; and other person gets Rs. 120.
Row 2	You get Rs. 200; and other person gets Rs. 200.	OR	You get Rs. 320; and other person gets Rs. 80.
Row 3	You get Rs. 200; and other person gets Rs. 200.	OR	You get Rs. 200; and other person gets Rs. 360.
Row 4	You get Rs. 200; and other person gets Rs. 200.	OR	You get Rs. 220; and other person gets Rs. 380.

Data: risk preferences

Investment game by Gneezy and Potters (1997)

- Subjects asked to allocate Rs. 150 between safe asset and risky lottery.
- If lottery is won, subject triples the lottery amount plus receives the safe amount.
- If lottery is lost, subject only receives safe amount.

'Risk preference' defined as share invested in lottery.

Data: socioeconomic survey

Family and schooling background characteristics

Big Five inventory (Gosling et al., 2003)

- *Openness to experience* reflects imagination, creativity, intellectual curiosity, and appreciation of aesthetic experiences.
- *Extraversion* reflects sociability, assertiveness, and positive emotionality.
- *Conscientiousness* describes traits related to self-discipline, organization, and the control of impulses.
- *Agreeableness* comprises traits relating to altruism, such as empathy and kindness.
- *Neuroticism* describes the tendency to experience negative emotions and related processes easily.

Locus of control (Rotter, 1966)

Grit (Duckworth and Quinn, 2009)

Summary Statistics

	Pooled	Upper caste	OBC	SCST	UC vs OBC p-value	UC vs SCST p-value	OBC vs SCST p-value
Panel A: Preferences							
Competitiveness	0.31	0.31	0.32	0.31	0.91	0.98	0.95
Confidence	0.32	0.31	0.38	0.28	0.01	0.29	0.01
Risk preference	46.71	46.14	48.12	47.97	0.08	0.13	0.93
Egalitarianism	0.15	0.13	0.19	0.18	0.01	0.03	0.84
Panel B: Personality traits							
Extraversion	4.62	4.76	4.28	4.25	0.00	0.00	0.77
Agreeableness	5.13	5.19	5.07	4.83	0.08	0.00	0.02
Conscientiousness	5.27	5.29	5.31	5.11	0.83	0.03	0.06
Emotional Stability	4.56	4.52	4.65	4.62	0.14	0.3	0.76
Openness to experience	5.33	5.43	5.14	5.04	0.00	0.00	0.29
Locus of control	7.29	7.27	7.51	7.19	0.07	0.6	0.04
Grit	3.35	3.39	3.28	3.21	0.00	0.00	0.14
Panel C: Control variables							
Female	0.49	0.58	0.28	0.24	0.00	0.00	0.27
Age (in years)	19.75	19.72	19.78	19.83	0.35	0.07	0.57
Hindu	0.91	0.92	0.87	0.91	0.006	0.88	0.07
Private school	0.70	0.82	0.52	0.31	0.00	0.00	0.00
High socioeconomic status	0.71	0.82	0.46	0.37	0.00	0.00	0.02
Raven's test score	6.45	6.81	5.77	5.45	0.00	0.00	0.1

Note: maximum value for Big Five, Locus of control, Grit, and Raven's test is 7, 13, 8 and 10 respectively.

Estimation: Seemingly Unrelated Regression

As the same subject makes multiple choices, we estimate these equations using SUR framework that allows for these choices to be correlated.

$$Y_{ij} = \beta_0 + \beta_1 SCST_i + \beta_2 OBC_i + \sum_{k=3}^{N} \beta_k X_{ik} + \delta_s + \epsilon_{ij}$$

- Estimate this separately for sets of behavioral preferences and personality traits.
- X: gender, religion, age, socioeconomic status, private school, and Raven's test score.
- Able to reject the null that the outcomes are independent for the vector of behavior and personality measures.

SUR Estimates: Preferences

	Competition	Confidence	Risk	Egalitarianism
SCST	-0.087**	-0.072*	0.367	0.065**
	(0.036)	(0.037)	(1.482)	(0.029)
OBC	-0.079**	0.029	0.136	0.055**
	(0.032)	(0.033)	(1.329)	(0.026)
Female	-0.171***	-0.099***	-6.285***	0.006
	(0.022)	(0.023)	(0.904)	(0.017)
Constant	0.660**	0.378	49.619***	0.279
	(0.264)	(0.272)	(10.878)	(0.209)
Observations	1,918	1,918	1,918	1,918
R-squared	0.106	0.063	0.080	0.058
Other controls	Yes	Yes	Yes	Yes
H0: SCST=OBC	0.84	0.01	0.88	0.74

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SUR Estimates: Personality

	Agreeable	Extraversion	Conscientiousness	Emotional stability	Openness to experience	Locus of control	Grit
SCST	-0.202**	-0.228***	-0.250***	-0.049	-0.254***	-0.211**	-0.279***
	(0.088)	(0.087)	(0.088)	(0.089)	(0.086)	(0.088)	(0.088)
OBC	-0.040	-0.264***	0.039	0.010	-0.192**	-0.018	-0.158**
	(0.078)	(0.077)	(0.078)	(0.079)	(0.076)	(0.078)	(0.078)
Female	0.260***	0.089*	0.128**	-0.210***	0.042	-0.074	0.184***
	(0.052)	(0.052)	(0.053)	(0.053)	(0.051)	(0.052)	(0.052)
Constant	0.427	0.311	0.143	0.662	-0.032	-0.179	0.677
	(0.624)	(0.618)	(0.629)	(0.631)	(0.613)	(0.628)	(0.627)
Observations	1,651	1,651	1,651	1,651	1,651	1,651	1,651
R-squared	0.067	0.081	0.059	0.053	0.073	0.065	0.078
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H0: SCST=OBC	0.09	0.7	0.002	0.54	0.5	0.04	0.2

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Robustness Checks

- Correcting standard errors for multiple hypotheses testing (Anderson, 2008).
- Checking for selection on unobservables biasing the coefficient estimates (Oster, forthcoming).
- Estimation using OLS/LPM: as SUR creates extra missing observations.

Heterogeneity in Behavior by Socioeconomic Status

	Competition	Confidence	Risk	Egalitarianism
SCST	-0.075	-0.072	0.388	0.091**
	(0.049)	(0.050)	(2.007)	(0.039)
OBC	-0.055	0.059	0.223	0.102***
	(0.048)	(0.049)	(1.966)	(0.038)
High socioeconomic status	0.042	0.004	0.285	-0.004
	(0.034)	(0.035)	(1.383)	(0.027)
High SES × SCST	-0.018	0.013	-0.010	-0.038
	(0.068)	(0.069)	(2.779)	(0.053)
High SES × OBC	-0.042	-0.058	-0.159	-0.082*
	(0.062)	(0.063)	(2.541)	(0.049)
Constant	0.655**	0.388	49.627***	0.269
	(0.266)	(0.273)	(10.947)	(0.210)
Observations	1,918	1,918	1,918	1,918
R-squared	0.107	0.064	0.080	0.059
Other controls	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Heterogeneity in Personality by Socioeconomic Status

	Agreeable	Extraversion	Conscientiousness	Emotional stability	Openness to experience	Locus of control	Grit
SCST	-0.227*	-0.064	-0.230*	-0.177	-0.209*	-0.335***	-0.260**
	(0.119)	(0.117)	(0.119)	(0.120)	(0.116)	(0.119)	(0.119)
OBC	-0.087	-0.130	-0.015	-0.132	-0.183	-0.205*	-0.115
	(0.116)	(0.115)	(0.117)	(0.117)	(0.114)	(0.116)	(0.116)
High SES	0.018	0.078	-0.141*	-0.095	0.069	-0.192**	0.009
	(0.080)	(0.079)	(0.081)	(0.081)	(0.079)	(0.081)	(0.081)
High SES x SCST	0.036	-0.320*	-0.071	0.233	-0.101	0.204	-0.026
	(0.167)	(0.165)	(0.168)	(0.168)	(0.164)	(0.167)	(0.168)
High SES x OBC	0.080	-0.199	0.108	0.226	-0.002	0.311**	-0.074
	(0.149)	(0.147)	(0.150)	(0.150)	(0.146)	(0.149)	(0.149)
Constant	0.437	0.178	0.099	0.751	-0.080	-0.113	0.672
	(0.629)	(0.622)	(0.633)	(0.635)	(0.617)	(0.631)	(0.632)
Observations	1,651	1,651	1,651	1,651	1,651	1,651	1,651
R-squared	0.067	0.084	0.060	0.055	0.073	0.067	0.079
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Heterogeneity in Behavior by Private School Enrollment

	Competition	Confidence	Risk	Egalitarianism
SCST	-0.126***	-0.085*	0.093	0.039
	(0.047)	(0.048)	(1.939)	(0.037)
OBC	-0.067	-0.008	-1.935	0.042
	(0.049)	(0.051)	(2.037)	(0.039)
Private School	-0.064*	-0.042	0.510	0.047*
	(0.033)	(0.034)	(1.361)	(0.026)
Private school × SCST	0.102	0.015	-0.285	0.060
	(0.068)	(0.070)	(2.809)	(0.054)
Private school × OBC	-0.027	0.060	3.464	0.017
	(0.061)	(0.063)	(2.509)	(0.048)
Constant	0.666**	0.387	50.060***	0.287
	(0.264)	(0.272)	(10.883)	(0.209)
Observations	1,918	1,918	1,918	1,918
R-squared	0.108	0.064	0.081	0.058
Other controls	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Heterogeneity in Personality by Private School Enrollment

	Agreeable	Extraversion	Conscientiousness	Emotional stability	Openness to experience	Locus of control	Grit
SCST	-0.361***	-0.233**	-0.326***	-0.253**	-0.338***	-0.334***	-0.262**
	(0.116)	(0.115)	(0.117)	(0.117)	(0.114)	(0.116)	(0.116)
OBC	-0.148	-0.192	-0.126	-0.128	-0.382***	-0.159	-0.162
	(0.118)	(0.117)	(0.118)	(0.119)	(0.115)	(0.118)	(0.118)
Private School	-0.159**	0.149*	-0.148*	-0.161**	-0.048	-0.194**	-0.081
	(0.079)	(0.079)	(0.080)	(0.080)	(0.078)	(0.080)	(0.080)
Private school × SCST	0.339**	0.047	0.110	0.434***	0.116	0.235	-0.044
	(0.167)	(0.165)	(0.168)	(0.168)	(0.164)	(0.168)	(0.168)
Private school × OBC	0.153	-0.129	0.273*	0.198	0.315**	0.220	0.011
	(0.147)	(0.146)	(0.148)	(0.148)	(0.144)	(0.148)	(0.148)
Constant	0.485	0.289	0.205	0.737	0.039	-0.117	0.676
	(0.624)	(0.619)	(0.629)	(0.630)	(0.613)	(0.628)	(0.628)
Observations	1,651	1,651	1,651	1,651	1,651	1,651	1,651
R-squared	0.070	0.082	0.061	0.057	0.075	0.066	0.078
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Conclusion

- SCSTs and OBCs fare worse than the upper castes along several dimensions of behavior and personality that matter for educational attainment, labor market success, and life outcomes.
- No heterogeneous impacts based on gender.
- Little evidence of caste gaps being smaller for high SES students.
- The accumulation of cognitive and behavioral disadvantage among excluded groups by adulthood suggests the need for redesigning the current structure of affirmative action policies in India.
- Strong case for targeting early childhood interventions towards marginalized groups.

Thank You!