Development and Exclusion

Intergenerational Stickiness in India

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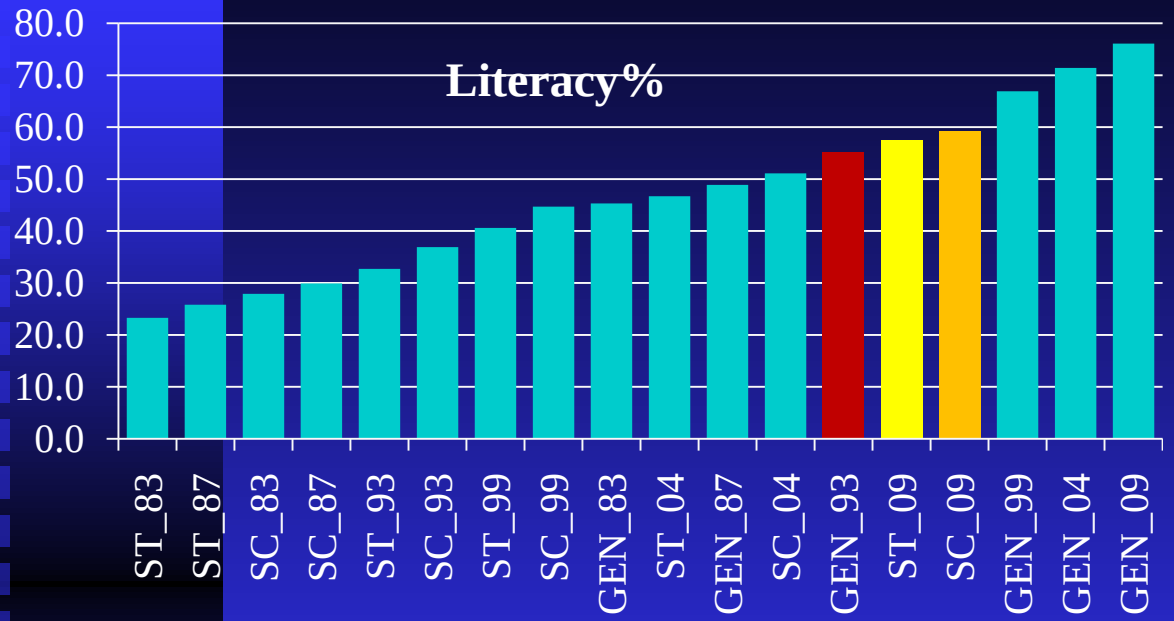
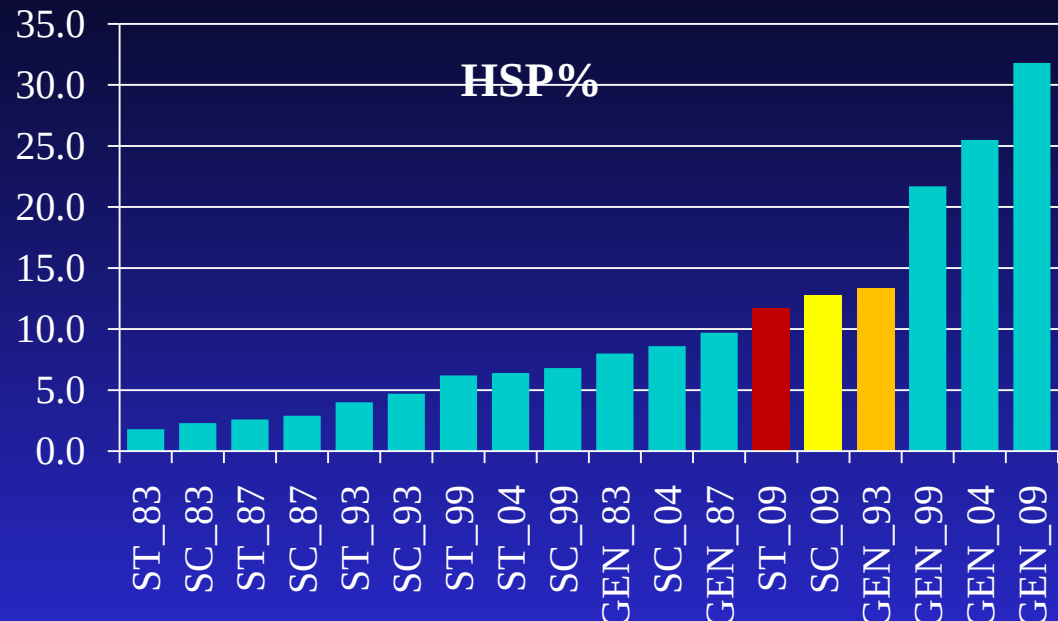
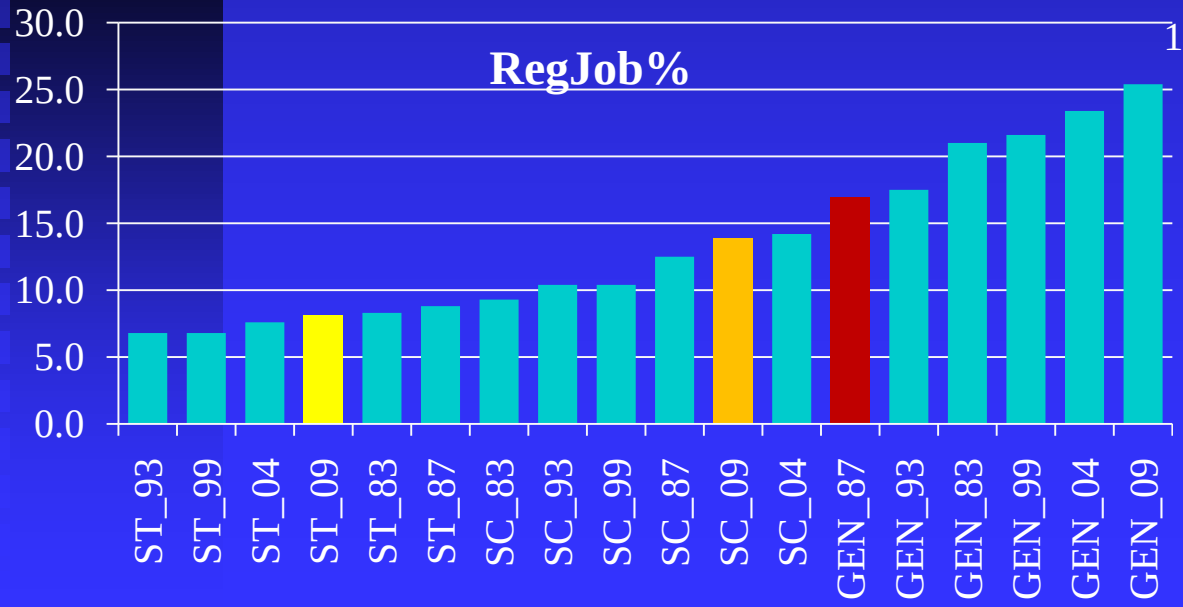
Background

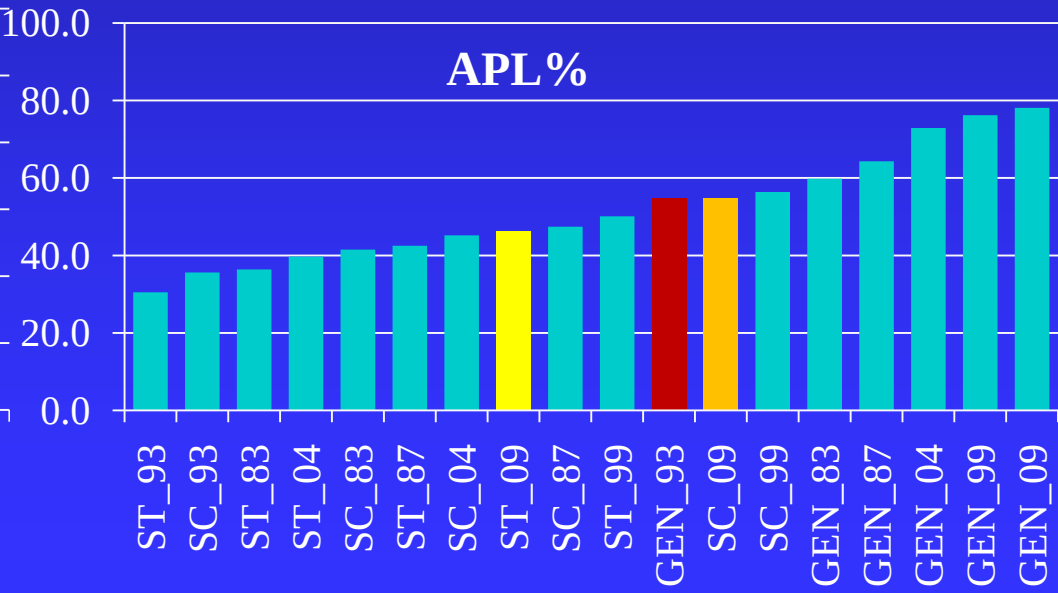
- Development as a concept strives for better living standard over time – *Intergenerational Mobility*
- Social Discrimination may lead to exclusion from the process of capability formation & income-earning opportunities
- This perpetuates across future generations and results in low Intergenerational Mobility in terms of both Education and Occupation
- World Bank (2000): *"Discrimination on the basis of gender, ethnicity, race, religion, or social status can lead to social exclusion and lock people into long-term poverty traps."*

Current Situation



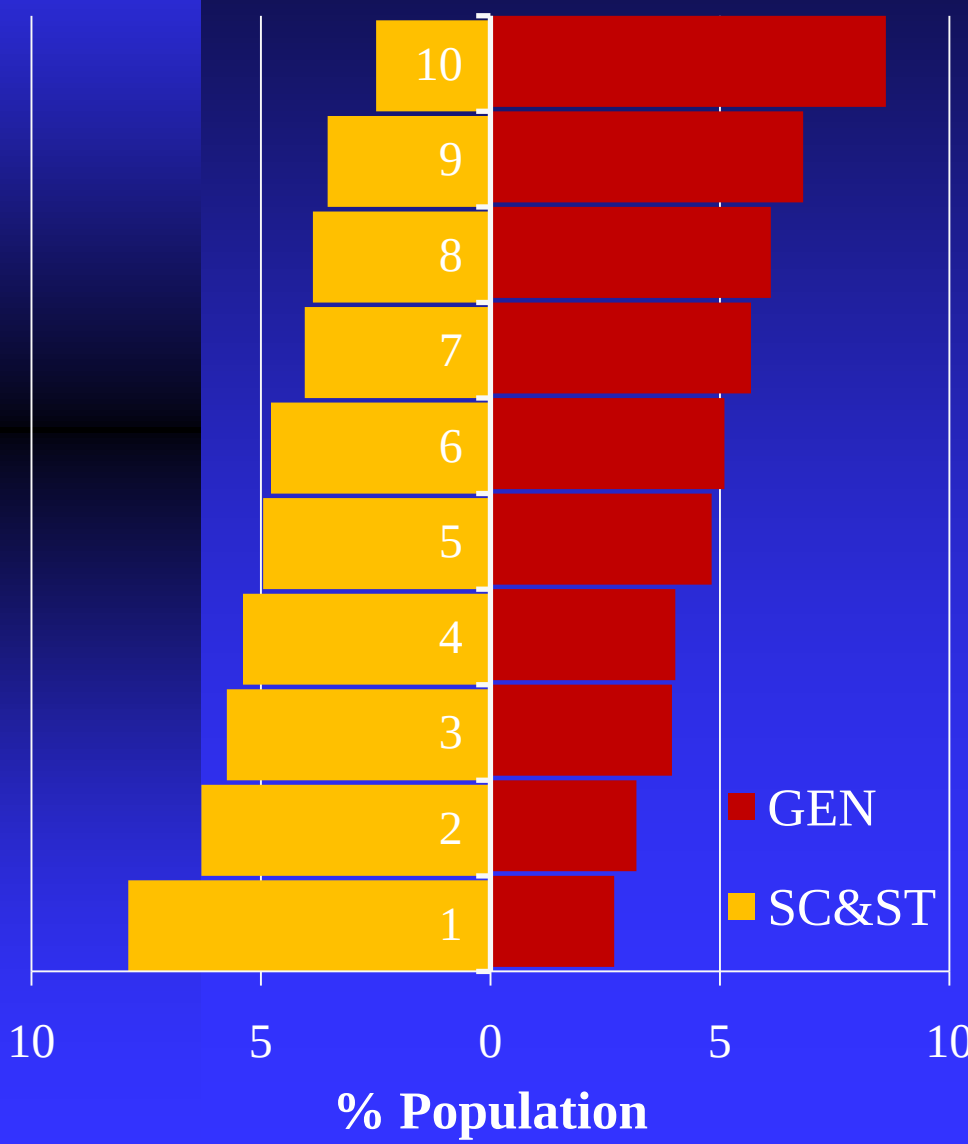




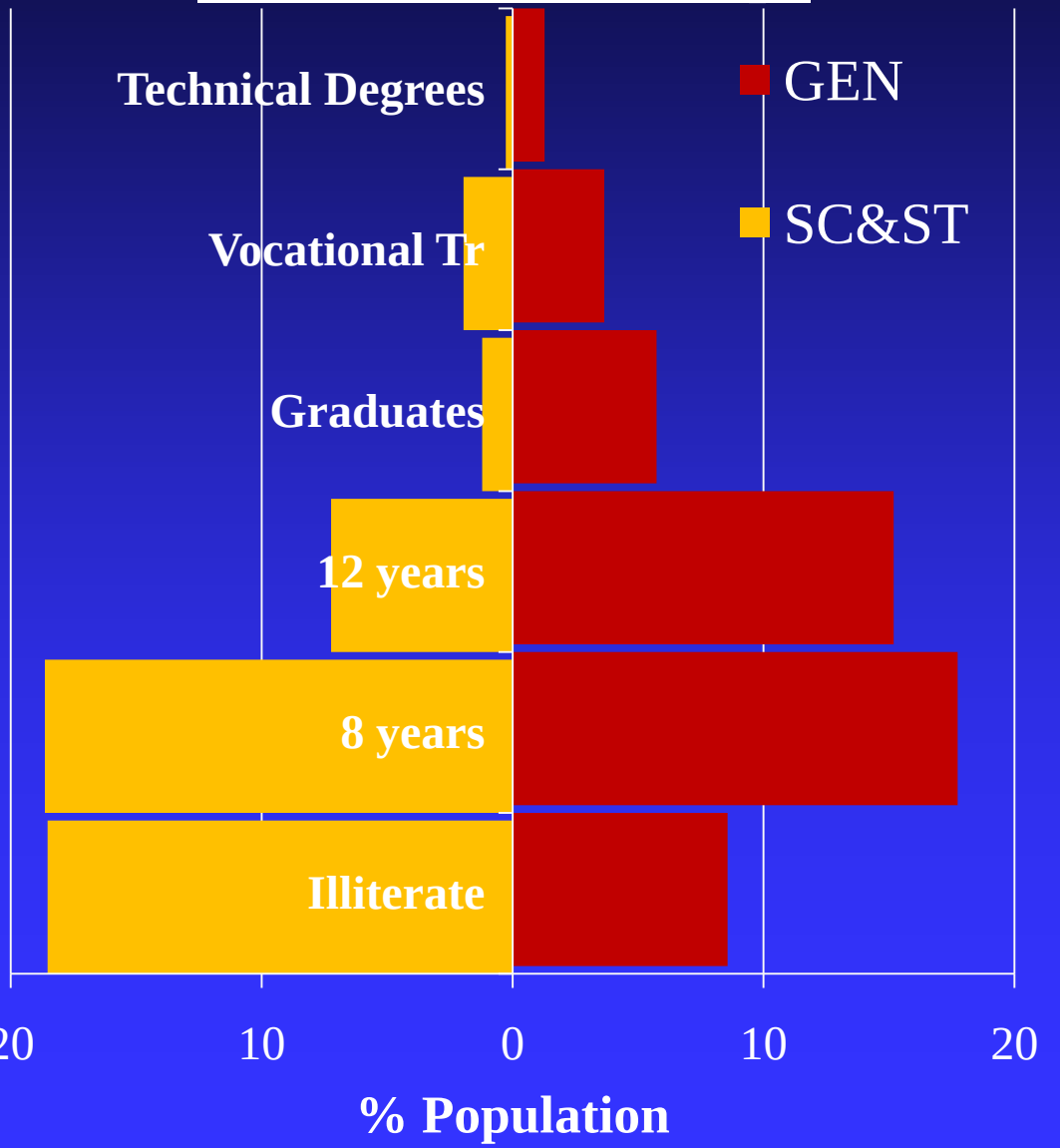


Why Inclusion is Urgent?

Population Distribution over Consumption Deciles



Population Distribution over Education Groups



Process-I

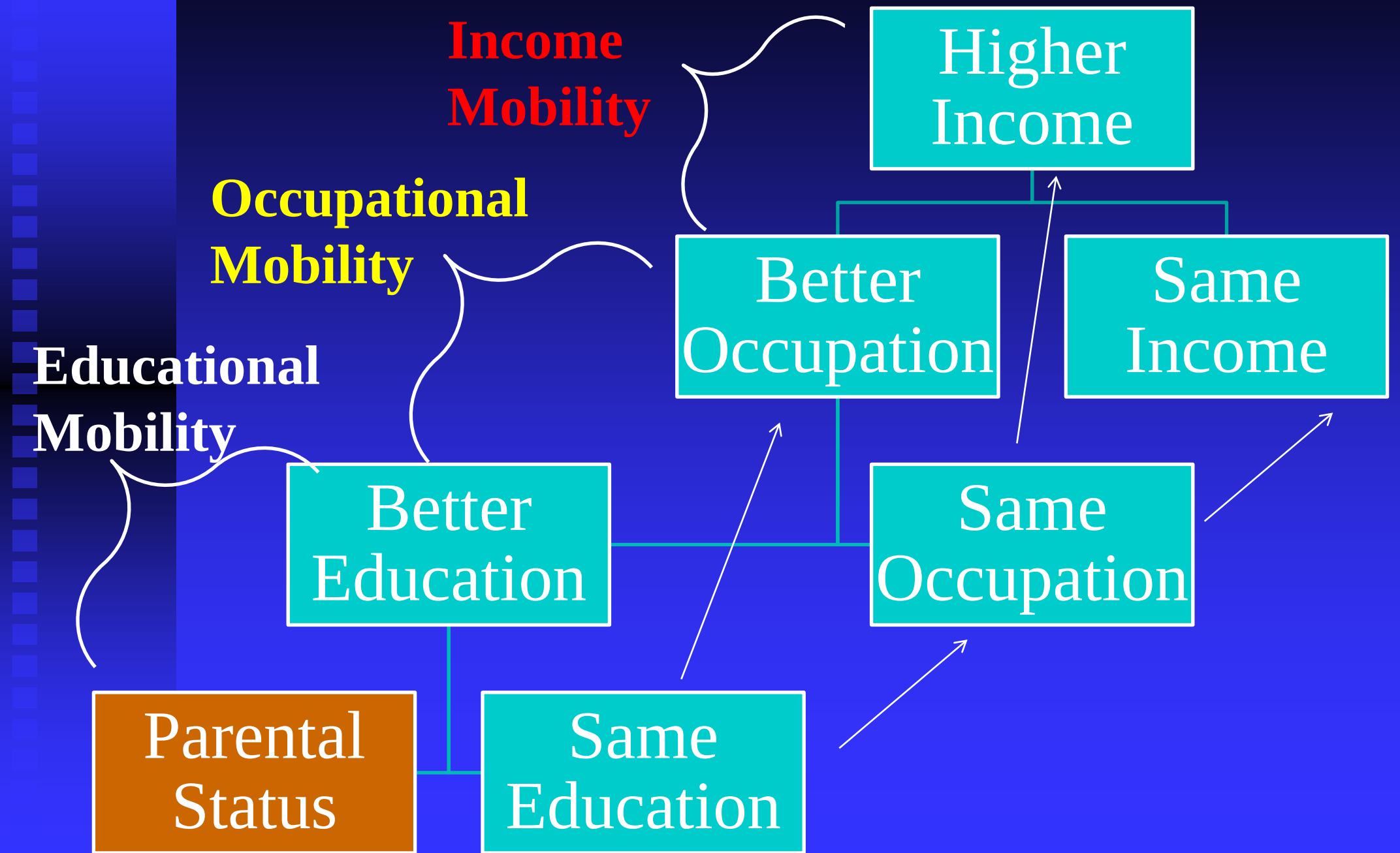
***Upward Mobility*:**
Higher Education / Occupation / Income
Status compared to Parents

***Downward Mobility*:**
Lower Education / Occupation / Income
Status compared to Parents

Low Upward Mobility

High Upward Mobility

Process-II


Income Mobility
Occupational Mobility
Educational Mobility
Higher Income
Better Occupation
Same Income
Better Education
Same Occupation
Parental Status
Same Education

Objectives

- *Estimate Stickiness across generations in terms of Education, Occupation and Wage Income in India*
- *Check if stickiness/mobility are different for advanced social class and marginal social classes*
- *Examine interlinkage between stickiness in 3 dimensions*
- *Explore possible macro correlates of mobility*

Database

- **NSSO Employment & Unemployment survey data for the 50th & 66th Rounds, pertaining to the years 1993-94 and 2009-10**
- ***Sample*: Co-resident Father-Son Pair, Sons above 20 years of age**

Existing Literature

- Two broad methodological approaches
- **Transition Matrix Approach**: Erikson and Goldthorpe (1992, 2002), Cheng (1995), Biblarz (1996), Kumar (2002), Behrman et al (2001), Beller and Hout (2006), and Louw et al (2006).
- **Regression Approach** : Behrman and Wolfe (1984), Solon (1992, 1999), Peters (1992), Gang and Zimmermann (1999), Bowles and Gintis (2002), Bourguignon (2003), Black et al (2003), Checchi et al (2008), and Brown et al (2009) etc
- **Indian Study: (Few) Mostly Occupation / education Mobility**
- Driver (1962), Kumar et al (2002a, 2002b), Maitra and Sharma (2009), Majumder (2010), Ray & Majumder (2010), Motiram & Singh (2012)], only two recent works (Hnatkovska et al, 2013, Ray and Majumder, 2015) explored intergenerational income mobility
- ***No effort to integrate or examine interlinkages/correlates***

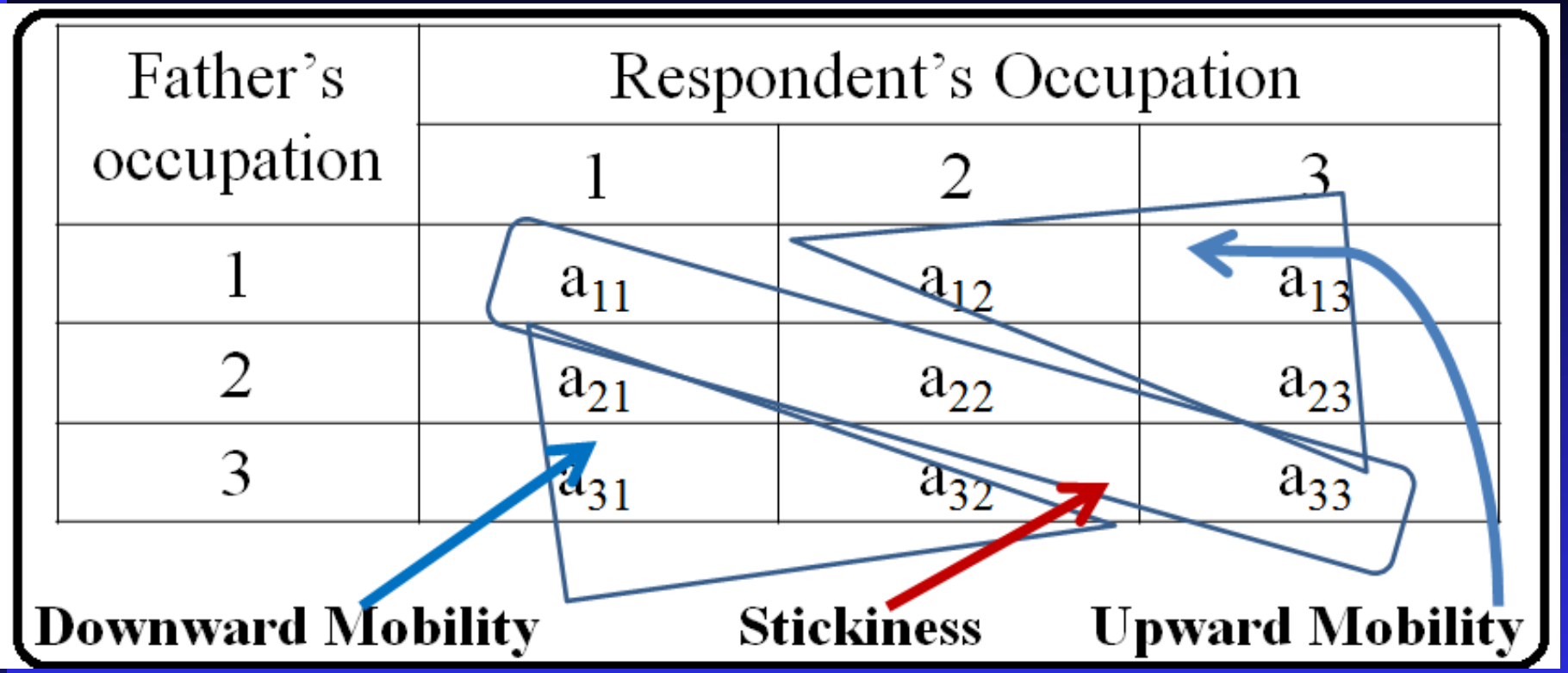
Regression Method

Status of Child = *f* [Personal Attributes, Household attributes, Socioeconomic attributes, Parental Status]

- **Coeff. of Parental Status measures Intergenerational Transmission of characteristics**
- **Higher coefficient implies higher parental influence or *Stickiness* – hence *Low Mobility***
- **Controls for changes in other parameters**
- **Independent of marginal distribution**
- **Assumptions about distributional parameters**
- **Can not estimate Upward Mobility in isolation**
- **May lead to wrong inferences if used in isolation**

Transition Matrix & Mobility

Father's occupation	Respondent's Occupation		
	1	2	3
1	a_{11}	a_{12}	a_{13}
2	a_{21}	a_{22}	a_{23}
3	a_{31}	a_{32}	a_{33}



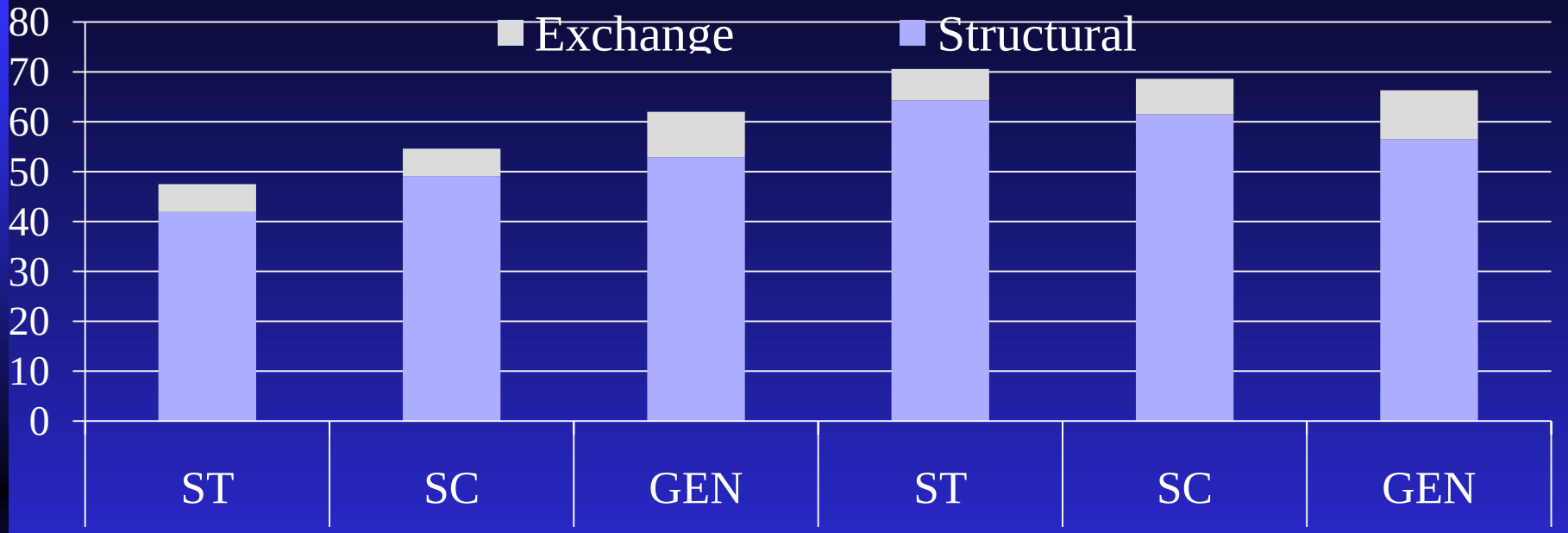
- Easy to compute and comprehend
- Provides estimates of all three dimensions of Upward, Static and Downward Mobility
- Dependent on Classification Scheme
- Dependent on Marginal Frequencies

Educational Stickiness

Independent Variables ↓	*1993*	*2009*
Dependent variable : child's completed years of schooling		
Father's completed years of schooling	0.433** (2,367.9)	0.277** (1,694.0)
Poverty Dummy[1]	-1.295** (-1,120.6)	-1.870** (-2,157.9)
Father's Occupation	0.435** (454.9)	0.357** (592.6)
Social Group[2] ST dummy	-1.533** (-681.3)	-1.077** (-530.2)
SC dummy	-0.895** (-502.6)	-1.000** (-601.9)
Interaction[3]		
Father's yrs of schooling * SC Dummy	0.073** (156.9)	0.044** (120.0)
Father's completed years of schooling * ST Dummy	0.130** (195.0)	0.069** (270.0)
Father's completed years of schooling * OBC Dummy		0.073** (377.9)

- **Significant stickiness, declining over time**
- **Educational level 40% lower for BPL hhs**
- **SC/STs have 30-50% lower educational level**
- **Parental influence and hence stickiness further higher for SC/STs**

Educational Mobility



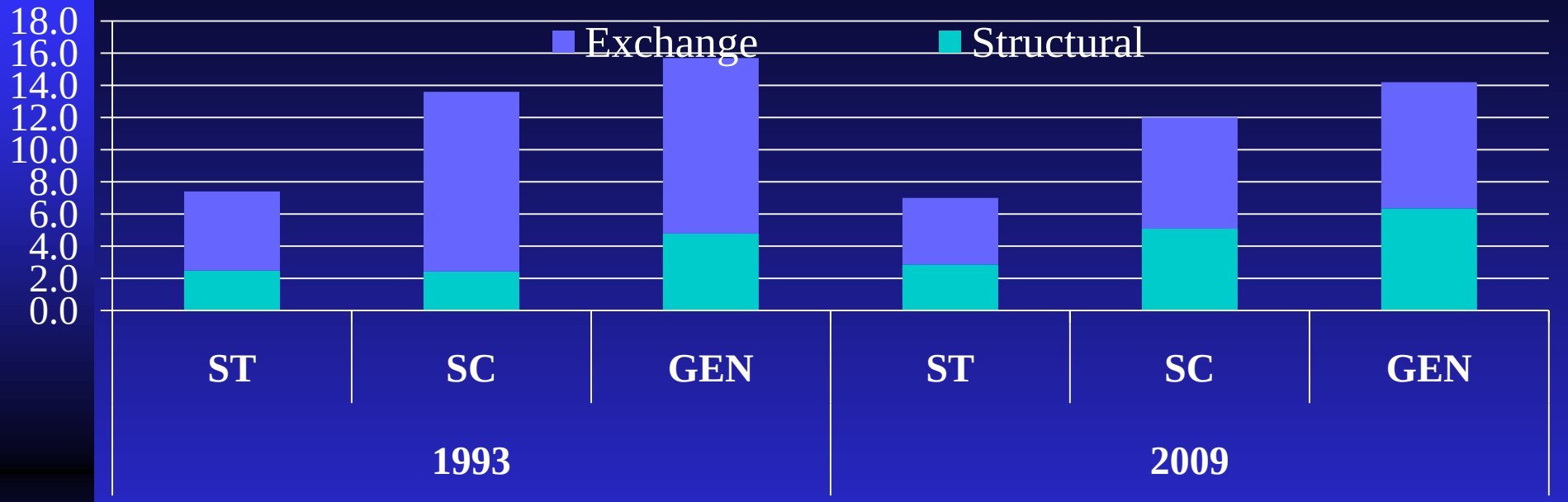
- **Significant rise in Upward Educational Mobility over the years – Convergence across social groups**
- **Share of structural mobility higher and increasing**
- **Investment in public and private education - SSA**
- **Aspiration and rising demand for higher qualification**

Occupational Stickiness

Dependent variable : Son's Occupational Score		
Independent Variables ↓	***1993***	***2009***
Age of Child	0.015** (344.0)	0.012** (361.6)
Child's completed years of schooling	0.070** (1137.1)	0.102** (1877.9)
Father's completed years of schooling	0.024** (289.1)	0.032** (554.2)
Father's Occupation Score	0.359** (2002.8)	0.516** (3885.2)
Father's occupation score * ST Dummy@	0.008** (41.6)	0.029** (162.4)
Father's occupation score * SC Dummy@	0.011** (71.6)	0.051** (362.5)
Father's occupation score * OBC Dummy@	na	0.028** (375.1)
F Value	$1.6X10^5$	$5.1X10^5$
Adj R Sq	0.224	0.377

- **Parental occupational score as the most important factor**
- **Probability of being in higher grade occupations increase if Father is also in higher grade occupations**
- **Stickiness substantially higher for ST/SCs**
- **Persistence of elitism in labour market and occupational hierarchy**

Occupational Mobility



- Upward mobility is 13% in 2009 ; much lower for STs
- Mobility ***coming down*** after correcting for distribution
- Most of the mobility is among similar occupations - Grade level stickiness much higher
- Share of Structural factors lower, though increasing

Occupational Mobility-II

Variables	*Occupation*							
	Technical	*Professional*	*Admin*	*Clerk*	*Sales*	*Services*	*Production*	*Transport*
Age of Child	+	+	+			+	–	–
Years of Edu_Child	++	++	+	++	+	+	–	–
Years of Edu_Father	+	+	–	–		–	–	–
OBC_dummy@	++	++	+	+	–	++	++	++
SC_dummy@	++	++	–	++	++	++	++	++
ST_dummy@	++	–	– – –	+	– – –	– –	++	– – –
Father in Gr-I occupation	+++	+++	++++	+++	+++	+++	++	++
Father in Gr-II occupation	++	++	+	+++	++++	++++	+	+

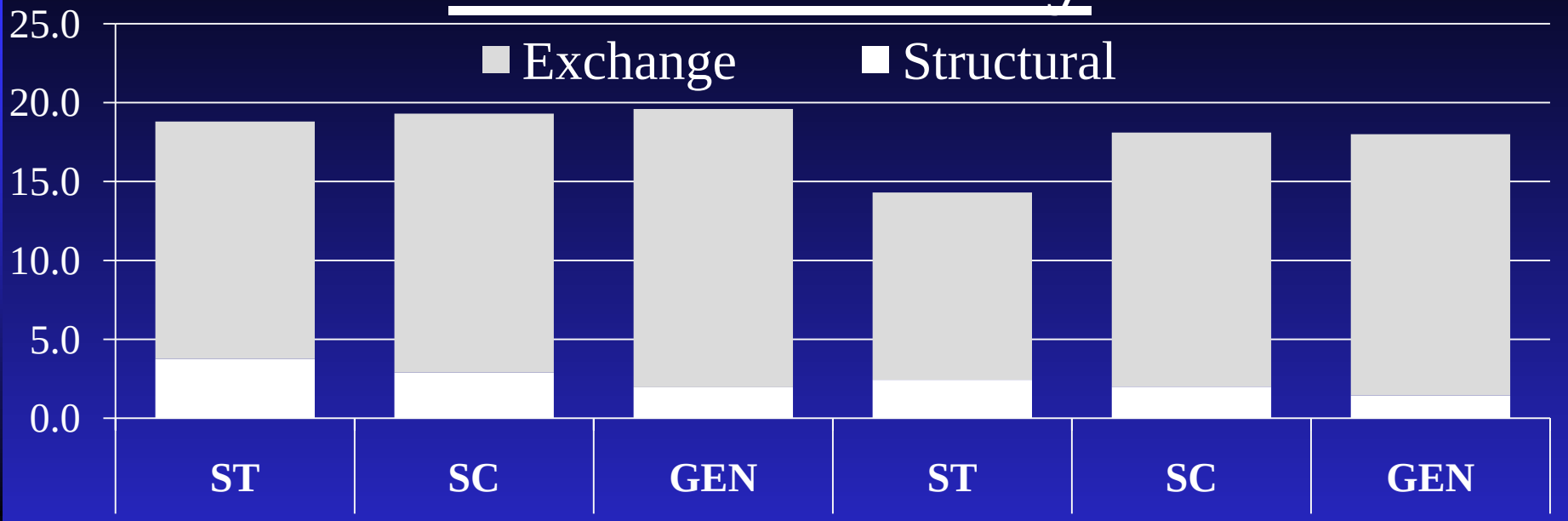
- **Marginal effects of correlates on Occupation**

Income Stickiness

Income Stickiness Estimation – Regression Output		
Dep Var: ln_wage	*1993*	*2009*
Causal Variables	(773.2)	(1632.9)
Father's Education	0.051**	0.021**
	(278.5)	(182.4)
ST_dummy	-2.725**	-0.339**
	(134.3)	(146.8)
SC_dummy	-1.482**	-0.277**
	(144.9)	(168.6)
ln_isolated_wage_father[a]	0.418**	0.371**
	(583.3)	(710.5)
Wage_father*ST dummy[b]	0.288**	0.126**
	(120.8)	(190.6)
Wage_father*SC dummy[b]	0.152**	-0.118**
	(129.6)	(127.5)
Adj R-square	0.40	0.38

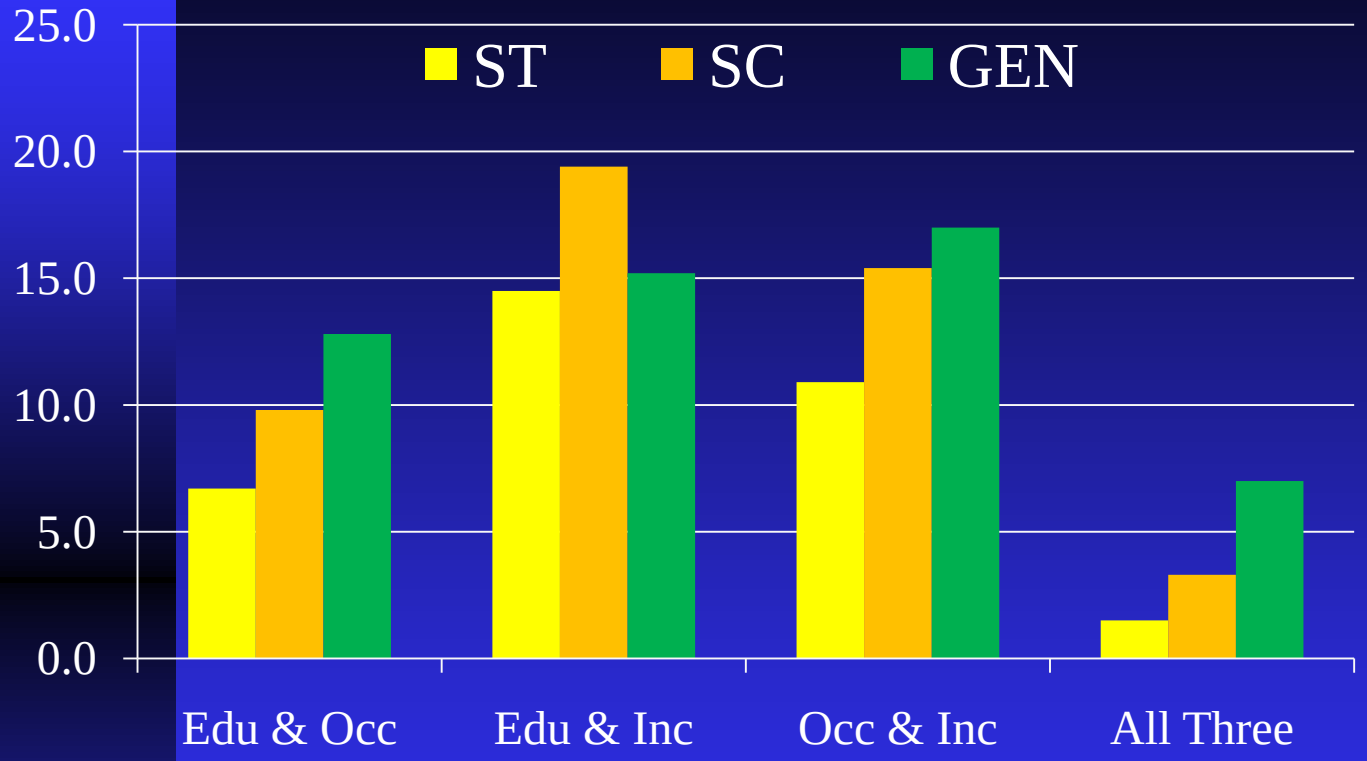
- Wage Income Stickiness decreased over time
- Stickiness higher for STs in both periods
- For SCs, stickiness has declined and lower than advanced class in 2009
- Poor households among marginal social classes are more disadvantaged

Income Mobility



- Upward Income Mobility decreased over time
- STs are lagging behind in recent times
- SCs have better mobility in 2009
- Almost all is due to exchange mobility – social churning rather than structural improvement of the economy
- Higher mobility due to high ***Downward Mobility***

Interlinkage of 3 Mobilities



- Overlap between Educational and Income Mobility
- Overlap between Occupational and Income Mobility
- For STs – Mobility under distress?
- SCs are beneficiaries of reservation in Education ?

Regional Interlinkages

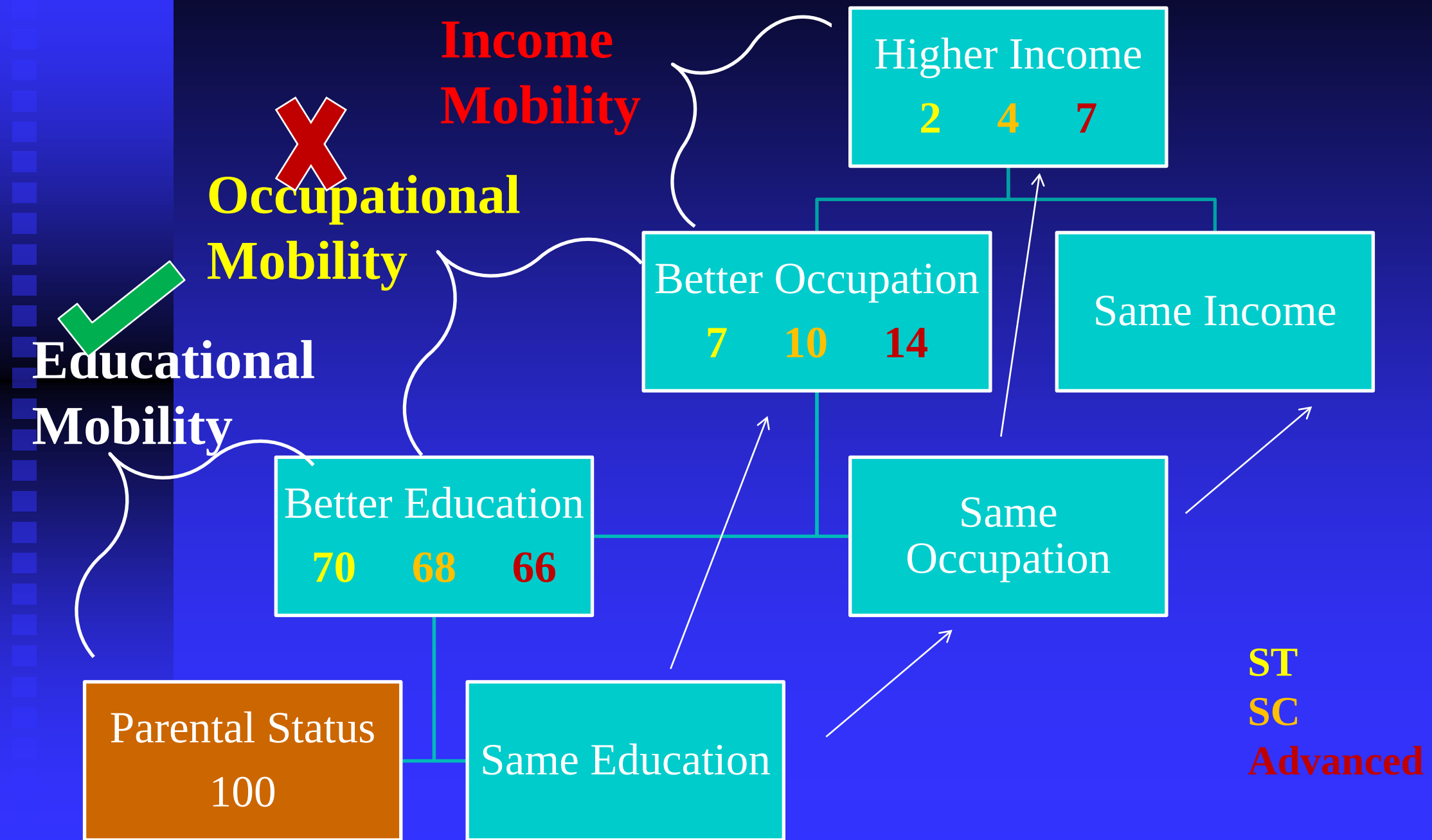
		Occupational Mobility		Income Mobility	
		HIGH	**LOW**	**HIGH**	**LOW**
Educational Mobility	HIGH	**Kerala, Tamil Nadu**, **Punjab**, Maharashtra **Himachal Pr**,	Andhra Pr, Chattisgarh, Karnataka, Assam	**Kerala**, Andhra Pr, **Tamil Nadu**, **Punjab**, **Himachal Pr**, Karnataka	Maharashtra, Chattisgarh, Assam
	LOW	Jammu & Kashmir, Uttaranchal, WBengal	**Bihar**, **Uttar Pr**, **Madhya Pr**, **Gujarat**, Rajasthan Jharkhand, **Meghalaya**	Rajasthan, Jharkhand, Jammu & Kashmir	**Bihar**, **Uttar Pr**, **Madhya Pr**, **Gujarat**, **Meghalaya**, WBengal, Uttaranchal
Occupational Mobility	HIGH			**Kerala**, **Tamil Nadu**, Jammu & Kashmir, Haryana, **Punjab**, **Himachal Pr**	WBengal, Maharashtra, Uttaranchal
	LOW			Rajasthan, Jharkhand, Karnataka, Arunachal Pr, Andhra Pr	Assam, **Bihar**, **Madhya Pr**, **Uttar Pr**, **Meghalaya**, Chattisgarh, **Gujarat**
		HIGH	**LOW**	**HIGH**	**LOW**
		Occupational Mobility		**Income Mobility**	

Possible Correlates

	Edu_Exp	*PCNSDP*	*PCI_growth*	*Pov_HCR*
Educational Mobility	0.557*** (0.01)	0.669*** (0.002)	0.501** (0.03)	-0.581*** (0.008)
Occupational Mobility	0.710*** (0.01)	0.739*** (0.000)	0.691*** (0.001)	-0.650*** (0.003)
Income Mobility	0.338 (0.15)	0.411* (0.081)	0.154 (0.529)	-0.536** (0.018)

- **Strong positive association between mobility and Plan Expenditure on education, especially Capital Exp**
- **Strong positive link between regional economic performance and mobility – esp. occupational mobility**
- **Strong negative link between mobility and poverty HCR**

Recapitulating . . . . .



Global Comparisons

Global Estimates of Income Stickiness across Generations								
Malaysia	New Zealand	Bangla desh	S Korea	Philip pines	Australia	China (u)	Japan	India*
1995	2006	1996	1998	2003	2004	2004	2006	2009
0.32	0.26	0.55	0.30	0.22	0.21	0.63	0.39	0.30

- Dominant channel is publicly funded education that ensures educational mobility
- Not working in India due to poor quality of public education – India ranks among last in PISA rankings
- Second channel is Industrialisation and occupational diversification
- Discrimination in labour market in India affects both occupational choice and wages

Policy Imperatives

- **Multi-pronged approach to tackle stickiness in all 3 dimensions needed**
- **Enhancing quality of education and market-ready skill formation, especially among marginal social classes**
- **Needed: *A Cross between Singapore's economic growth and competitive skill formation, Indonesia's primary education expansion, Australia's thrust on easy, but quality higher education, non-farm sector growth of Philippines, and South Korea's industrialisation drive* ?**
- ***Social Inclusion* key to India's demographic scenario being a disaster or a dividend**

Let us straighten the leaning tower . . . . . .

Or else . . . . . .

Thank You