

Reproductive Health Inequality in India at Sub-National Level: Trend, Differential and Determinants

Gargi Bhattacharya (Mahadevananda Mahavidyalaya, Kolkata, India)
&
Sushil K. Haldar (Jadavpur University, Kolkata, India)

Motivation

India's Demographic Dividend: Boon or Bane?

- Differential Demographic Outcomes
- Bulk of working age people in BIMARU STATES: Potentially Productive???

Role of Reproductive Health (RH) in Future Demographic Gift of India in the context of Endogenous Economic Growth

Declining Fertility : Necessary but not Sufficient

Demographic Dividend

Objective

- Finding out Relative Position of 15 major states of India in terms of RH status
 - Inequality Measurement of overall RH situation and selected RH parameters across the states
 - Finding out the Determinants of RH Deprivation
- RH Parameters: 5:HOB, ID, ANC, FPM, AN (all in percentage terms)

Data Source

District Level Household and Facility Survey (DLHS), Round II(2003-04), Round III(2007-08); and National Family Health Survey (NFHS: ROUND I-1992-93, Round-II: 1997-98 and Round-III: 2005-06), MHW, GOI

Methodology

- Power mean function developed by Sen and Anand(1997)
 $DI(\alpha) = [\sum w_j P_j^\alpha / \sum w_j]^{1/\alpha} \dots (1)$
 - Principal Component Analysis
 $PC_j = \sum a_{ij} P_j \dots (2)$
 $PC_j =$ Principal Component of j-th indicator, $j = 1, 2, \dots, 5$
 $a_{ij} = r(PC_j, P_j) =$ Factor Loading of the j-th original variable/parameter in the i-th PC; $r(PC_j, P_j) = 0$ $i \neq j$
 $WDI_i(\alpha) = [w_1 * \{(PC_{1j})^\alpha + w_2 * \{(PC_{2j})^\alpha\}^{1/\alpha} \dots (3)$
 $w_1 = \lambda_1 / (\lambda_1 + \lambda_2)$; $w_2 = \lambda_2 / (\lambda_1 + \lambda_2)$
 - Inequality Study with Generalized Entropy(GE; $\alpha=0, 1$ and 2) and Atkinson(AT; $\epsilon = 0.5, 1$ and 2) class of measures
 - Panel Data Regression towards Determining RHD across states in India
- Selection of the Variables: Female Literacy Rate, Female labor force participation, Income (PCSDP), Rural Public Healthcare Infrastructure (Gap of CHC, PHC), PCSSE

Results

Fig-1: Dispersion of the States around the mean RH deprivation in 1992-93

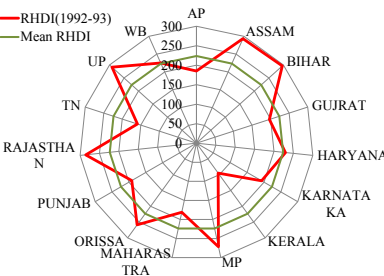


Fig-2: Dispersion of the States around the mean RH deprivation in 2007-08

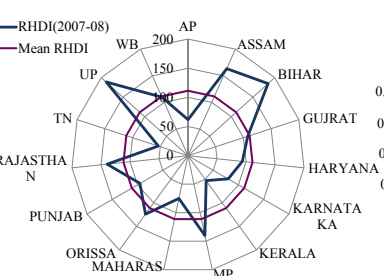


Fig-3: GE(2) OF RHD

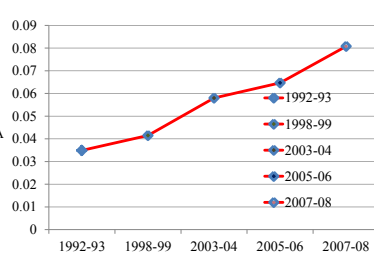
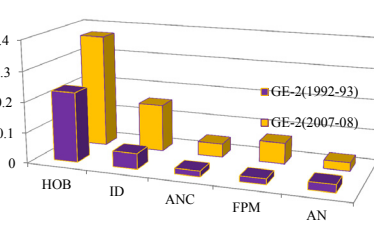


Fig-4: Parameter specific inequality study using GE(2)



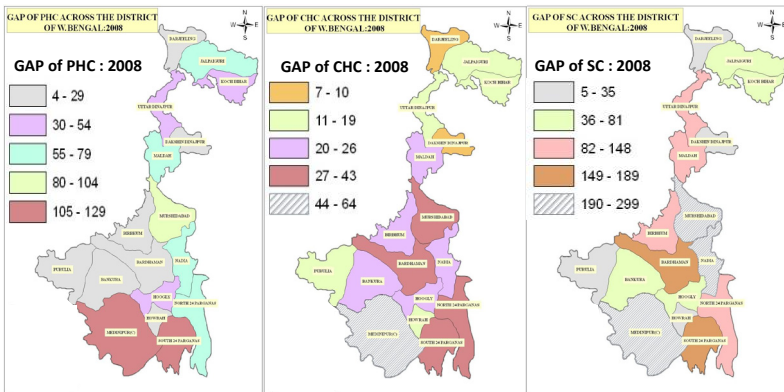
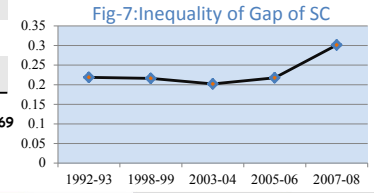
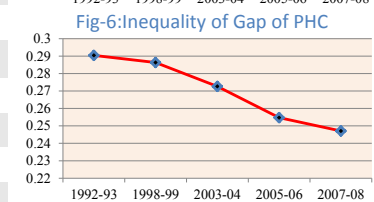
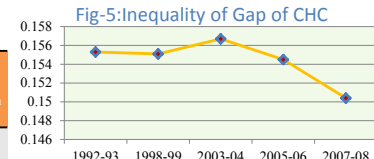
Results of Panel data regression

Reestimated using GLS Coefficients: Dependent Var: lnWRHDI

Estimates: Var(e)=0.237076D-01; Var(u)=0.870234D-01; Sum of Squares=0.446828D+01; R²=0.6814

Variable	Coefficient	Std. Error	t Ratio	P[Z > z]
lnFLR	-0.493482	0.114245	-4.319	0.0000
lnPCSDP	-0.073846	0.057830	-1.277	0.2016
lnFLFPR	-0.211906	0.118492	-1.788	0.0737
lnGCHC	0.076563	0.084979	0.901	0.3676
lnGPHC	0.09532	0.0461	2.067	0.051
LnPCSSE_5	-0.27833	0.06517	-4.271	0.0000
LnPCSSE_10	-0.14776	0.081339	-1.817	0.0693
Constant	8.8665860	.7188804	12.334	0.0000

Regression Diagnostic R²=0.6814 LM Test (Pooling Vs. Panel)=32.71 (p=0.000) Hausman Test(Fixed Vs. Random)=10.81 (p=0.1469 at 7d.f) N=75



Findings

- Differential Reproductive health outcomes (Mostly Deprived: BIMARU States)
- Regional inequality of RH Deprivation is increasing over time.
- The pace of decline of deprivation parameters are not uniform, as a result a divergent outcome in respect of inequality is emerged.
- FLR, FLFP, PCSSE and PHC are found to be the main determinants of RCH-DI
- The inequality of the Gap of Rural Healthcare Infrastructure is found increasing except PHC, all the States as well as Districts are not equally endowed with Rural Healthcare Infrastructure

Emerging Issues: "Health for All" - A Paradox???

Policy Options

- Effective use of the bulge of working age people
- Better and safer utilization of RCH services
- Egalitarian distribution of public health care infrastructure
- Adequate Public investment in human capital
- Disbursement of development grant for more deprived states with application of proper fund allocation principle: one of the corrective measures

Future Outlook

- Testing Empirical Validity of Health-Poverty Nexus addressing endogeneity between RH Deprivation and Income poverty
- Formulation and Application of state as well as component specific fund allocation rule

Note: A part of this present research already published: **Trend, Differential and Determinants of Deprivation of Reproductive and Child Health in the Districts of West Bengal, India**
Gargi Bhattacharya and Dr. Sushil K. Haldar
Journal of Health Management, Sage Publications
Vol.16, No.1 (March, 2014), ISSN: 0972-0634 Pg: 93-112