DATA FOR DEVELOPMENT

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A monthly update of socio-economic developments in India by the IHDS research community.

Motherhood and Labor Market Penalty: A Study on Indian Labor Market

Anirban Mukherjee & Sukanya Sarkhel

In this paper, using panel data from the Indian Human Development Survey (IHDS), we estimate the extent of the "motherhood penalty" in the Indian labor market. Employing various measures of motherhood, we find that labor market outcomes—such as wages and employment—are negatively associated with motherhood. This effect is most pronounced when we use *fertility shock* as the measure of motherhood, defined as the difference between the actual and desired number of children. We provide a theoretical framework to explain why fertility shock, rather than the actual number of children, imposes a greater labor market penalty on mothers. Additionally, we examine how the magnitude of the motherhood penalty varies across different cultural norms, family structures, regions, and workplace settings, and we find considerable heterogeneity. Our results are robust to alternative definitions of motherhood.

Table 1: Baseline regression with Fertility shock as measure of motherhood

	(1) Wage	(2) Work_Hr	(3) Employed	(4) Full_time	(5) Part_time
Fertility shock	-.029** (.011)	-.021* (.013)	-.00881*** (.00279)	-.00022 (.00186)	-.00858*** (.0029)
age	.067*** (.014)	-.017 (.016)	.09109*** (.00226)	.02226*** (.0015)	.06883*** (.00234)
Age sq	-.0004** (-.0002)	-.00003 (.00013)	-.00126*** (.00003)	-.00029*** (.00002)	-.00096*** (.00003)
Constant	.2793 (.18817)	7.2349*** (.20912)	-1.03428*** (.04608)	-.28559*** (.03062)	-.74869*** (.04778)
Observations	13144	13508	47853	47853	47853
R-squared	.1223	.03114	.08791	.01334	.05087

Note: Different measures of labor market participation are regressed on fertility in a panel regression with individual fixed effect. Fertility shock is measured by actual minus desired number of children. The controls include age, age squared, education, occupation, and asset (last three not shown the table). Log wage is the dependent variable in column (1), work hours in column (2), employment dummy in column (3), full time employment dummy in column (4) and part time employment dummy in column (5). Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

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Anirban Mukherjee is an Assistant Professor in the department of Economics at the University of Calcutta. He holds a PhD from the University of British Columbia. Before joining the University of Calcutta, he taught at the department of Humanities and Social Sciences, Indian Institute of Technology, Kanpur A Global Labor Organization fellow, his research explores India's technology history, identity politics, gender discrimination in labour markets, and the effect of court quality on entrepreneurship.

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Sukanya Sarkhel is an Assistant Professor in the Department of Management Studies at St. Xavier's College, Kolkata. She holds a PhD from the University of Calcutta. Her research focuses on gender bias in labour markets, motherhood and labour market penalties, and social policy. She has published internationally and delivered lectures on gender and development at national and international institutions.

Examining wage inequality among women in India: A multidimensional analysis of socio-economic disparities

Anam Pandoh & Ashish Singh

This study uses nationally representative data from the Indian Human Development Survey (IHDS) rounds I (2004–05) and II (2011–12) to examine the extent and evolution of wage inequality among women in India. Employing both the Gini index and Mean Log Deviation (MLD), we decompose wage disparities into within-group (vertical) and between-group (horizontal) components based on caste, religion, rural-urban residence, and region. We find that overall wage inequality among women is very high (~60%) and has increased over time, driven predominantly by rising within-group disparities. Particularly stark inequalities are observed across caste and location, with SC/ST and Muslim women consistently earning lower wages. Urban women, while earning higher average wages, also experience higher inequality. Geographically, there are vast inter-regional disparities, with the regions of Central and East having lower wages but higher inequalities. Our analysis underscores the critical need for disaggregated and intersectional approaches in addressing wage inequality among women in India.

Table 2: Wage Inequality (based on Gini coefficient) among women in India for IHDS-1 and IHDS-2

Social Groups	2004-05							2011-12						
	North	Central	East	North East	West	South	All India	North	Central	East	North East	West	South	All India
Caste														
Others	0.53	0.65	0.62	0.53	0.63	0.61	0.62	0.59	0.65	0.65	0.59	0.55	0.61	0.63
SC/ST	0.50	0.44	0.54	0.47	0.52	0.44	0.58	0.61	0.62	0.52	0.63	0.52	0.44	0.59
OBC	0.55	0.53	0.56	0.46	0.59	0.49	0.57	0.65	0.60	0.63	0.67	0.52	0.55	0.60
Religion														
Hindu	0.62	0.56	0.60	0.56	0.61	0.51	0.61	0.67	0.66	0.62	0.65	0.56	0.54	0.62
Muslim	0.56	0.61	0.38	0.53	0.53	0.51	0.58	0.68	0.63	0.37	0.40	0.52	0.52	0.58
Others	0.54	0.64	0.65	0.34	0.63	0.56	0.59	0.64	0.18	0.59	0.56	0.57	0.55	0.63
Location														
Rural	0.52	0.41	0.5	0.52	0.39	0.43	0.47	0.58	0.55	0.50	0.65	0.36	0.48	0.52
Urban	0.53	0.61	0.61	0.33	0.55	0.57	0.59	0.61	0.63	0.62	0.45	0.54	0.54	0.62
Total	0.61	0.58	0.62	0.53	0.61	0.52	0.59	0.67	0.67	0.65	0.63	0.56	0.54	0.62

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Anam Pandoh is a research scholar, pursuing PhD in Economics at the Shailesh J. Mehta School of Management, IIT Bombay. Her research primarily focuses on socioeconomic inequalities among Indian women. She works with large-scale datasets and is interested in development economics, gender studies, demography and public policy.

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Publications List

Recent Publications using IHDS Data

Arora, A. (2025). Evaluating the Impact of the National Scheme of Incentive to Girls for Secondary Education (NSIGSE) on Gender Parity and Educational Equity in India. Master's thesis. Department of Economics, Tufts University. **Link**.

Chatterjee, E., & K.D, J. (2025). Unwanted fertility and impacts on self-rated health of women in India. Population Studies, 1-25. **Link**

Cerovich, R. L. (2025). The Creation of a Frailty Index: A Health Variable for Future Research in a Versatile Data Set. Honors Program. Business Fellows. Baylor University. **Link**

Devi, T., Sengupta, R., Rooj, D., & Gopathi, M. (2025). Investing in education: The Impact of Scholarships on School Attendance in India. International Journal of Educational Development, 116, 103309. **Link**

Grover, M., & Sharma, A. (2025). Women's inheritance rights reforms and impact on women's empowerment: evidence from India. Review of Economics of the Household. **Link**

Jaikumar, S., Viswanathan, M., Dutta, S., & Sreekumar, A. (2025). Effects of household characteristics on low-income family businesses: evidence from India. Journal of Research in Marketing and Entrepreneurship. **Link**

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Neog, B. J. (2025). Intergenerational Transmission of Human Capital in India: The Role of Gender and the Extended Family. The European Journal of Development Research. **Link**

Rathee, N., & Nargunam, R. (2025). An Actuarial Perspective on the Discrepancies in Health Insurance Pricing: Evidence from India. Research Square. **Link**

Tabassum, S., & Lalji, C. (2025). Harder being left behind: Health status of Indian women from migrant households. Economics & Human Biology. **Link**

IHDS in News

Editorial team. (2025). Climate Change Fuelling Water Poverty in India: Study. Carboncopy. **Link**

Bhaskar Parichha. (May, 2025). How do Odias Readily Embrace Other Languages? OdishaPlus. **Link**

About IHDS

The India Human Development Survey (IHDS) began as a nationally representative, multi topic survey of 41,554 households in 1,503 villages and 971 urban neighborhoods across India. The first round of interviews were completed in 2004-05; Data is publicly available via ICPSR. The second round re-interviewed most of these households in 2011-12 (N=42,152) and data for the same is available via ICPSR. Fieldwork for IHDS 3 was undertaken in 2022-24 and data is currently being cleaned and processed.

IHDS 3 has been jointly conducted by researchers from the University of Maryland, the National Council of Applied Economic Research, Indiana University and University of Michigan.

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