

# Oaxaca's Double Edged Sword: Gender Wage Discrimination in India

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# Introduction

- The gender wage gap, a persistent concern in labour economics, continues to drive scholarly inquiry worldwide. While extensive research has explored its roots, this study focuses on its manifestation in developing nations, specifically India.
- Despite strides in gender equality, **wage disparities persist**. Using data from the **Indian Human Development Survey (IHDS-II) 2011**, this research aims to **identify factors contributing to the gender wage gap in India**.
- Employing the **Blinder-Oaxaca decomposition**, we aim to quantify the influence of various variables on the wage gap, accounting for rural-urban differences.
- Ultimately, this study is aimed at fostering gender equality and economic empowerment in India and similar contexts.

# Literature Review

## 1. The Gender Wage Gap:

- Significance in labour economics
- Definition by Goldin (2014) as a summary statistic for gender differences in work
- Human capital differences and differential treatment as factors contributing to the gap

## 2. Literature on Gender Gap:

- Discrimination characterized by gender wage gap, sticky floor, glass ceiling
- Various economic and social psychological theories explaining discrimination
- Oaxaca (1973) defines discrimination against females based on relative wage comparison

# Literature Review

## 3. Theoretical Insights into Gender Wage Gap:

### Human Capital Theory:

- Role of education, training, and professional experience in wage discrepancies
- Introduced by Becker (1964)

### Theory of Gender Discrimination:

- Influence of gender biases and societal norms on wage gaps
- Concept of statistical discrimination by Phelps (1972)
- Theory of institutional discrimination by Reskin and Padavic (1994)

### Segmentation Theory:

- Emphasizes occupational segregation as a driver of wage differences

### Role of Cultural and Social Factors:

- Gendered institutions proposed by Acker (1990)
- Social identity theory influencing gendered outcomes in the labour market

# Literature Review

## 4. Unique Patterns of Wage Discrimination in Developing Nations:

- Labour markets in developing nations exhibit significant gender segmentation, with many women engaged in non-market activities
- Over-representation of women in informal sectors exacerbates wage gaps
- Empirical investigations, often using data from sources like the NSSO, provide insights into wage discrimination dynamics
- Notable trends in the gender wage gap observed in studies analyzing NSSO data, such as the narrowing gap in India between 1987 and 1999

# Data and Variables

- **Dataset:** Indian Human Development Survey (IHDS-II) 2011. (produced jointly by the NCAER, New Delhi and the University of Maryland).
- IHDS-II spans 42,152 households; 27,579 rural and 14,573 urban areas.
- For our analysis:
  1. **Dependent variable:** natural logarithm of the hourly wage. (note: An individual working more than 240 hours a week is considered to be a part of the workforce)
  2. **Independent variables:** Individual's education captured by the maximum level of education achieved (in years); Potential experience = Individual's age - education level (in years) - 5; Demographic variables include gender, place of residence (urban or rural) and marital status (captured using a dummy); Financial position represented by the total household assets; also accounted for the total number of children aged 0-14 and elderly above the 65 in the household.

# Methodology

## I. Regression Analysis (OLS):

$$W_i = \beta_1 + \beta_2(\text{Education}_i) + \beta_3(\text{Experience}_i) + \beta_4(\text{MaritalStatus}_i) + \beta_5(\text{Assets}_i) + \beta_6(\text{Children}_i) + \beta_7(\text{Elders}_i) + \beta_8(\text{HighestAdultEducation}_i) + u_i$$

Where  $W_i$  is log of hourly wages

## II. Blinder Oaxaca Decomposition:

$$R = \underbrace{[E(X_A) - E(X_B)]' \beta_B}_{\text{Endowment Effect (E)}} + \underbrace{E(X_B)' (\beta_A - \beta_B)}_{\text{Coefficient Effect (C)}} + \underbrace{[E(X_A) - E(X_B)]' (\beta_A - \beta_B)}_{\text{Interaction Effect (I)}} = E + C + I$$

Where,  $R = E(Y_A) - E(Y_B)$  for two groups A & B (men and women respectively, in our analysis)

# Results & Analysis : Descriptive Statistics

Table 1: Mean Characteristics of Sample Households

	Rural	Urban
Number of People	6.1 (2.9)	5.8 (2.7)
Age of Respondent	29.3 (20.6)	30.8 (19.8)
Assets	13.6 (6.0)	20.0 (5.3)
Total Income	118488.0 (209375.7)	193548.8 (291978.3)
Number of Male Children	1.0 (1.1)	0.8 (0.9)
Number of Female Children	1.0 (1.1)	0.8 (1.0)
Education Level of Respondent (in years)	4.5 (4.5)	6.8 (5.2)
Highest Education of Adult(in years)	7.7 (4.9)	10.6 (4.5)
Highest Education of Male (in years)	7.3 (4.9)	9.8 (4.6)
Highest Education of Female (in years)	4.7 (4.9)	8.2 (5.3)

Note: Standard deviation in parentheses

Source: Authors' calculations using IHDS-2011

Figure 1: Distribution of Wage by Gender

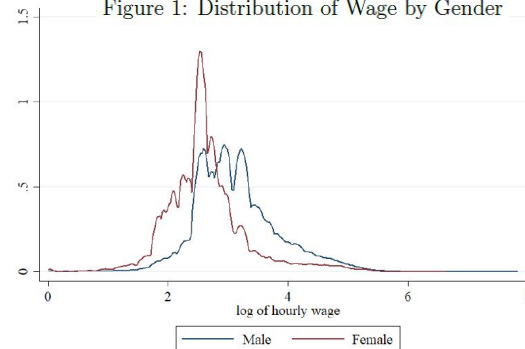


Table 3: Duration of Work and Wage by Gender

	Male	Female	Difference	Std. Error
Work Days (per year)	136.133	52.381	83.752***	(0.540)
Work Hours (per year)	1022.187	316.025	706.162***	(4.261)
Hourly Wages & Bonuses	31.082	19.153	11.929***	(0.325)

Note: Difference defined as Male-Female. \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Source: Authors' Calculation using IHDS-2011



# Results & Analysis

Table 2: Balance Test by Gender

	Male	Female	Difference	Std. Error
Farm Work (Family)	0.172	0.116	0.055***	(0.002)
Animal Care	0.098	0.135	-0.038***	(0.001)
Business	0.087	0.025	0.061***	(0.001)
Farm Labourer	0.088	0.071	0.017***	(0.001)
Non-Agricultural Labourer	0.155	0.042	0.113***	(0.001)
Salaried Work	0.129	0.038	0.091***	(0.001)
<i>Any Work</i>	0.518	0.249	0.270***	(0.002)

Note: Difference defined as Male-Female. \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Source: Authors' Calculation using IHDS-2011

- **Table2:** Difference in proportion significant at 1% level for all employment categories except animal care.
- **Table4:** Education, experience and household financial background significant across both gender and region.

Table 4: Modified Mincer Regression

	Urban		Rural	
	(1) Male	(2) Female	(3) Male	(4) Female
Education (in years)	0.05*** (0.002)	0.07*** (0.004)	0.02*** (0.001)	0.02*** (0.002)
Experience	0.01*** (0.001)	0.01*** (0.001)	0.00*** (0.000)	0.00*** (0.000)
Marital Status (Married = 1)	0.14*** (0.017)	0.01 (0.026)	0.06*** (0.010)	0.04*** (0.010)
Total Household Assets	0.05*** (0.001)	0.05*** (0.003)	0.04*** (0.001)	0.03*** (0.001)
No. of Children in Household (0-14yr)	-0.02*** (0.005)	-0.02 (0.010)	-0.00 (0.003)	-0.01* (0.003)
Total Elderly Adults in Household (>65yr)	-0.07*** (0.009)	-0.05* (0.019)	-0.02*** (0.005)	0.00 (0.007)
Highest Education of Adult in Household	-0.00 (0.002)	-0.00 (0.004)	0.00 (0.001)	-0.00 (0.001)
Constant	1.61*** (0.027)	1.31*** (0.058)	2.23*** (0.014)	2.06*** (0.020)
Observations	12923	3834	24077	12449
R-Squared	0.33	0.34	0.19	0.11

Standard errors in parentheses

Dependent variable is log of Hourly Wages

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

# Results & Analysis

Table 5: Breakdown of Gender-Wage Gap Differential: Blinder Oaxaca Decomposition

	Coefficients		
	All	Urban	Rural
Prediction (Male)	3.131*** (0.004)	3.409*** (0.007)	2.982*** (0.004)
Prediction (Female)	2.635*** (0.005)	2.986*** (0.015)	2.527*** (0.005)
Difference	0.496*** (0.007)	0.423*** (0.017)	0.454*** (0.006)
Explained Differential (Endowment)	0.169*** (0.005)	0.143*** (0.011)	0.075*** (0.004)
Unexplained Differential (Coefficient)	0.333*** (0.006)	0.287*** (0.014)	0.370*** (0.006)
Interaction	-0.007* (0.004)	-0.007 (0.007)	0.009* (0.005)
Proportion of Explained Difference	34.11%	33.70%	16.49%
Proportion of Unexplained Difference	67.26%	67.88%	81.51%
N	53,283	16,757	36,526

Standard errors in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Gender wage differential highest at an all India level (0.49).

## Interpretation (All India Level):

- If women had men's endowments, their wages would increase by 0.17 units (Endowment Effect)
- If women had men's estimated coefficient, their wages would increase by 0.33 units (Coefficients Effect)

34.11% of the overall wage differential is explained by differences in endowments at the all India level.

65.89% is explained by unexplained and *potentially discriminatory* factors at the all India level.

Unexplained difference in wage gap **higher amongst rural households** - may indicate effects of *social and cultural norms*.

Results in line with Sarkhel (2016), Agarwal (2014) who conducted a similar analysis in India using IHDS-I.

# Conclusion

In conclusion, tackling the gender wage gap in India necessitates a holistic policy approach that harnesses both tangible and intangible factors.

While tangible interventions such as supporting work-life balance initiatives and addressing occupational segregation are vital, policymakers must also recognize the significance of non-tangible returns. This includes enforcing anti-discrimination laws and promoting transparent hiring practices to create a fairer workplace environment.

By prioritizing both tangible and intangible aspects, policymakers can effectively reduce the gender wage gap, fostering gender equality and economic empowerment across India.