GENDER DISCRIMINATION IN THE URBAN LABOUR MARKET IN INDIA

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ABSTRACT

Wage difference on gender basis has been a great global concern for over a century now. Discrimination between men-women wage payments is a very common phenomenon in India and elsewhere. Though some achievements have been made in this direction, the rate of progress is very slow. The objective of the present study is to highlight existing wage gap between male and female workers for both regular wage (salaried employees) and casual labourers for the year 2009-2010 in urban India using different earning regressions for male and female. Further Blinder-Oaxaca (1973) decomposition method has been used to study the labour market discrimination towards women. We have used 66th round of NSSO data and found that approximately the entire gender wage differential among regular wage earners is explained by labour market discrimination. Unlike regular wage earners, the endowments of the casual labourers (such as education, experience etc.) explained more than one-third of the gender wage gap.

Key words: labour, wage discrimination, gender, decomposition, India.

I. INTRODUCTION

In present days, the issue of gender discrimination at work is very common. The problem is not only apparent in the developing world, but also widely experienced by female workers across the globe. In India, half of the population is women. According to Census of India (2011), the percentage of women in total population is 48 percent. Despite this high percentage of females in the total population, the women participation rate in the labour force is only approximately one-fourth. Although, the Indian government has put forward a number of laws to counter gender discrimination at work plane *"the gender pay gap has got institutionalized. ....if these issues are not contained right now, then the problem of gender pay gap can further aggravate"* (Wage Indicator Data Report, 2013).

Gender wage differential is the difference between the wage of the male and the female workers in the labour market for the same work. Economic theory in trying to explain gender wage difference put forward a number of explanations to account for such differences. There are two broad groups of such explanations – human capital theory and labour market discrimination theory. Human capital theory highlights the differences in accumulation of human capital such as differences in skills, education, experience etc. among male and female workers. On the other hand, the labour market discrimination theory indicates towards the practice of discrimination towards women by the employers (for example, inequitable treatment of equally qualified male and female workers).

According to human capital theory (Mincer, 1958; Becker 1964), gender wage differential arises due to differences in productivity of male and female workers, which intern depends on the difference in accumulation of human capital. Thus the human capital theory suggests that the since women accumulate less education, technical skill, work experience etc. they are less paid in the labour market. However, empirical evidence (Kingdon and Unni 1997, Reilly and Dutta, 2005; Madheswaran and Khasnobis, 2007; Khanna, 2012) suggests that human capital only cannot account for the entire male-female wage gap, and the wage differential may even exist between the workers with same level of education, experience, training etc.

The neo-classical theory of labour market discrimination suggests that the gender wage differential may be explained by the "taste" and preference of the employers (Becker, 1971). Suppose the employers have a "taste" that they prefer male workers over female. In this case, employing female workers impose an additional psychic cost on the recruiter. Therefore, the cost of hiring an additional woman is equal to the wage plus an additional factor that compensate for the additional psychic cost. Becker termed this additional cost as "discrimination coefficient"[i]. Therefore, equilibrium wage rate of men will be equal to the wage rate of women plus the discrimination coefficient[ii]. However, Arrow (1972) and Phelps (1972) critiqued the neo-classical discrimination model and came up with a statistical model to study discrimination based on the employer uncertainty about the productivity of the workers. Oaxaca (1973) and Blinder (1973) made another major contribution to the same literature by quantitatively measuring the wage discrimination. Several studies have used the Blinder-Oaxaca (B–O from onwards) decomposition to study wage differentials across occupations, industry, religions, social categories, and gender.

There are a large number of studies using B–O decomposition to account for the gender wage discrimination in India. Reilly and Dutta (2005) largely based on urban or occupation-specific labour market data revealed that the average wage differentials between males and females were more or less stable during 1980s and 1990s. The gender discrimination component explains about one-third of the overall wage gap. Kingdon (1997) presents a

detailed analysis of the male-female earnings differentials for self-employed and the wage earners in urban Lucknow. The study revealed that about 41 percent of the wage differential could be attributed to "gender discrimination". Kingdon and Unni (1997) studied gender wage differentials using data from the NSS 43rd round for the districts of Madhya Pradesh and Tamil Nadu. The findings showed that females suffer high degree of discrimination in the urban labour market and the level of education contributes very little to this discrimination. In fact, the authors made a very crucial point that the persistence of the discrimination in the labour market contributes towards low educational attainment and not the other way round as suggested by human capital explanations. Khanna (2012) finds that the discrimination component at the lower wage quintile accounted for over 80 percent of the average wage gap and at the upper wage quintile explained more than the total[iii]. Madheswaran and Khasnobis (2007) have used three rounds of the 38th (1983), 50th (1993-1994) and 55th (1999-2000) with an objective to study gender wage differentials for both regular and casual workers only in urban India. They highlighted that the discrimination against female worker in the labour market has increased over the period. Thus, empirical evidence suggests that there exists large-scale discrimination towards women workers in India even after controlling for the difference in human capital such as education, training, experience etc. This discrimination enhances when the women workers face barriers to entry in the formal sector jobs[iv]. According to Madheswaran and Khasnobis (2007), *"there are indications that this is indeed happening in most developing countries. Women face a variety of barriers in accessing jobs in the formal sector, partly attributed to unhelpful attitudes and preferences of employers"*. Thus in developing countries the barrier to entry in the formal sector works as another form of discrimination towards the women.

Following Madheswaran and Khasnobis (2007), we analyse the gender wage deferential for regular wage as well as casual workers for the year 2009-2010 in urban India[v]. The specific objective of the present study has been summarised by the following set of questions – Is there any gender wage gap in the Indian urban labour market? If so, what are the role of factors like education, experience etc. as suggested by the human capital theory? What is the extent of the labour market discrimination towards women in Indian urban labour market, which is not explained by the endowments of the labourers? Therefore, the contributions of the present study in the literature are as follows– Firstly, the study used most recent data from 66th round of NSS, which enable us to study and compare labour market discrimination at most recent date. Secondly, we study the impact of different level of education on gender wage differential. Thirdly, the study analyse the gender wage differential among different social groups. Lastly, studying regular wage and casual workers in the urban labour market we have been able to throw light on the issue of barriers to entry for the women workers in the formal sector of the economy.

The paper is organised as follows. Section II of the paper discusses data and methodology used in the paper. Section III presents the major findings of this paper where an attempt have been made to look at the extent to which differences in the labour market characteristics and discrimination towards women workers are responsible for explaining gender wage gaps among regular and casual workers in Urban India. Section IV concludes the study.

II. METHODOLOGY AND DATA

The existing gender wage gaps are analysed with the help of secondary data of the urban labour market in India. The paper relies on the data provided by the National Sample Survey's Employment-Unemployment Schedule (EUS) of the "thick" round for the year 2009-2010. Within the urban labour market, the data is restricted to the regular[vi] wage/salaried full time workers and casual workers[vii] of age between 15 to 59 years. The major reason for such restrictions on the data is that the regular salaried full time workers roughly correspond to formal sector workers. The casual labourers on the other hand comprise approximately the informal sector. Thus, analysing data from these two sectors we will be able to highlight gender wage discrimination in a sector that is governed by the "so-called" stringent labour laws and compare with the sector where such laws are absent. The EUS records the data on weekly wages, which has used to estimate the daily wage earnings using the number of days worked in the survey week. The wage rates in this paper are the nominal wage rates measured in rupees. However, to get rid of the outliers the wages have trimmed by 0.1 percent from the top and the bottom[viii].

Discrimination in the labour market can be studied in two different ways. Firstly, one can run a regression of earnings on different characteristics of male and female workers together. In this regression, a dummy variable for sex of the workers included in the right hand side yield the differential impact of male and female. The problem with this regression is that it can provide biased estimates as it assume same wage structure for both males and females. However, literature has shown that the wage gap in the labour market may be due to the difference in human capital accumulation by the males and the females. Therefore, a single equation may not be appropriate in this case. The second approach is a decomposition technique where two separate earning equations are estimated. In this approach, one can decompose the observed wage gap into an `endowment' component and a `treatment' component. The later represents an unexplained residual, which is termed as `discrimination' coefficient. Accordingly, in the present study separate earning equations for men and women have been estimated using the standard OLS regression technique to assess how different covariates such as education, social group, and union membership, affect within and between group (gender) inequalities. Finally, to study women labour

discrimination Blinder-Oaxaca (Appendix 3) decomposition technique has been employed that bifurcates the observed wage gap into 'endowment' component and 'coefficient' component.

III. ESTIMATION RESULTS

The following estimates will provide us a gross idea about wage discrimination among gender across India. In the table 1 we have try to analyze the wage rate differentials among men and women in urban areas. A general analysis of the table clearly reveals that the wages, which are received by the women, are fairly less than their male counterparts. It is clear from detailed average wage/ salary earnings per day received by regular wage/ salaried employees (Appendix 2) that in all states in India the female workers employed are very less as compared to their male counterpart. When whole of the table is analyzed it becomes evident that women are facing wage discrimination across urban labour market in India. Bihar, Haryana, and Punjab are the few states where in urban areas the wages of women labour are more than male.

**Table 1: Wage rates (Rs.) per day for persons of age 15-59 years (2009-2010)**

CATEGORY OF WORKERS	URBAN	
	Male	**Female**
Casual labour in other type of works	131.92	76.73
Regular wage/ salaried Persons	377.16	308.79

Source: NSSO 66th Round (July 2009 – June 2010)

According to the labour regulations by government is that "equal pay for equal work". However, the data presents a different picture altogether. Regular full-time workers, the major proportion of whom are likely to be engaged in the formal sector, are less likely to exhibit gender wage differences as the sector is prohibited.

The wage data of regular wage/salaried persons reveals that, as envisaged the average daily wages increases as one moves up the education ladder. However, the wages of females are less than that of their male counterparts at all the levels of education. The first thing revealed by the Figure 1 is that the wage differentials are highest among the illiterates and those have completed education only until below primary. However, the wage differentials in urban areas start declining with the level of education. The extent of the labour market discrimination prevalent in the urban labour market for regular wage/salaried workers can be gauged from the fact that the females who have attained education until middle school receive wages even lower than an illiterate male on an average.

Figure 1: Gender Wage Differential across various levels of education (Regular Workers)
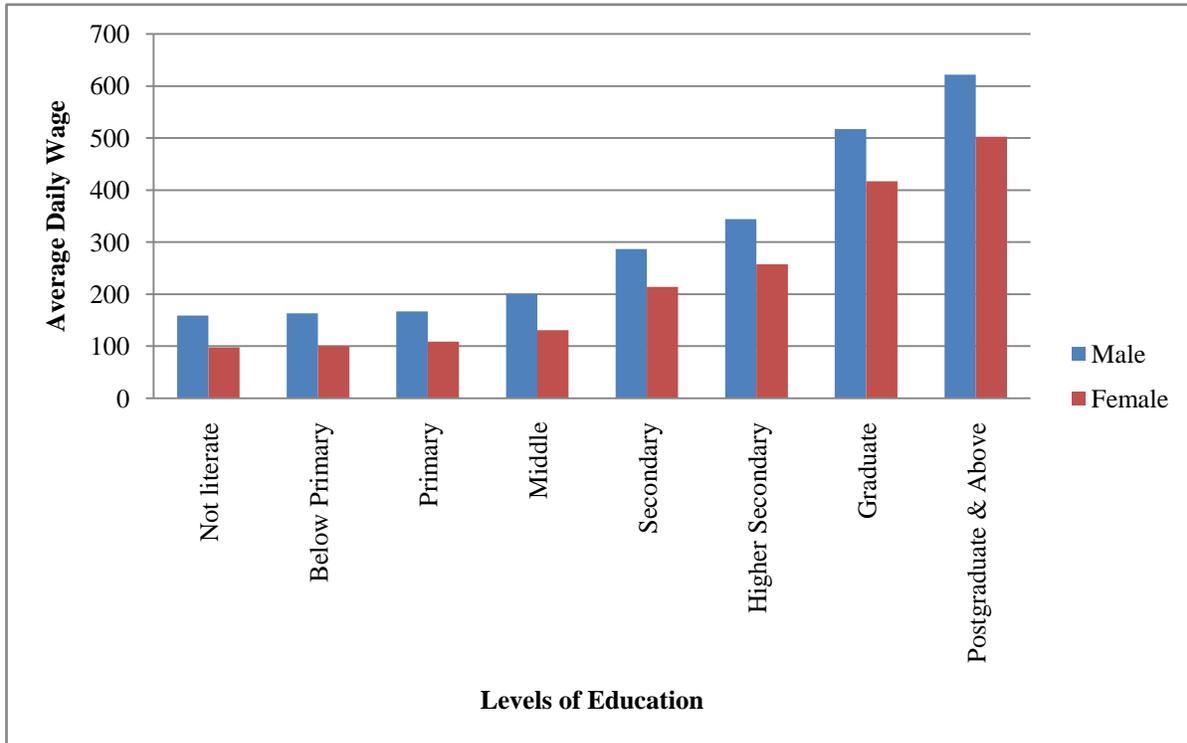
Source: *Author's calculation from NSSO 66th Round (July 2009 – June 2010)*

Wage differences among the two sexes can also be observed across the occupation categories for regular full time wage/salaried workers. The dominant occupations for females are those of professionals, technicians and associate professionals, elementary occupations while for males are those of craft and related trade and plant and machine operators and assemblers. The gender wage gap is the highest for craft and related workers (approximately 94 percent) followed by plant and machine operators and assemblers (Table 2).

Table 2: Share of Regular Workers and Gender Wage Differential

Regular (full time) Urban Workers					
Occupation Categories	Share (%)		Avg. Daily Wages		Wage differential
	Males	Females	Males	Females	
legislators, senior officials and managers	7.03	9.52	580.37	451.14	28.65
Professionals	11.82	17.37	579.90	485.22	19.51
technicians and associate professionals	12.29	18.29	465.61	404.31	15.16
Clerks	8.47	6.43	400.66	348.41	14.99
service workers and shop and market sales workers	16.76	11.16	239.68	178.45	34.31
skilled agriculture and fishery workers	1.37	1.49	268.00	206.41	29.84
craft and related trade workers	14.15	9.81	231.79	119.15	94.54

plant and machine operators and assemblers	12.19	4.95	260.82	146.27	78.31
elementary occupation	10.32	15.41	179.46	102.84	74.50
workers not classified by occupations	5.61	5.56	406.47	375.60	8.22

Source: Author's calculation from NSSO 66th Round (July 2009 – June 2010)

The same disparity also exists in the casual urban labour market also. Table 3 presents the share of male and female along with the average wage differentials in the casual urban labour market according to the level of education. Approximately 51 percent of the females in the casual labour force are illiterate and unlike for the regular labour force, the level of education is low for females even at the higher education spectrum. The mean daily wages for casual workers increases with every additional year of education and the wage differential trend camouflages the one exhibited by the regular workers.

Table 3: Gender Wage Differential across various levels of Education (Casual Workers)

Casual Urban Workers					
Levels of Education	**Share (%)**		**Avg. Daily Wages**		**Wage differential**
	Males	Females	Males	Females	
Not literate	23.17	51.02	102.66	58.36	75.91
Below Primary	11.69	12.24	103.97	59.80	73.86
Primary	19.76	15.78	118.68	80.14	48.09
Middle	26.61	14.40	120.17	84.48	42.25
Secondary	12.54	4.47	124.65	87.85	41.89
Higher Secondary	4.15	1.08	130.35	92.72	40.58
Graduate	1.14	0.60	140.90	102.37	37.63
Postgraduate & Above	0.24	0.15	154.96	114.31	35.56

Source: Author's calculation from NSSO 66th Round (July 2009 – June 2010)

The flexible way to look into the gender wage gap is to estimate a wage regression with the help of different educational attainment of the labourers. Here in this section the earning function has been estimated separately for both male and female in regular salaried and casual labour market for the period 2009-2010, with an ultimate objective to estimate the wage differential that is attributed to discrimination. The semi-log functional form has been employed for the estimation, wherein the natural log of daily wage (in nominal terms) is used as the dependent variable and independent variables includes age and age squared which serves as the proxy for experience in the labour market. Other covariates used in the regression equation includes different levels of education such as - below primary and primary, middle school, secondary education, higher secondary education,

diploma and certificate courses, graduate, postgraduate and above, and technical degree. The coefficients for each of these independent variables yield the private rate of return per year of education at different levels of education. These figures not only indicate towards the productivity of education but also serve as an indicator of the incentive for an individual worker to invest in human capital. 'Illiterate' has been used as the base category. Social category, namely Scheduled caste (SC), Scheduled tribe (ST) and Other Backward Categories (OBC) are also included in the regression equation while "Others" forms the reference group. The last term that has been included in the equation includes whether a worker is a member of a Trade Union or not and does this factor impacts his/her daily wages. The results are reported in Table 4 below.

Table 4: OLS Results Dependent Variable: Natural log (daily wage rate)

Variables	Regular Workers				Casual Workers			
	Male		Females		Males		Females	
	Coeff.	t-values	Coeff.	t-values	Coeff.	t-values	Coeff.	t-values
Age	0.048*** (0.004)	13.59	0.031*** (0.009)	3.559	0.050*** (0.004)	13.504	0.0288*** (0.004)	6.5
Agesq	0.000	-0.263	0.000	-0.976	-0.00061*** (0.000)	-18.31	-0.00034*** (0.000)	-5.89
Bprim & prim#	0.052* (0.028)	1.818	0.215*** (0.055)	3.916	0.027* (0.017)	1.609	0.179 (0.038)	4.7
Middle#	0.210*** (0.027)	7.71	0.326*** (0.059)	5.513	0.149*** (0.018)	8.199	0.110*** (0.045)	2.43
Secon#	0.423*** (0.027)	15.75	0.765*** (0.059)	13.012	0.201*** (0.021)	9.49	0.230*** (0.07)	3.17
Hsecon#	0.656*** (0.028)	23.46	1.116*** (0.058)	19.37	0.165*** (0.033)	4.990	0.695*** (0.117)	5.94
Grad#	0.942*** (0.027)	35.43	1.435*** (0.049)	29.482	0.544*** (0.123)	4.41	0.55139	1.42
Post Grad & abv#	1.131*** (0.030)	37.52	1.562*** (0.054)	28.992	0.263*** (0.055)	4.82	0.349*** (0.195)	1.793
Technical educ#	0.412*** (0.026)	16.07	0.259*** (0.058)	4.491	0.440* (0.247)	1.779	1.402* (0.782)	1.794
Diploma/ Certificate Course#	0.844*** (0.034)	24.96	1.308*** (0.070)	18.75	0.198** (0.083)	2.389	0.223 (0.287)	0.778

SC#	-0.109*** (0.017)	-6.51	-0.107*** (0.042)	-2.541	-0.087*** (0.018)	-4.859	-0.101** (0.050)	-2.034
OBC#	-0.195*** (0.012)	-15.89	-0.270*** (0.031)	-8.62	-0.031** (0.016)	-1.910	-0.109** (0.048)	-2.275
ST#	0.006 (0.021)	0.270	0.094** (0.47)	2.016	-0.030 (0.025)	0.84	-0.078 (0.062)	0.207
Unionmem#	0.335*** (0.012)	28.66	0.547*** (0.029)	18.539	0.165*** (0.017)	9.932	0.233*** (0.050)	2.06
Constant	3.473 (0.068)	51.166	3.085 (0.163)	18.973	3.590 (0.064)	56.31	3.562	22.38
F-Value	939.157		266.685		89.96		26.22	
R^2	0.416		0.475		0.1961		0.1967	
Adj.R^2	0.415		0.473		0.1938		0.1987	
N	18850		4223		10885		2687	

Source: Author's calculation from NSSO 66th Round (July 2009 – June 2010)

Note: (#) dF/dx is for discrete change of dummy variable from 0 to 1. z is the test of the underlying coefficient being 0. ***, **, * are significant at 1%, 5% and 10% level respectively.

The age coefficient is positive for all the equations while the age square is either negative or zero and both the variables are significant at 1 percent level of significance. Thus, one additional year of experience, increases wage by approximately 4.8 percent for males while only by 3.1 percent for females in regular full time work. The values are roughly the same for age coefficient for both the sexes respectively in casual labour force. The rate of return to education tends to rise with each level of education as apparent from the coefficients of education in the wage equation for both regular and casual workers. The rate of return to female education outstrips the returns to males in the regular labour market. All the education coefficients are significant at 1 percent level. The caste dummies indicate that compared to the reference category (others in this case), SCs, STs and OBCs earn a significantly lower wage in the regular (barring regular full time ST workers in urban labour market) and casual labour market. Although, it is true that the power and control of Unions have declined in the post liberalisation era but still, being a member of a union exerts a strong impact on the workers daily wages. The coefficient for this variable is positive and significant (at 1 percent) for both males and females in regular as well as casual labour market.

As adopted in the existing literature, Chow test has been conducted using the wage function. The calculated F-value shows that the earning functions differ significantly between male and female workers in the casual and regular labour market. Hence, it is necessary to decompose the earning differential into explained and

unexplained portions, which is carried out in the next Table 5. The OLS daily wage regression estimates are used to decompose gender wage gap into endowment component and treatment component.

Table 5: Blinder-Oaxaca Decomposition Results

	Regular Workers	Casual Workers
Explained (endowment)	0.003	0.29
Unexplained (treatment)	0.40	0.58
Explained Difference (%)	**0.75**	**33**
Unexplained Difference (%)	**99.25**	**67**

Source: Author's calculation from NSSO 66th Round (July 2009 – June 2010)

The results reveal that the explained component in case of regular full time urban workers is very low and the discrimination or the 'treatment' component is entirely responsible for log wage differential between male and female. What regression results for females employed in this sector highlighted is that the personal characteristics of the women are not unfavorable vis-à-vis men; instead, return to these characteristics widens the gender wage gap. Hence, it can be concluded that "pre-market discrimination" does not prevail in case of regular wage/salaried workers. In fact, at the higher education spectrum, women exhibit relatively better characteristics. The unexplained discrimination thus shows women who are equally qualified as men and possesses other work related characteristics similar to their male counterparts, are still paid less than males. However, the scenario is different in the casual labour market as the endowment difference stands to be around 33 percent while the unexplained discrimination is about 67 percent.

IV. CONCLUSION

The increasing participation levels of women in the paid labour market activities is viewed as a positive outcome for improving women's status by bridging the hiatus in this crucial sphere of economic involvement. The consideration of women's participation in paid spheres of the labour market differs from that of males due to the stereotypical traditional notion that women's roles are limited to the private, domestic spheres. Under this background, the study focuses on whether gender wage discrimination exists in the Indian urban labour market. For this, we investigated regular salaried workers where law of equality of wage is in operation as well as the casual labour market (where such laws are absent), by using unit level data on employment and unemployment from 66th round survey conducted during 2009-2010 by the NSSO. The study analyses the gender wage gap at different levels of education by considering different social dimensions to examine the returns to education as suggested by human capital theory (Mincer, 1958; Becker 1964). The results from regression analysis show that

the gender wage gap varied widely across the different social groups and at different levels of educational attainment. The rate of return to education tends to rise with each level of education as apparent from the coefficients of education in the wage equation for both regular and casual workers. On the other hand, the rate of return on female education outstrips that of the males in the urban labour market. These findings are consistent with the earlier studies on Indian labour market (Duraisamy, 2006; Madheswaran and Khasnobis, 2007). Among women of the socially backward classes, workers in SC category were in a superior position than those belong to the ST category. The decomposition results further show that for regular salaried workers almost the entire gender variation in wage (approximately 99 percent) is due to the labour market discrimination and the workers endowments represent only a small portion of the total wage gap. Madheswaran and Khasnobis, (2007) in a similar study for the years (1983, 1993-1994 and 1999-2000) also report a very high discrimination towards female workers in the regular salaried employment category. However, for the casual workers the endowment component represents 33 percent and the discrimination component represents 67 percent of the male-female earning differential. Therefore, in the urban casual labour market more than one-third of the earning variation is due to the difference in the education attainments and other endowments of the male and female workers. These results in a way provide evidence against the human capital theory and support the theories of discrimination of female workers in the labour market. In the regular salaried employment where jobs are advertised and recruitment regulations are stringent, difference in human capital endowments are not the source of earning difference, but almost the entire wage difference is due to discrimination towards the women workers by the employers in the form of offering them lower wage. This finding also explains high persistence of women workers in the informal sector despite lower wage and absence of social security benefits enjoyed by the formal sector workers.

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Appendix 1: Distribution of Sample (Urban)

Category of Workers	Regular Wage/Salaried Persons	Casual Labour	Total
Males	18,850	10,885	29,735
Females	4,223	2,687	6,910
Total	23,073	13,572	36,645

Source: Author's calculation from NSSO 66th Round (July2009 – June 2010)

Appendix 2: Average wage/ salary earnings per day received by regular wage/ salaried employees (2009-10)

STATE	URBAN	
	Male	**Female**
Andhra Pradesh	341.63	248.05
Assam	491.19	380.92
Bihar	338.31	**500.75**
Gujarat	306.58	221.35
Haryana	316.91	**330.10**
Himachal Pradesh	487.56	435.70
Jammu & Kashmir	379.61	321.86
Karnataka	414.95	293.37
Kerala	450.76	320.61
Madhya Pradesh	325.15	230.33
Maharashtra	439.30	391.71
Orissa	358.89	238.48
Punjab	342.35	**374.49**
Rajasthan	374.42	317.85
Tamil Nadu	319.60	277.23
Uttar Pradesh	360.29	285.54
West Bengal	391.77	277.08
All India	**377.16**	**308.79**

Source: NSSO 66th Round (July 2009 – June 2010)

Appendix 3: Blinder-Oaxaca Decomposition Method

The decomposition method enables us to separate the wage differential into differences that can be explained by differences in characteristics and those that cannot be explained by differences in characteristics. The gross wage differential can be defined as

$$G = \frac{Y_m - Y_f}{Y_f} = \frac{Y_m}{Y_f} - 1$$

(1)

Where Y_m and Y_f represents the wages of Male individuals and individuals belonging to the female categories respectively. In the absence of labour market discrimination, the male- female differential would reflect pure productivity differences (Q):

$$Q = \frac{Y_m^o}{Y_f^o} - 1$$

(2)

Where the superscript denotes the absence of market discrimination. The market discrimination coefficient (D) is then defined as the proportionate difference between G+1 and Q+1

$$D = \frac{(Y_m / Y_f) - (Y_m^o / Y_f^o)}{(Y_m^o / Y_f^o)}$$

(3)

Equations (1)-(3) imply the following logarithmic decomposition of the gross earnings differential

$$\ln(G+1) \quad = \quad \ln(D+1) \; + \; \ln(Q+1)$$

(4)

This decomposition can be further applied within the framework of semi-logarithmic earnings equations (Mincer, 1974) and estimated via OLS such that

$$\ln \overline{Y}_m = \sum \hat{\beta}_m \overline{X}_m + \varepsilon_m \qquad \text{(Male Wage equation)}$$

(5)

$$\ln \overline{Y}_f = \sum \hat{\beta}_f \overline{X}_f + \varepsilon_f \qquad \text{(Female wage equation)}$$

(6)

where $\ln \overline{Y}$ denotes the geometric mean of earnings, $\overline{X}$ the vector of mean values of the regressors, $\hat{\beta}$ the vector of coefficients and ε is the error term. Within this framework, the gross differential in logarithmic term is given by

$$\begin{aligned}
\ln(G+1) &= \ln(\overline{Y}_m / \overline{Y}_f) \\
&= \ln(\overline{Y}_m / \overline{Y}_f) \\
&= \sum \hat{\beta}_m \overline{X}_m - \sum \hat{\beta}_f \overline{X}_f
\end{aligned}$$

(7)

The Oaxaca Decomposition simply observes that equation (7) can be expanded. In other words, the difference of the coefficients of the two earnings functions is taken as a priori evidence of discrimination. If, for the given

endowment, females were paid according to the male wage structure in the absence of discrimination, then the hypothetical female earning function would be given as

$$\ln \bar{Y}_f = \sum \hat{\beta}_m \bar{X}_f$$

(8)

Subtracting equation (8) from equation (7) we get

$$\ln \bar{Y}_m - \ln \bar{Y}_f = \sum \hat{\beta}_m (\bar{X}_m - \bar{X}_f) + \sum \bar{X}_f (\hat{\beta}_m - \hat{\beta}_f) \qquad (9)$$

Alternatively, the decomposition can also be done as

$$\ln \bar{Y}_m - \ln \bar{Y}_f = \sum \hat{\beta}_f (\bar{X}_m - \bar{X}_f) + \sum \bar{X}_m (\hat{\beta}_m - \hat{\beta}_f) \qquad (10)$$

In equations, (9) and (10) above, on the right hand side, the first term can be interpreted as endowment differences. The second term in these equations has been regarded in the literature as the discrimination component. This study basically focuses on the discrimination component. Studies use either of these alternative decomposition forms (equation 9 or 10) based on their assumptions about the wage structure that would prevail in the absence of discrimination.

Notes

[i] According to Becker (1971), discrimination coefficient is equal to the loss of utility experienced by the employer in hiring an additional woman worker.

[ii] According to wage discrimination theory, the employers will hire women workers only under the condition that the women are ready to work at lower wages compared to male. In this case, the difference between the male-female wage rates will be equal to the discrimination coefficient.

[iii] Discrimination accounting for over 100 percent of the gap means that if women had enjoyed the same returns to characteristics as men, then, on average, they would earn more than men because of their superior characteristics.

[iv] In reality, empirical evidence suggests that besides differences in human capital and discrimination by the employers, there are other reasons which become important to explain the prevalent lower wage received by the women workers specially in under developed countries. In the under developed economies the size of the informal sector is very large and has been growing rapidly. The wage in the informal sector is lower than the wage in the formal sector employment. On the other hand, the number of female in the informal sector job is greater than the formal sector jobs. Therefore, the gap between the formal and informal sector wage is another reason for gender related wage differential in the under developed countries. The formal sector uses capital intensive technologies while the informal sector employ labour intensive technologies. The skill requirements in these two sectors are different. While the formal sector requires skilled labours, the skill requirement of the informal sector is less. Therefore, the labour productivity in the formal sector is more

compared to the informal sector. Consequently, the wage differential between the formal and the informal sector employment exist. As the number of female workers in the informal sector is more compared to the formal sector, the difference in the number of workers in these two sectors explain the prevalent wage difference between male and female workers in the economy. Now the question will arise that why the more women are involved in the informal sector jobs. There are several reasons for that. First, there may be barriers to the entry in the formal sector. If there is no barrier to the entry in the formal sector, all the workers would have joined the formal sector and there might have been no difference in wages between formal and informal sectors. Secondly, there may be other reasons such as non-pecuniary benefits like flexible hours and forms of work that enable them to combine earning opportunities with household responsibilities (Madheswaran and Khasnobis, 2007) which compel women to work even at low wage rates.

[v] The study has taken into account both regular wage and casual workers for two reasons. Firstly, empirical evidence shows that the gender-based discrimination in pay is prevalent in both the spheres of urban labour force. Secondly, the present study wants to test whether the factors affecting wage differential in these two sectors of the urban labour force are same.

[vi] These were persons who worked in others' farm or non-farm enterprises (both household and non- household) and, in return, received salary or wages on a regular basis (i.e. not on the basis of daily or periodic renewal of work contract). This category included not only persons getting time wage but also persons receiving piece wage or salary and paid apprentices, both full time and part-time.

[vii] A person, who was casually engaged in others' farm or non-farm enterprises (both household and non-household) and, in return, received wages according to the terms of the daily or periodic work contract, was a casual wage labourer.

[viii] The male-female ratio in the dataset is 81:19 (Appendix 1).