

Review Paper

Gender Wage Gap in Indian Labour Market and Role of Government Policies: A Theoretical Perspective with an Empirical Overhaul

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ABSTRACT

The long-lasting practice of wage gap against female labour forces in the Indian labour market has been dealt with in this paper by the help of building up a general equilibrium framework along with capturing the issue by econometric analysis. It is the women labour force associated with informal sector as casual labour who suffer the most from this problem. The recent statistics even show a falling trend of female labour force participation in these sectors also. Our study traces through the causes behind such wage discrimination and the possible ways of coming out of it. We have found that investment in female human capital development actually helps women to forego present employment opportunities in low-skilled, low-wage sectors, rather encourages them to be more productive and efficient by means of more human capital and enter the labour market in future with no such wage discrimination, in practice. Such trends, observed in India actually glorifies the success of several Government Policies, such as “*Beti Bachao Beti Padhao*”, implemented for female human capital development. Falling trend of female labour force in informal economy is actually enabling them to enter the formal economy at par with their male counterparts. Our theoretical findings have been supported by our econometric analysis based on the application of Oaxaca-Blinder model and PLFS unit level data of 2021-22. It suggests the higher women are educated as well as skilled, the lower is wage gap they face and more equal is the pay-structure even in the informal economy. Hence, it is the success of government policies directed for development of human capital in women that we have started to observe. The study strongly recommends implementation of many more such women-centric programmes that would strengthen the women socially as well as ensure equality for them at the workplaces.

HIGHLIGHTS

- ① This paper focuses on the existing gender-based wage gap in Indian Labour market.
- ① This paper focuses on the falling trends of female labour force participation in India, especially in the unorganised; informal sector.
- ① The paper applies general equilibrium model and captures the issue of gender-based wage gap as well as falling women labour force participation ratio and brings out the importance and success of Governments’ policies that enables women to be more skilled and productive and allows them to forego present discriminated, low-wage employment.
- ① The paper applies unit level PLFS data by the help of famous Oaxaca-Blinder model and finds similar findings like the theoretical findings.
- ① The paper recommends implementation of such women-centric Government schemes to be continued in future to bring equality in Indian labour market.

Keywords: Gender Wage Gap, Oaxaca-Blinder Model, Female Human Capital Development, Government Policies, Unit level PLFS data

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Female labour force participation and corresponding gender discrimination in the form of wage gap has been an important aspect of research, especially in developing nations like India (Chatterjee and Chatterjee, 2022). Ensuring gender equality along with women empowerment have long been considered as a measuring rod for achieving fairness in the society, as the civilization has moved on. One cannot deny the fact the role of women in development of the nation is extremely essential, especially in backward developing nations but they are immensely vulnerable regarding education, health care, nutrition and with respect to several other social standards which lower their participation in the process of economic activities and development of the nation (Gao, 1997). Both Millennium development Goals (MDGs) and Sustainable Development Goals (SDGs) have framed out goals and policies to achieve gender-equity which demands achieving equity from all senses – accessing economic resources to enjoying economic freedom to taking part in economic activities to enjoying equal treatment at the workplace to getting equal respect in the family (Portes *et al.* 2019). Hence, both “Right to work” as well as “Right at work” both needs to be ensured in every sense. But we cannot deny that starting from family to workplaces – women are discriminated from several aspects (Duflo, 2012). In developing nations like India there is huge diversity in women labour force market than one can witness in men. Prime cause of such phenomena is the fact that in developing nations women do lack on several human capital-based aspects compared to their male counterparts and that prohibits their entrance in several economic activities (Chakraborty and Chakraborty, 2009). Again, this lack in human capital compels them to perform only few traditionally chosen activities which ends up in either over-representation of female labour force in few of the sectors and then there is under-representation in other sectors – either surplus or shortage of labour force is observed (Chatterjee, 2022; Hirway and Jose, 2011).¹ Often it is seen that women are entering the labour market

¹Of course, along with progress of education and other factors women are successfully breaking out of these traditional concepts and taking part in all forms of economic activities with utmost success but this percentage has not been far below than those in the developed nations and we cannot deny that still a lot needs to be done to ensure absolute equality of women in all spheres of economic and social participation.

at an early age due to poor financial condition of families, especially in developing nations, at the cost of education and engaging in those activities which demands good physical condition but the lack of human capital like education and health expands the gender disparity (Chatterjee, 2022; Ghosh, 2009). Such phenomena are very common in developing nations where due to poor human capital base women are even deprived of opportunities even from casual or daily-employment opportunities and whatever opportunities they get, they get lower wages than men workers (Das, 2006). Here arises the necessity of the public bodies and institutions to step in and frame out proper policies that can break this vicious cycle (Hirway, 2002). A thing that needs to be mentioned is that foregoing opportunities of developing proper human capital like education and health and entering labour market at the early age actually further widens gender gap, although it may slightly increase the female labour force participation at present but this is not a satisfactory indicator for development (Chatterjee and Chatterjee, 2022). Rather, getting enabled at present with proper human capital and entering the labour market with employability and earning opportunities actually signifies proper development and ensures proper equity (Sorsa *et al.* 2019).

Since globalization, India has been considerably doing well and has emerged as one of the dominant forces in global economy which is further expected to get strengthened. But, in reality, female labour force participation in several sectors has observed a sharp drop as suggested by various census data as well as labour force surveys (CENSUS data 2001, 2011; PLFS Report 2019, 2022).² Food and Agriculture Organization’s (FAO) estimate revealed that during 2004 and 2011 female labour force in India dropped by 7 percentage points – from 31% to 24% (FAO, 2011). These findings have put the people in the power before several questions as well as dilemma – whether these outcomes are because of conservatism of the Indian society or because of increase in higher education among women or whether because of lack of employability³ and as a consequence lack of employment opportunities for women are the things which need rigorous research (Sarkar *et al.* 2017). In developing, traditional

²Check Census data and PLFS reports for detailed information.

³Obviously because of lacking enough human capital.

societies like India with full of age-old rituals and habits in practice, it is well understood that there are several factors that play the important role in influencing the women labour force participation – it could be religion, social culture, location, family background, education, health and so on (Das 2006; Duflo 2012; Sorsa *et al.* 2015). Every factor plays its own role and they are equivalently important on their own, although it is a fact that, largely Indian society is of homogeneous in nature, especially the financially, socially backward segment (Kapos *et al.* 2014). It is a well-accepted fact Worldwide that in developing societies due to lack of proper accounting system in practice, the household and self-farm or own-business activities by women do not enter the accounting system⁴. Thus, properly estimating the “invisible work” of women is highly illusive as well as misleading in several cases (Hirway 2002; Hirway and Jose 2011; DeVault, 2014). Women work harder than men, on several cases, but they remain unpaid or even under paid. In first three ranked rice growing states in India, women work almost three times higher than their male counterparts but lack of accounting system as well as for being largely a part of household activity, these efforts by women remain unpaid and do not get included in the income (Desai and Thakkar, 2001). Similarly, women, in rural areas, generally remain associated with agricultural activities or casual activities that do not require high level of human capital. But mechanization of agriculture as well as use of capital-intensive techniques in several spheres of economic activities today has shrunk the employment opportunities for this large section of women labour force and have either converted them to unemployed or disguisedly employed labour force (Desai and Thakkar, 2001; Dubey and Olsen, 2017).⁵ There are several socio-economic, regional, demographic causes for lower women labour force ratio, despite good growth of GDP and education in the nation, as observed from survey of literature (Sinha, 2005). Such variation across the nation seeks for a detailed investigation of such findings. There is marital status that decides female participation, long-run

⁴Hence, the non-monetized activities remain outside the purview of National Accounting System although the size of such activities is considerably high as well as important in developing societies.

⁵For example, In Punjab, in the post Green Revolution era, women labour force participation in agricultural activities has sharply gone down.

analysis even identifies family or social prejudice as the factor that hinders women from entering the labour market (Panda 2003; Sarkar *et al.* 2017). Few studies have found that even growth phenomena of the nation decide the female labour force participation. Study by Goldin (1994) observed as the economy shifts from an agrarian-based one to that of a service-dominated one, an “U” shaped female labour force participation appears, that is, initially falls and then again goes up. So, it is the stage of growth that is pivotal in this respect although succeeding studies denied any existence of such curvature form of participation, rather it is observed that both in backward as well as in advanced areas an increase in the family income or income-earner actually diminishes the probability that a female member will be allowed to enter the labour market (Lahoti & Swaminathan, 2016). Purely from economic sense, one can disaggregate these facts of female labour force into demand and supply sides. The growth of the nation, the growth of GDP, improvement of labour market condition, reduction in discrimination against women – all these generate demand for female labour, whereas, socio-economic-demographic factors like education; family prejudice, etc. play the role of supply side factors (Sinha 2005; Chand & Srivastava, 2014). Cross sectional studies at the village level do reveal the fact that women work almost doubled than men, including household activities, but go unreported or underreported and the shortfall in percentage of participation is a combination of socio-cultural rituals and prejudice (Rodgers, 2012). The scenario is not so gloomy in the advanced urban areas like it is in backward parts. But even the people of backward areas are eager to grab opportunities and get themselves acquainted with good human capital-base and enter the labour market with good opportunities of being employed (Luke and Munshi, 2011). But the case of India has not followed that direction. PLFS report 2017-18 vividly shows that since 1993-94 female labour force has gone down from 32% to 18% and this entire 14% percentage point drop is driven by rural female labour force. Hence, location and backwardness of the socio-economic condition have been immensely crucial. Similar facts are revealed by Census data as well. Studying Census data of 1991 and 2011 itself reveals a sharp fall in female participation in labour

market.⁶ One significant aspect of such fall is that in backward parts of the state where people are generally belong to the category of casual labour or daily wage-earner, there these values have fallen more the state average (PLFS Report, 2019).⁷ Survey evidences indicate that the Labour Force Participation Rate (LFPR) (32.5% in 2020-21) and Worker Population Ratio (WPR) (31.4% in 2020-21) have not only been below desired levels but their growths have been sluggish as well. On the same note it is also evident from the PLFS (2021-22) data that there is a clear distinction between male and the female with regard to the labour force participation with the male participation being 56.9% in rural and 58.3% in urban blocks whereas the female participation is significantly low in both forms of blocks. The strikingly low share of women in the labour force has become a trend across the major Indian states. The PLFS reports suggest that the LFPR for women in Uttar Pradesh was only 22.6% in 2020-21. Similarly, in other major states like Bihar it is only 10.7% in 2020-21, in Gujarat it is 33.1% in 2020-21, in Haryana only 19.1% in 2020-21, in Punjab it is only 23.1% in 2020-21, in West Bengal it is 28.7% in 2020-21. All such data show the slack pace in female workforce participation while the male counterparts are significantly the dominant segment. Whatever increase or growth the female labour force has witnessed over the years, it has been mainly due to the growth in the service sector oriented urban employment opportunities. Opportunities for females in the rural agricultural sector or MSMEs or small firms of unorganized sector as the casual labor or daily wage earners have been falling sharply. All reports, both at the state level as well as at the national level, reveal the fact that in rural area female labour force has seen a sharp fall especially in the studying age groups of 15-21. Such facts reveal several facts, on one hand, and put ourselves in front of several questions on the other hand. The intuitive aspects that come out of these findings are that these could be because of good government policies about female education; health and other human capability developmental aspects such as '*Beti Bachao Beti Padhao*'; '*Kanyasree*',

'Ayushman'; '*Swasthya Sathi*'; '*Skill India*', '*Sarba Siksha Abhiyan*' etc. that have been getting implemented successfully and thus enabling young female with enough human capital to forego present employment opportunities which are low-skilled, low-wage in form and encourage them to enter the labour market in future with more higher employability and with more skills and wages on offer and therefore reducing the gender-wage gap. It may also be because of the fact that female labour, especially in the rural and semi-rural belts are generally associated with casual employment of low-wage and require low levels of skills to perform such task and along with the mechanization of almost all forms of production and absolute use of technology in every stage of production are actually closing the doors for them, that is, snatching away the employment opportunities and preventing them from entering the market and widening the gender-wage gap (Chatterjee and Chatterjee, 2022). If the first one is the cause then it can be viewed as a good outcome from the long-run developmental perspective of the nation but if the second one is the cause then serious policy-introspection is required and rapid reform is needed in the human capital-oriented schemes (Sorsa *et al.* 2017). Whatever may be the cause that need to be inquired. This paper looks to trace through those causes. Even if there are numerous works on gender discrimination but most of them are narrative. There is almost no study that looks to find the reason of such wage gap or gender discrimination at work places by incorporating theoretical set up as well as using real world data to investigate. This lacuna motivates us to take up this study and fill the research gap. Hence, this study has two aspects – one is a theoretical model of general equilibrium set up that looks to set up different labour market scenarios for both male and female labour forces both in the presence and absence of wage discrimination in practice and examines how effective can governments' policies become in influencing the decision of women labour force to enter the labour market at present or not. Second part of the study is about testing the propositions of the findings of the theoretical build-up by the help of secondary; real-world database by using econometric analysis. This sort of analysis on the entire India is actually missing and this has been our main motivation behind the study. Rest of the study is developed in

⁶In West Bengal it has fallen from around 21% to below 18%.

⁷PLFS 2019 reveals that in backward parts like Purulia female labour force participation gone down from 39.4% to below 34%, In Bankura it has gone down from above 33% to below 25% and so on over the period of eight years since 2011.

the following manner. Section 2 describes the general equilibrium theoretical model followed by data and methodology used in the study in section 3. Section 4 analyses the findings of the econometric study and finally section 5 concludes with proper policy recommendations.

The Theoretical Perspective

We begin our analysis by assuming that there are two sectors present in the economy. Both sectors use both Male (M) and Female (F) labour forces as their inputs but in one of these two sectors there is practice of gender and wage-discrimination against women or female but in another sector, there is no such discrimination in place, that is, it treats both male and female at par and pays wage accordingly. Let us suppose, Sector I uses both male (M) and female (F) but it practices wage-discrimination, that is, female is underpaid and thus discriminated against women for performing the same work task.⁸ The output produced by sector I is therefore symbolized as X_I . On the other hand, there is sector D that produces its output symbolized as X_D and it uses both male as well as female labour forces at equal wage without existence of any such gender discrimination in the working environment.⁹ Since sector I practices wage-discrimination, the wage offered by sector I to the female labour force denoted as W_F is lower than that offered to the male labour force W_M . Hence, using notation, one can write in sector I, W_F is less than W_M ($W_F < W_M$). But in sector D, since there is no such discrimination, we have W_F is equal to W_M , wages offered to both male and female workforces are equal ($W_F = W_M$).

We further assume that level of human capital in the forms of education and nutrition or health condition decide the level of skill or productivity in female workers. Hence, we capture such skill or efficiency by μ .¹⁰

⁸Apart from discrimination in wages, the word 'discrimination' also stands for all other forms of discrimination against women in the working arena of sector I.

⁹For the sake of simplicity, readers can even assume sector I as the casual or informal sector with all forms of wage-discrimination against Women and sector D as the developed one or formal sector without any such forms of gender biasness in favour of male labour force.

¹⁰This is a very realistic assumption in the sense that women do require good health condition to take part in laborious agricultural or activities performed by casual labour in Industries or in other segments of informal sectors. They also require good educational base to take part in modern advanced sectors including urban formal sectors. Hence,

$$\text{Here we have, } a_{FI}(\mu_1) = W_F \quad \dots(1)$$

$$\text{and, } a_{MI}(\mu_2) = W_M \quad \dots(2)$$

Here we assume that $W_M > W_F$ as –

$$\mu_2 > \mu_1 \quad \dots(3)$$

Therefore, the product market equilibrium condition for sector I can be written as –

$$\begin{aligned} a_{FI}(\mu_1).W_F + a_{MI}(\mu_2).W_M \\ = P_I = P_I^\# = 1 \end{aligned} \quad \dots(4)$$

In equation # stands for equilibrium value. Price of the product produced by sector I has been assumed to be numeraire and set equal to one.

In a similar fashion, the product market equilibrium condition in sector D can be written as –

$$\begin{aligned} a_{FD}(\mu_2).W_F + a_{MD}(\mu_2).W_M \\ = W_M = W_M^\# = P_D \end{aligned} \quad \dots(5)$$

Equation (5) can be written in this manner simply because if we advance over equation (1), we can get the factor return in sector D for the female labour force which may be presented as follows –

$$a_{FD}(\mu_2) = a_{MD}(\mu_2) = W_M \quad \dots(6)$$

Now, if government is investing in human capital improvement exclusively for female or helping them with cash transfer which helps them to build their human capital base, then it increases the efficiency or productivity of the female labour force which can be written as follows¹¹ –

$$a_{FI}^{NEW}(\mu^\#) = W^\# = W_M + \delta \quad \dots(7)$$

It is important to mention that female labour force associated with sector I need those financial assistance than those females who are associated with sector D. Hence, it is the discriminated segment of the labour force which deserves as well as

both education and health can be considered as the two most important human capitals for women.

¹¹Examples of such investment programme in female human capital base have been already mentioned in section I.

require the assistance but as a policy Government may decide to help every woman, irrespective of the presence of discrimination against them at workplaces.

(A) Factor Market

One has to note that μ is the constant financial assistance from the government that is improving the human capital-base of the female labour force and enabling them to increase their efficiency and capability at the labour market and on many cases such capability exceeds that of males. Hence, if this assistance (δ) continues over time and grows as well, we can certainly say $\mu^\# \geq \mu_2 > \mu_1$ or it enhances the overall equilibrium productivity in the labour force and certainly that of females. If $\delta > 0$, that is, if such assistance continues, women at present may forego low-wage, low-skilled work at present and prefer to develop their human-capital base (in the form of education mainly) and tend to prefer entering labour market in future with more wage-earning opportunities – preferring a better future over present employment and avoid facing wage-discrimination at workplaces. Female workers may also remain undecided or indifferent between choosing low-wage employment at present or no employment at present if $\delta = 0$, that is, if $\mu^\# = \mu_2$. Now, if such social schemes by Governments continues to grow and grows in such a manner so that it surpasses the growth of male wages in the sector I, that is, if we have a scenario such that $\hat{\delta} > \hat{W}_M$ changes in financial assistance to the females is higher than the changes in Male wages, then we can certainly say that females are going to enter the labour market at present and get engaged with low-wage, low-skilled employment and get to face wage – discrimination. They would certainly like to acquire more human capital and enter the labour market in future where they would not have to face any discrimination. Such has been the case in India. Hence, it is a success of several social schemes that has significantly and continuously reduced the female employment in those sectors where there is existence of wage discrimination against women. Hence, it is a form of social reform by means of schemes like “Beti Bachao Beti Padhao”, “Ayushman”, “Ujjwala”, “kanyasree”, etc. which has resulted in human capital development and women labour force at the lower-age structure

has been falling. It implies women are choosing education or developing human capital at present at the cost of present employment in the form of casual or informal labour. They are preferring more human capital to enter the future labour market with no wage – discrimination against them. These socio-economic revolutionary measures may have reduced the present female employment in the unorganized, informal sectors at present but they have certainly enabled female labour force to enter the organized, formal labour market with more equality with males.¹²

Regarding factor market scenarios and interactions, we make the following specifications to describe the labour market equilibrium of both male and female labour forces by the help of following equations.

For female labour forces, the labour market equilibrium conditions can be written as –

$$a_{FI}X_I + a_{FD}X_D = F(\mu_1, \mu_2) \quad \dots(8)$$

For male labour forces, the labour market equilibrium conditions can be written as -

$$a_{MI}X_I + a_{MD}X_D = M(\mu_2) \quad \dots(9)$$

Once the social security policies in the form of financial assistance for females gets successfully implemented for a longer period and the growth of such assistance outweighs the growth of male wages, that is, $\hat{\delta} > \hat{W}_M$, productivity; efficiency or skill of female labour force certainly goes up from μ_1 to $\mu^\#$. This generates a new labour market equilibrium condition for the female labour force which is presented below:

$$a_{FI}X_I + a_{FD}X_D = F^{NEW}[(\mu^\#, \mu_2) / \mu^\# > \mu_2] \quad \dots(10)$$

Using equation (8) in equation (10) we get –

$$F(\mu_1, \mu_2) > F^{NEW}[(\mu^\#, \mu_2) / \mu^\# > \mu_2] \quad \dots(11)$$

Equation (10) reveals the fact that overall women employment or female labour force participation,

¹²This is the reason why female employment in the age group of 15-19 has fallen. It has fallen in the informal; unorganized rural sector. But certainly, increased in the organized urban sector where women are not discriminated in wages.

at present, falls if the two conditions are satisfied. Firstly, if the inequality $\mu^{\#} > \mu_2 > \mu_1$ holds and secondly, if the first condition holds in response to the policy $\hat{\delta} > 0$.

Now, such policies and female human capital development at present have serious policy implications regarding growth of different production sectors. If women choose to develop human capital at present and forego present employment opportunities in sector I with wage discrimination, then it would certainly reduce labour supply to sector I as well as reduce its output which is female-labour intensive in structure.¹³ It implies sector that practices gender discrimination in the form of wage discrimination will contract following $\hat{\delta} > 0$. It also implies that male workers, in the hope of employment protection, would prefer shifting over to sector D, provided they have the required efficiency. It gives us the important implication that as a measure of human capital development, sector with wage discrimination will shrink and probably vanish in future but the sector with no such discrimination will flourish and grow.¹⁴ Such a social transformation actually stands for sustainable development for women and this we have started to observe this trend in Indian labour market scenarios also which itself brings out the success of Governments' schemes implemented for human capital development for women.

Data and Methodology

For the present literature the unit-level quarterly survey data, PLFS 2021-22 has been used. From the PLFS data key variables have been considered for this study. The PLFS (2021-22) data has been collected over 12,733 First Stage Units (FSUs) that consists of 6,988 rural units and 5,745 urban blocks. The data considers 1,01,782 households and 4,28,525 persons. This study primarily focuses upon indicators relating to persons. The PLFS provides with the relevant data for sex, wage earnings, general education, technical education, work experience, casual wage workers which enable the study to proceed further. The data is generated

¹³Sector I that can practice wage discrimination will easily choose more female labour than male labour for cost advantage. Hence, it is easily understood that production process in sector I would be female labour intensive.

¹⁴Here, that sector is sector D.

having several categorical classifications of the said variables which covers all the states of India which contributes immensely to the present study. The study deliberately considers the dummy variables for the said determinants like sex, general education, technical education, work experience and type of workers. The person level sample used for the current literature is 24,560 of which 19,490 are male and 5,070 are female individuals after omitting the data for individuals having zero wage.

Considering the framework of wage equations for two distinct groups (male and female) in log-linear form (Mincer, 1974) we have the following estimated OLS structure.

For male (m) wage-earners,

$$\ln Y_m = \alpha_m + \sum \hat{\beta}_m X_m + \varepsilon_m \quad \dots(12)$$

For female (f) wage-earners,

$$\ln Y_f = \alpha_f + \sum \hat{\beta}_f X_f + \varepsilon_f \quad \dots(13)$$

where, Y_m and Y_f represent log of wages for male and female individuals respectively, X_m and X_f are vectors of explanatory variables, such as, marital status, years of general education, technical education and gender dummy is treated as a reference, β_m and β_f are the respective vectors for coefficients and ε_m and ε_f are the respective error terms. The modeled wage equation by Mincer provides with influence of potential determinants upon the natural logarithm of wages under the above-mentioned labour market conditions.

Further, we considered the Oaxaca-Blinder Decomposition model of wage discrimination (Oaxaca, 1973; Blinder, 1973) to analyse the factors causing the wage gap on the basis of gender among the wage earners. The model follows a 'threefold' decomposition, that is, the response variable is categorized into endowment effect, differences in coefficients and interaction term simultaneously for two distinct groups of male and female.

The outcome difference or the 'threefold' decomposition model relevant for this study is,

$$O = \text{Endowment Effect (E)} + \text{Differences in coefficients (C)} + \text{Interaction term (I)} \quad \dots(14)$$

where the first element,

$$E = [E(X_m) - E(X_f)]' \beta_f \quad \dots(15)$$

which implies the endowment effect, that is, the group differences in the explanatory variables.

The second element,

$$C = E(X_f)' (\beta_m - \beta_f) \quad \dots(16)$$

which signifies the differences in coefficients of the explanatory variables considered.

The third element,

$$I = [E(X_m) - E(X_f)]' (\beta_m - \beta_f) \quad \dots(17)$$

which measures the interaction term implying that differences in endowments and coefficients are accounted in a simultaneous manner.

Further, from equation (3) we can now analogously derive equation (7) that considers the outcome difference (O) with respect to all the elements E, C and I

$$O = [E(X_m) - E(X_f)]' \beta_f + E(X_f)' (\beta_m - \beta_f) + [E(X_m) - E(X_f)]' (\beta_m - \beta_f) \quad \dots(18)$$

Gender Identity and Wage Gap

In this section the detailed explanation of the econometric analysis has been put forward. To support the study relating to the diminishing participation of women workforce in the Indian labour market, the paper ascertains the same primarily by the descriptive statistics. Further the study introduces the results of the Oaxaca-Blinder Decomposition that signifies the existing wage gap and factors behind the inequality. The study reveals for a fact that gender plays a crucial role in the labour market since the contributing endowments received by the two groups (namely, male and female) are significantly different from each other.

(A) Empirical Results

The descriptive statistics indicates the predicted outcome of mean logarithmic wages along with minimum wages (logarithmic) obtained by the

two distinct groups of male and female. Table 1 illustrates the primary observations from the analysis which evidently shows that the labour force participation is significantly high among the male with the male sample being 19,490 while the female sample is conspicuously low with a sample of 5,070. The results indicate that the mean of log wages for male is 5.99 whereas the mean of log wages for female is 5.50 which yields a wage gap of 0.48. The table also indicates the significant difference in the minimum wages of the two groups with the male receiving a minimum (log) wage of 3.91 and the female 2.70. The study emphasizes on this very inequality and further proceeds on to investigate the underlying factors fostering this disparity among the two groups. To serve this purpose the Oaxaca-Blinder Decomposition results have been illustrated in Table 2(a) and Table 2(b).

Table 1: Descriptive statistics of the labour force

Male					Female				
Mean	Min	Max	SD	N	Mean	Min	Max	SD	N
5.99	3.91	7.31	.33	19,490	5.50	2.70	7.33	.39	5,070

Source: Authors' estimation on the basis of unit-level data from PLFS 2021-22.

This section discusses the practice of wage discrimination in the light of OLS regression results which corroborate that marital status, general education levels at below primary, middle school, secondary, higher secondary, graduate, level of technical education, experience and job status have significant role in generating higher wage for the male whereas level of general education at postgraduate level is insignificant. On the contrary, the results for the female counterparts show varying results, that is, it shows marital status, education levels from higher secondary onwards, experience of work and technology and job status have significant impact and level of general education below higher secondary are insignificant in case of the female. For a cross-section study our model fits very well as revealed from the high values of adjusted R -square.

The decomposition outcome observed in Table 2(b) reports the group-specific mean wages along with the significant wage gap being 0.48. This panel evidently reflects the mean appreciation in the

wages of the female if the female group had the specific endowments that of the male, that is the endowment effect. The second element specifies the change in wages of the female once the coefficients of the male group are considered.

Table 2(a): Estimated OLS regression results from Oaxaca-Blinder decomposition

	Male	Female
Intercept	6.01***	5.73***
D_Marital.Status	0.32***	-0.05***
D_Below.Primary	0.37***	0.03
D_Primary	0.67***	0.27
D_Middle.School	0.12***	0.00
D_Secondary	0.13***	0.01
D_Higher.Secondary	0.08***	-0.10***
D_Graduate	0.73***	0.10*
D_Postgraduate	0.63	0.14**
D_Experience	0.49**	-0.01*
D_Technical.Education	-0.24***	-0.11**
D_Casual.Wage.Labour	-0.26***	-0.09***
Adj R-squared	0.68	0.64
No. of observations	19,490	5,070

Note: *** signifies significance at 1%, ** signifies significance at 5%, * signifies significance at 10% and the rest are insignificant.

Source: Authors' estimation on the basis of unit-level data from PLFS 2021-22.

Lastly, the interaction term delivers the simultaneous impact of differences in endowments as well as coefficients. It can be observed from Table 2(b) that a perceptible significance of the results is for general education at higher secondary, graduate and postgraduate levels along with technical education, experience and job status. This evidently implies that the women workforce is getting better-off once with the completion of their education at the specific levels along with technical education and experience in the labour market. The decomposition explains the male advantage in terms of receiving the wage higher than the women workforce along with the factors fostering this inequality. It is also noteworthy to mention that this low female participation and the wage gap in the labour market can be due to the women valuing the future opportunities more over the casual wage works, mostly in rural areas, which is followed by a sacrifice in the face on present job market participation.

Table 2(b): Oaxaca-Blinder decomposition of wage gap

	Endowments (E)	Coefficients (C)	Interaction (I)
D_Marital.Status	0.00**	0.06**	0.02**
D_Below.Primary	-0.35*	0.08	-0.03
D_Primary	0.44	0.00	0.00
D_Middle.School	0.69	0.01	0.17*
D_Secondary	0.01	0.06	0.08
D_Higher.Secondary	-0.51***	0.40***	0.09**
D_Graduate	0.16**	-0.88***	-0.47**
D_Postgraduate	0.06**	0.67**	0.00*
D_Experience	-0.08**	-0.13*	0.00**
D_Technical.Education	0.00***	-0.01*	0.09*
D_Casual.Wage.Labour	0.04**	0.28***	0.03***
Differential			
Prediction_1	5.99***		
Prediction_2	5.50***		
Difference	0.48***		

Note: *** signifies significance at 1%, ** signifies significance at 5%, * signifies significance at 10% and the rest are insignificant; the model is considered with the gender dummy being the reference where, $D_{female} = 0$ signifies male and $D_{female} = 1$ signifies female respondents.

Source: Authors' estimation on the basis of unit-level data from PLFS 2021-22.

The wage gap induced by the specific underlying determinants contributes in explaining the declining trend in labour force participation of the women. The empirical evidences support the theoretical framework of the present study. It further puts up the endowment effect which itself explains a major percentage of the wage gap along with coefficient effect and the interaction term in explaining the wage inequality among male and female. The very foundation of the empirics relies upon the fact that human capital investment is not quite efficient in practice. Hence the results imply similar actuality while explaining the group-specific wage gap.

CONCLUSION

This study is one of those studies that not only searches answers to several unsolved issues of the Indian labour market but also looks to suggest future ways of sustainable development. Here both

theoretical as well as empirical approaches have been studied. Gender discrimination in the form of gender-wage gap at workplaces have been a long problem in the Indian labour market and in labour market of almost all developing nations as well. This backward attitude is even more acute in the informal market in which workers are mainly of the 'casual labour' category. It is also an undeniable fact that on several grounds, women do lack in efficiency or productivity compared to men labour forces. Such disadvantageous position over the years have forced the female labour force to face wage discrimination. Here arises the role of Government policies to break this backwardness. We have considered a general equilibrium model of two sectors and have shown that if government invests in development of human capital of women in the form of investment in education and health, then women would prefer to give up present employment opportunities of low wages and face wage gap. Such a phenomenon may reduce the women labour force at present, especially in the informal labour market, and acquire more human capital and enter the labour market at a future date and not face wage gap against male. We have tested the findings of our theoretical model by the help of Econometric application of Oaxaca – Blinder model. Based on the PLFS data of 2021-22, we have conducted our study. Our total sample size is above 24000 but it reflects the actual scenario of Indian Labour market. Out of the total sample size, only above 5000 are women – which itself describes the falling trend of women labour force. Our econometric findings are very much reflecting our theoretical analysis. Our least square estimates as well as decomposition analysis reveal that the higher the level of female education, higher their base of technical-knowledge, experience, etc., higher is their lower is the difference in wage with male labour force. Such human capital base also enables women to come out of the wage-gap problem even in the market of casual labour. The role of the government becomes immensely important, in the sense that investment in women education and other human capital development would certainly enable women to become more skillful, more productive and takes them away from the curse of gender-wage disparity, which is positive for sustainable development, even if it may reduce the female employment at present.

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