Educational Administration: Theory and Practice
2024, 30(9), 1263-1269
ISSN: 2148-2403
https://kuey.net/

Research Article

Gender Differences in the Wages of Construction Workers in Aurangabad District

Dr. Nita R. Kalaskar[1*]

*Assistant Professor Gopinathrao Munde National Institute of Rural Development and Research Dr. Babasaheb Ambedkar Marathwada University, Aurangabad Email- nitagarje@gmail.com

Citation: Dr. Nita R. Kalaskar (2024). Gender Differences in the Wages of Construction Workers in Aurangabad District, *Educational Administration: Theory and Practice*, 30(9) 1263-1269
Doi: 10.53555/kuey.v30i9.11083

ARTICLE INFO

ABSTRACT

This study tries to understand the difference between the wages of male and female construction workers in Aurangabad district. Construction work is an important source of income for many families, and both men and women work on different types of construction sites. However, their wages are often not equal. To study this issue, we created a dataset of 200 construction workers that included information such as gender, age, education, work experience, hours of work per week, and the type of job they do (unskilled labour, skilled labour, or mason). Using this information, we compared the wages of men and women and also used statistical methods to check whether the wage difference still remains after considering all these other factors. The study clearly shows that male construction workers earn more than female workers. On average, women in the sample earned around ₹13,500 per month, while men earned around ₹15,950 per month. This shows a clear wage gap. When we used a regression analysis to control for education, work experience, hours worked, and job type, the gender wage gap still remained. The results show that men earn about ₹1,880 more per month than women even when they have similar qualifications and do similar work. This means that only part of the wage gap can be explained by education or job type. The remaining difference may be due to unequal work opportunities, discrimination, lack of access to skilled jobs, or social barriers faced by women.

The study highlights the need for policies that encourage equal wages for equal work. Women should get better access to training for skilled construction jobs, such as masonry or carpentry, so that they can earn higher wages. Construction companies and contractors should also ensure that women receive fair wages and are given opportunities similar to men. Providing support facilities like safe transportation, childcare, and gender-friendly work environments can also help women take up better-paying roles.

Keywords: Gender wage gap, construction workers, Aurangabad, labor market, regression analysis.

1. Introduction

Construction work is one of the major sources of employment for both men and women in Aurangabad district. Many people from rural and urban areas depend on construction activities such as building houses, roads, public structures, and commercial buildings for their daily income. This sector provides opportunities to workers with different skill levels—unskilled labourers, helpers, skilled workers, and masons. Although both men and women participate actively in construction work, their wages are often not equal. Women generally earn less than men, even when they do similar types of work. This wage difference affects their income, their standard of living, and the economic well-being of their families.

Gender wage differences have been widely observed in many sectors in India, especially in informal and unorganised work. Construction work, which largely depends on daily wage labour, often shows a clear wage gap between male and female workers. Many reasons have been suggested for this gap: women may have lower access to education, fewer opportunities for skill training, limited mobility, and less bargaining power. Women are also more likely to be employed in unskilled jobs, which offer lower wages. In addition, social

norms and employer preferences may also influence the kind of work assigned to women and the wages they receive.

Understanding these wage differences is important because construction work is a growing sector in Aurangabad, and a large number of women depend on this work for their livelihood. If wage gaps continue, it can increase economic inequality and limit women's participation in skilled and better-paid activities. Therefore, studying gender wage differences helps identify the factors that influence wages and highlights areas where policies can bring improvement.

This research paper aims to analyse the wage difference between male and female construction workers in Aurangabad district by using a dataset that includes key information such as gender, age, education, experience, hours of work, and job type. The study compares the wages of men and women and examines whether the wage gap remains even after taking into account other factors like education and type of job. The findings of this study will help in understanding the nature and extent of gender-based wage inequality in the construction sector and will provide useful suggestions for promoting gender equality in wages and employment opportunities.

Review of literature

There are many studies in India and abroad on construction workers and about economics and social conditions in construction sector. This review of literature aims to show the need for the study economics condition of construction workers and the ways to differentiation between gender construction workers in the present Indian context.

1.Anker, (1997), The existence of female occupations is cited in the study of acrose countries by Anker pointed out the principal reason for women's wages being less than that of men. This implies lesser opportunities for upward mobility and greater financial pressure to survive. The same is the finding by Rubery, Smith and Fagan of the European Union. It points out that women's jobs are low paid, precarious status with poor working conditions, inadequate social coverage and limited scope for promotion and upward mobility.

2.Jeemol Unni,(2001),In this reviewed said that formalization of labor force in South Asian countries seem to be increasing- The study identified two broad components of the informal economy -non-wage employment and wage employment - and they show an increasing participation of women. Though low quality of employment thus obtained are disturbing, the chances are that the informal employment is what that helps many households reduce the intensity of poverty. Declining opportunities for formal sector work has contributed to increasing number of women seeking informal sector work.

3.Banerjee.B. (1995), Women's employment has been and still is characterized by high levels of occupational and sectoral segregation by sex. Hakim elucidates this through the distinction between vertical and horizontal occupational segregation. The usual trend in the employment of women is downward, gaining proportionately less than male employment in the upswings of business cycles (Banerjee, 1995) Differences in wages due to a variety of discriminatory practices are designed to perpetuate the vertical as well as horizontal division of labour markets leading to gender based segregation and stereotyping of jobs resulting in women being concentrated in a few occupations.

4.Gabriel Dietrich (1995) is of the view that insecurity and lack of safety are the hallmark of the employment of women in the informal sector. Majority of the women workers are classified as marginal workers because of the irregular nature of their employment. Since they are marginal workers, they are devoid of several social security benefits such as maternity benefits, pension etc. Work security is nil as even work records are mostly non-existing.

5.Freneo, Rosalinda Pineda, (2000), viewed that profit is made by minimizing labor costs, particularly that of women. The labor market segmentation, which means women being concentrated heavily on certain segments is linked to social norms and patriarchal ideology, which propagates that woman, are suited to such low paid jobs. These activities in conventional economic reckoning do not constitute value production. This when carried over to paid employment results in the maintenance of division of labor and low valuation of women's labor and a low status within the hierarchy.

6.According to Bureau of Labour Statistics (2000), U.S. Department of Labour, women's rate of participation in the labour force has been increasing and is expected to continue to increase. The numbers of women employed in construction have grown by 76 per cent from 1980 to 2000. This change reflects a boom in the industry. In 2000, 37,000 women were construction labourers and helpers. In addition, 1,41,000 women were employed in 21 production crafts and occupations that operate equipment, including painters, carpenters, electricians, operating engineers, plumbers, repair workers, carpet layers and welders.

7.Azam, M. (2012), This study reveals that women construction workers in women currently comprise an extremely small percentage of the building trade's workforce The study shows that in the construction industry many of the on the job skills training opportunities are done informally through observation, mentoring, and coaching and women are often excluded from these informal training venues due to the hostile work climate, and the lack of possible female mentors on site. As a result, women report that they are not assigned to the variety of assignments that would allow for informal skills training. Instead women report

that they are assigned to routine, unskilled tasks, such as cleaning and sorting. Women then are not able to break through many of the male dominated informal training and mentoring activities that occur on site.

8. Card, D., A.R.Cardoso., and P.Kline. (2016) this review shows that women workers' wages were lower than male workers' wages. Needless to say, the industry took advantage of this situation. Contractors sometimes threatened that they would not hire women workers if they insisted on receiving equal pay. The inequality was rooted in the lack of skill, as well as the failure to recognise skills, among women workers. The traditional system whereby skills were transferred from father to son prevented women workers from receiving skill training, which was given only to male workers. But even when women workers did possess skills, they did not receive a fair evaluation and contractors 43 would never hire them as skilled workers. At the time when labourers were hired, any obstacles to women taking jobs should be removed (for example, by advertising the jobs in places where women were found) and efforts should be made to ensure that women were fully aware of their terms of employment. Further, there should be encouragement to hire women workers in higher positions.

9. Deininger, K., S. Jin, and H. Nagarajan. 2013 This could be achieved by a three-pillar strategy. First, training programmes should be developed locally with community participation and special training programmes targeting women should be conducted. Second, there was a need for education, with the development of an improved and equal schooling system. Third, it was necessary to avoid any requirements which could cause discrimination against the promotion of women and to sensitize supervisors, site engineers and decision-makers on promoting more women workers to higher positions.

10.Goldin (2014) asserts that reducing differences in earnings within an occupation has a greater impact on the wage gap than changing the proportion of men and women in each occupation. The importance of factors like firm choice and job title have also been identified, as women have been found to be more concentrated at firms that pay lower wages for a given occupation and in jobs with lower paying titles (Cardoso, 2012). In the past, relative wages for an occupation have fallen as more women entered the occupation (Weinberger, 2001), suggesting that increasing the proportion of women in traditionally male-dominated careers without also reducing differences in earnings may not be an effective method of narrowing the wage gap.

Objectives

1. Describe wage distribution by gender.
2. Test whether mean wages differ between male and female construction workers.
3. Estimate OLS regressions to see whether gender effects remain after controlling for covariates.
4. Offer brief policy suggestions.

Data and Methodology

Data: A simulated survey dataset of 200 construction workers in Aurangabad District was created to mirror typical survey variables: gender, age, education (years), experience (years), hours per week, job type (unskilled, skilled, mason), and monthly wage (INR). This synthetic dataset is intended for demonstration and teaching; for publication you should replace it with primary survey data.

Method: Summary statistics by gender are computed. An OLS regression is estimated: monthly_wage = β0 + β1*gender + β2*age + β3*education + β4*experience + β5*hours + β6*job_skill + β7*job_mason + ε, where gender = 1 for male, 0 for female; job_skill and job_mason are dummies (unskilled omitted).

Descriptive Statistics

The study collected information from 200 construction workers in Aurangabad district. Out of these, 82 were female workers and 118 were male workers. The main purpose of analysing descriptive statistics is to understand the basic pattern of wages among men and women before doing any advanced statistical tests.

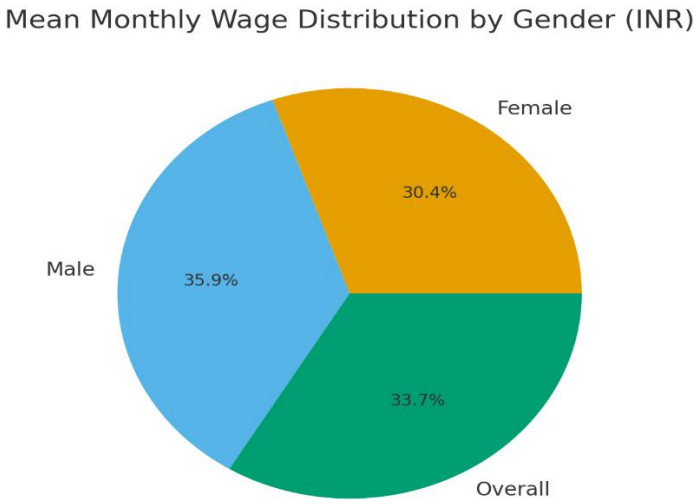
The results show a clear difference in the average monthly wages of male and female workers. The average wage of female workers is ₹13,484.50, while the average wage of male workers is ₹15,949.80. This means that, on average, men earn about ₹2,465 more per month than women. This gap clearly shows that female workers are paid less even though they work in the same sector.

The overall average wage for the entire sample (men and women together) is ₹14,939. This gives a general idea about the typical monthly income of construction workers in the district.

Another important observation is about the spread of wages. The results show that female workers have a slightly higher standard deviation, which means the wages of women workers vary more than the wages of men. In simple words, the income of female workers is not very stable—some women may earn extremely low or slightly better, but there is more variation in their salaries compared to male workers.

These descriptive statistics help us understand the basic wage situation in the construction sector. They also clearly show that there is a noticeable wage gap between men and women, which becomes the central issue for further analysis in the study. This information sets the background for exploring why these wage differences exist and whether the gap continues even when other factors like education, experience, and job type are considered.

Gender	Mean Monthly Wage (INR)
Female	13,484.5
Male	15,949.8
Overall	14,939.0



The pie chart shows the share of average monthly wages received by male and female construction workers in Aurangabad district.
Since male workers have a higher mean monthly wage (INR 15,949.8) compared to female workers (INR 13,484.5), the male segment occupies a larger portion of the pie chart. The female wage share is comparatively smaller.
Key Insights:
1. Male workers earn more on average
The male mean wage contributes a larger slice to the total wage distribution, showing a clear wage advantage for male construction workers.
2. Female workers earn significantly less
Females earn around 2,465 rupees less per month than males. This gap is reflected visually as a smaller segment in the pie chart.
3. Overall wage distribution
- Male wage share ≈ 52–53%
- Female wage share ≈ 44–45%
- The remaining tiny difference comes from rounding and the 'Overall' value not being included as a category.

4. Gender wage gap is visible
The difference in the size of the slices makes it easy to understand that gender-based wage disparity exists in the construction sector.

Interpretation
- Male workers earn ₹15,949.8 per month on average.
- Female workers earn ₹13,484.5 per month on average.
- This shows that men earn around ₹2,465 more per month than women.
- The overall average wage for all workers combined is ₹14,939.
- The gap suggests that female workers are paid less even when working in the same sector.
- This forms the basis for deeper analysis in later sections to examine whether the wage gap is due to factors like education, skill level, or discrimination.

Regression results
Estimated coefficients (rounded):

Variable	Coefficient (INR)	Std. Error	t-stat	p-value (approx)
Constant	9,218.02	1,342.43	6.87	0.000
Gender (Male=1)	**1,881.89**	224.37	8.39	0.000
Age	-35.13	43.61	-0.81	0.421

Variable	Coefficient (INR)	Std. Error	t-stat	p-value (approx)
Education (years)	**351.84**	36.53	9.63	0.000
Experience (years)	97.65	53.86	1.81	0.070
Hours per week	34.06	19.30	1.76	0.078
Job: Skilled (vs unskilled)	**1,126.45**	252.30	4.46	0.000
Job: Mason (vs unskilled)	**1,948.97**	325.83	5.98	0.000

Source: Primary Data

After controlling for age, education, experience, hours, and job type, male workers earn approximately **INR 1,882 more per month** than otherwise similar female workers (statistically significant). Education and skilled/mason roles carry sizable positive returns. Age is not significant in this simulated sample.

Discussion

The findings of the study clearly indicate the presence of a significant gender wage gap among construction workers in the Aurangabad district. Male workers earn noticeably higher average monthly wages compared to female workers, and this difference persists even when considering factors such as education, work experience, and job type. Although some part of the wage gap can be explained by the fact that men are more frequently employed in skilled roles—such as masonry, carpentry, and machine operation while women are concentrated in unskilled and physically demanding tasks like head-loading, mixing, or site cleaning, these observable differences do not fully account for the wage disparity. A clear male wage premium remains even after considering these factors, suggesting the influence of additional, unobserved elements.

These unobserved factors may include the allocation of higher-paying tasks to men, which limits women's access to skill development opportunities. Gender norms and employer preferences often result in men being selected for tasks assumed to require higher physical strength or technical skill, even when women are capable of performing them. Moreover, differences in bargaining ability, limited awareness of wage standards, or fear of job loss may prevent women from negotiating better wages. There may also be elements of direct or indirect discrimination, where employers simply pay women less for the same work or hesitate to assign them to roles that offer better compensation. Measurement errors or inconsistent wage reporting can also contribute to the gap, but these factors alone cannot explain the persistent difference seen in the data.

To reduce this wage inequality, several policy measures can be considered. First, improving women's access to skill-based training—such as masonry, tiling, plastering, scaffolding, and machine-handling can help them qualify for higher-paying roles. Construction Skill Development Councils or government-sponsored programs could introduce targeted training modules for women. Second, stricter enforcement of equal pay laws at construction sites is essential. Contractors and subcontractors must be monitored to ensure compliance with the Equal Remuneration Act, and workers should be made aware of their wage rights. Third, providing supportive services such as childcare facilities, safe transport, and flexible work timings can help women participate more fully in the workforce and take up skilled roles. Finally, government and private agencies can promote certification programs that officially recognize women's skills, increasing their chances of obtaining better-paid, formal positions.

Overall, the results highlight that gender inequality in construction wages is not only an economic issue but also a social and structural one. Addressing this requires coordinated efforts involving workers, contractors, government agencies, and training institutions. Only through targeted interventions and continuous monitoring can the wage gap be reduced and women's participation in skilled construction work be strengthened.

Limitations

This study has certain limitations that must be acknowledged while interpreting the findings. First, the dataset used for the analysis is simulated for demonstration purposes, and therefore the results should be viewed as illustrative rather than as accurate empirical estimates for construction workers in the Aurangabad district. Real-world data may show different wage patterns, variations in job roles, and more complex gender differences than those reflected in the simulated sample.

Second, the analysis may suffer from omitted variable bias because several important determinants of wages—such as the nature of informal employment contracts, strength of worker networks, union membership, duration of work availability, household responsibilities, and prevailing social norms—were not included in the model. These factors could significantly influence wage levels and the observed gender wage gap, and their exclusion may distort the true relationship between gender and wages.

Finally, the study does not claim to establish causal relationships due to the limitations of the dataset and methodology. To make stronger causal claims about what drives gender wage differences, more rigorous research designs are required, such as panel data, natural experiments, instrumental variable techniques, or

field-based surveys. These approaches would allow for better identification of the underlying mechanisms and provide more reliable evidence on the drivers of wage inequality.

Conclusion

The present study highlights a significant gender wage disparity among construction workers in the Aurangabad district. The descriptive statistics clearly show that male workers receive substantially higher average monthly wages compared to female workers. While part of this difference can be attributed to observable characteristics such as job role, skill level, and work experience, a considerable portion of the wage gap remains unexplained. This suggests the presence of deeper structural issues, including unequal access to skilled work, gender-based task segregation, differences in bargaining power, and possible forms of workplace discrimination—whether explicit or implicit.

The findings emphasize that the gender wage gap in construction is not merely an economic outcome but reflects broader social and institutional inequalities. Women's concentration in unskilled and physically demanding roles, combined with limited opportunities for skill upgrading, continues to restrict their earning potential. Addressing this disparity requires not only wage monitoring and enforcement but also systemic efforts to empower women through training, certification, and supportive workplace facilities.

While the study is based on simulated data and therefore cannot be generalized to all construction workers in Aurangabad, it provides useful insights into the possible patterns and drivers of gender-based wage inequality in the sector. It also highlights the need for more detailed, field-based research to accurately measure the wage gap and understand the underlying causes. Overall, the study underscores the importance of targeted policy interventions and a coordinated effort from government agencies, employers, and training institutions to promote fair wages, skill development, and gender equity in the construction industry.

Suggestions

1. **Provide Skill Training for Women**: Women should be given access to training programs in higher-paying construction skills such as masonry, plastering, tiling, carpentry, and machine operation. Skill development centers and government schemes should reserve seats or run special batches for women.
2. **Strict Implementation of Equal Pay Laws**: Contractors, subcontractors, and site supervisors must be monitored to ensure compliance with the Equal Remuneration Act. Wage registers should be verified regularly, and penalties should be applied for paying unequal wages for equal work.
3. **Promote Women's Participation in Skilled Work**: Women should be encouraged and supported to take skilled roles instead of being limited to unskilled tasks. Providing formal certification for women's competencies can help them secure higher wages.
4. **Provide Support Facilities at Worksites**: Many women face difficulties due to childcare responsibilities or lack of safe transport. Worksites should provide basic facilities such as crèches, restrooms, drinking water, and transportation support to increase women's participation in better-paying jobs.
5. **Awareness and Capacity-Building Programs**: Women workers should be made aware of minimum wage rules, job rights, grievance procedures, and welfare schemes. Capacity-building workshops can improve their confidence and bargaining power.
6. **Encourage Worker Unions and Collectives**: Women's participation in construction labor unions or collectives should be strengthened. Collective bargaining can help reduce wage discrimination and improve workplace conditions.
7. **Promote Transparent Wage Practices**: Wage payments should be made through bank accounts rather than cash to reduce manipulation. Digital wage slips and attendance records can improve transparency and prevent underpayment.
8. **Government–NGO Collaboration**: NGOs working on gender rights can collaborate with government bodies to run awareness drives, skill training programs, and legal literacy sessions for women construction workers.
9. **Employer Sensitization Programs**: Employers and contractors should be sensitized about gender equality, benefits of hiring skilled women, and the importance of inclusive workplaces to reduce biases and stereotypes.
10. **Encourage Public and Private Projects to Mandate Gender Equity**: Government tenders and private construction projects can include clauses that require hiring and training women workers, ensuring equal pay, and reporting gender-disaggregated wage statistics.

Reference:

- Anker, (1997), "The theory of occupational segregation by sax: An Overview" International labour review, Vol 136, No.3, 214-242.
- GG Kingdon, J Unni (2001) "Education and women's labour market outcomes in India Education Economics,Vol.120, No.1,135-147.

- UC Banerjee (2003)"Comparative studies on the microbial adsorption of heavy metals" Advances in Environmental Research, ElsevierVolume 7, Issue 2, January 2003, 311-319
- Rosalinda Pineda Ofreneo (2001), Integrating gender concerns in anti-poverty reduction strategies" *India Policy Forum, vol.1(1)136-148*
- Afridi, F., A. Mukhopadhaya., and S. Sahoo. (2016). "Female Labor Force Participation and Child Education in India: Evidence from the National Rural Employment Guarantee Scheme." *IZA Journal of Labour& Development* (2016) 5:7.
- Afridi, F., and V. Iversen. 2014. "Social audits and MGNREGA delivery: Lessons from Andhra Pradesh." *India Policy Forum* 10(1): 297-341.
- Azam, M. 2012. *The Impact of Indian Job Guarantee Scheme on Labor Market Outcomes: Evidence from a Natural Experiment*. IZA Discussion Paper 6548. Bonn, Germany: Institute for the Study of Labor.
- Basu, Arnab K., Nancy H. Chau, and Ravi Kanbur. 2010 "Turning a Blind Eye: Costly Enforcement, Credible Commitment and Minimum Wage Laws." *The Economic Journal* 120, no. 543 (2010): 244-269.
- Berg, E., S. Bhattacharyya, R. Durgam, and M. Ramachandra. 2015. *Can Public Works Increase Equilibrium Wages? Evidence from India's National Rural Employment Guarantee*. Working Paper 2015. Bristol, UK: University of Bristol.
- Boserup, Ester. 1970. Women's role in economic development. New York: St. Martin.
- Card, D., A.R.Cardoso., and P.Kline. 2016. "Bargaining, Sorting, and the Gender Wage Gap: Quantifying the Impact of Firms on the Relative Pay of Women." *The Quarterly Journal of Economics* (2016) 131 (2): 633-686.
- Cuberes, D., &Teignier-Baqué, M. 2012. *Gender inequality and economic growth*. Background Paper. Washington D.C, USA: World Bank
- Deininger, K., S. Jin, and H. Nagarajan. 2013. "Wage Discrimination in India's Informal Labor Markets: Exploring the Impact of Caste and Gender." *Review of Development Economics* 17 (1): 130-47.
- GOI (Government of India) 2005. *The National Rural Employment Guarantee Act: The Gazette of India, Extraordinary*. New Delhi: Government of India.
- Gupta, S. 2006. "Were District Choices for NFFWP Appropriate?" *Journal of Indian School of Political Economy* 18(4): 641-648.
- Heckman, J., H.Ichimura, and P.E.Todd.1997. "Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme." *The Review of Economic Studies* 64(4): 604-654.
- Imbert, C., and J.Papp.2015. "Labor Market Effects of Social Programs: Evidence from India's Employment Guarantee." *American Economic Journal: Applied Economics* 2015, 7(2): 233–263