

Employment and Wages of Agricultural Women Labour: An Empirical Study in Nizamabad District of Telangana State

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Abstract

Agricultural women labourers are the backbone of the rural farm economy in India. They are engaged in casual and seasonal employment at lower wages on a regular basis as compared to men doing the same work. A descriptive survey research method was adopted for studying employment pattern and wage levels of women agricultural labourers who were engaged in farm employment in six villages (Siddapur, Mosra, Govoor, Sompur, Takli and Kaldurki) spread over Bodhan, Mosra and Pothangal Mandal of Nizamabad district, Telangana. The study interviewed 300 agricultural labourers out of which 186 (62%) were men and 114 (38%) were women. Focus was given on the socio-economic status of 114 women respondents. Around 32.46% of the respondents were landless and worked on a wage employment basis, 31.58% of the respondents were cultivating on rainfed land and all of them were facing wage penalty in terms of 64.04% and 35.96% respondents getting half and quarter lesser wages respectively as compared to men doing same work. All the respondents were members of Self Help Groups (SHGs). The average monthly family income of respondents increased from ₹3921.05 before enrolling in SHG to ₹7285.09 after joining SHG programme, thereby registering an increase of ₹3364.04 (85.79%) as respondents started taking up Tailoring, petty business along with farm wages with the support of credit facility. The study also revealed that the wage penalty and increases in income were not uniform across all the six villages. The study further revealed that there exists significant difference between gender in respect to land ownership ($\chi^2 = 65.89$, $p < 0.001$), wage penalty ($\chi^2 = 62.51$, $p < 0.001$), access to irrigation ($\chi^2 = 63.79$, $p < 0.001$), exclusion of women from input subsidy benefits ($\chi^2 = 24.06$, $p < 0.001$). Since the study was cross sectional in nature, the study could not take a control group due to time constraint and hence it just reveals just the association and not the causation. The study concludes that though joining the SHG has helped in increasing the income levels reported by women respondents and have diversified employment options, but it has failed to bridge the gap in terms of wage levels in agricultural labour market.

Keywords: Agricultural Women Labour, Employment, Gender Wage Gap, Wage Penalty, Self-Help Groups, Rural Labour Market, Nizamabad, Telangana.

1. Introduction

Women form the backbone of India's agricultural labour force, comprising the bulk of transplanters, weeders, harvesters, assistants in post-harvest operations and animal husbandry. Yet, the feminisation of

agricultural employment has not yielded corresponding gains in terms of rewards—women continue to be concentrated in the most casual, seasonal and physically demanding occupations, are often denied recognition as cultivators, and receive consistently lower remuneration for the same work. In fact, women's dependence on casual wage employment appears to be greatest among landless and marginal households, where male unemployment and underemployment is also common, and where the poverty-reducing role of female wages is consequently the highest.

The Nizamabad district in the north-eastern part of Telangana state offers a useful context to explore gender differentials in agricultural employment. As the command area for Nizam Sagar, Nizamabad has been transformed into a major agro-industrial centre, specialising in paddy, sugarcane and maize production under canal and borewell irrigation. This has resulted in an increased need for seasonal female labour, both within and outside the farm gate, while female ownership of land and production assets remains low. Taken together, these tendencies allow for a close examination of the situation of agricultural women labour in a state that is home to nearly 32 percent of the country's female agricultural workers.

The present study attempts to characterise the employment patterns, wage penalties and Self Help Group (SHG) benefits of 114 female agricultural labourers surveyed in six villages. A closer look at the district's gender-specific employment patterns allows for an appraisal of the relative disadvantage of women in the informal labour market. However, by focusing primarily on the experiences of women in the six surveyed villages, this paper seeks to go beyond the uniform assessment of women workers by examining the considerable heterogeneity in employment patterns, wage gains and SHG benefits between and within the study sites. The findings have been situated within the extant literature on gender and informal labour markets.

2. Review of Literature

2.1 Employment of Women in Indian Agriculture

A substantial literature documents the disproportionate presence of women in India's agricultural labour force and their overall low productivity and wage levels in comparison to men. Rural employment surveys highlight the tendency of women to be concentrated in 'low-skilled' agricultural tasks, such as transplanting, weeding, harvesting and post-harvest processing, while men dominate in mechanized tasks and operations requiring capital. This differential task specialisation, which appears to stem from social norms and the gender division of labour, emerges as a key determinant of the gender wage gap in agriculture. Women's employment in agriculture is also largely casual and seasonal, lowering their overall income and job security.

2.2 Gender Wage Inequality in Rural Labour Markets

The gender wage gap in India is a well-documented phenomenon that persists despite liberalisation and economic growth, and is particularly acute in rural areas, where women comprise the majority of the labour force. Rural women workers earn, on average, between 0.5 and 0.75 times the male wage, for similar work, with considerable regional variation. Gender wage gaps are widest in states and districts with high labour supply and weak implementation of minimum wage laws and equal pay legislation. Researchers observe that women's lower time allocation to the labour market, occupational and spatial segmentation, social norms surrounding women's work and the lack of collective bargaining avenues for female agricultural workers, contribute to the persistent disadvantage in wages. Nevertheless, female

education, the extent of irrigation and the presence of formal employment institutions have been found to attenuate the gender gap in rural areas.

2.3 Self-Help Groups, Microcredit and Women's Livelihoods

An extensive literature reviews the impact of Self Help Groups (SHGs) on women's employment and economic empowerment. While much of the discussion revolves around the role of SHGs in rural development, women's access to credit and capital, and the consequent impact on socio-economic status, gender, and empowerment outcomes, there is also a growing body of evidence addressing the differential effects SHGs have on women's employment and income. Mostly stemming from quasi-experimental and observational studies in India, these articles provide corroborating evidence on SHGs' role in facilitating financial inclusion, economic independence and financial literacy for rural women.

The literature on SHGs is inconclusive on the extent to which these organisations affect women's relative employment and income, but several studies suggest that their impact tends to be highest on consumption smoothing, micro enterprises and repayment capacity, and lowest on agricultural production and structural transformations in employment and wages. For female agricultural workers in particular, SHGs appear to influence the range of livelihood options available to women, with increases in reported income serving to offset some of the disadvantages associated with their employment in the informal sector.

2.4 Research Gap and Empirical Positioning

While much has been written on the characteristics of women's employment in India's agricultural sector, the ways in which such employment affects their wages and opportunities, as well as the role of SHGs in narrowing these opportunities, remain understudied. Few studies attempt to document women's employment and economic status within a single district while highlighting the differences between villages. This paper attempts to address this lacuna in the literature by profiling the employment and wage status of 114 female agricultural labourers surveyed in six villages of Nizamabad district. The paper combines descriptive statistics of village level employment patterns with inferential statistical analysis of gender specific wage differentials.

3. Objectives of the Study

Consistent with the descriptive, women-centred design, the study pursues the following objectives:

- To profile the demographic and employment characteristics of women agricultural labourers across the six surveyed villages of Nizamabad District.
- To document patterns of land ownership and irrigation access that shape women's dependence on wage employment.
- To measure the reported gender wage penalties faced by women for equivalent agricultural operations and to map their variation across villages.
- To examine changes in women's reported monthly earnings and occupational diversification associated with Self-Help Group (SHG) membership.
- To test, using inferential statistics, whether the observed gender disparities in employment and wages are statistically significant.

4. Research Methodology

4.1 Design and Setting

The study uses a cross-sectional primary survey design. Field data were collected from 300 agricultural

labourers (residents of six villages) — Siddapur, Mosra, Govoor, Sompur, Takli and Kaldurki. Three mandals — Bodhan, Mosra and Pothangal — were selected because they represent the core zones of the district's intensive paddy, sugarcane and maize cultivation, under which female field labour and gender wage disparities are most visible. The sample consists of 186 male respondents (62%) and 114 female respondents (38%); the analysis in this paper focuses on 114 women. The one-time snapshot design means that the study cannot establish causal relationships, and results are framed as observed associations within the surveyed population.

4.2 Sampling Strategy

Respondents were agricultural labourers selected from the six selected villages via non-probability sampling with purposive and convenience components, consistent with field-recruitment constraints. Eligibility criteria were adult agricultural labourers (18 years and above) resident in the surveyed villages who completed the questionnaire schedule. Non-agricultural workers and absentee landholders were excluded. Female respondent distribution across the six villages ranged from 14 in Kaldurki to 23 in Siddapur, as documented in Section 5.

4.3 Data Collection Instrument

Data were collected using a structured questionnaire covering a range of topics, including demographics, occupation and employment history, land ownership and irrigation, gender wage differentials, SHG membership, monthly income before and after SHG enrolment, borrowing and credit use, and social and political participation. Responses to the questionnaire were coded and entered into a pool dataset for analysis.

4.4 Statistical Analysis

Descriptive statistics (frequencies, percentages, means and ranges) were computed for all variables and further disaggregated by the surveyed villages. To test whether gender disparities in land ownership, wage-penalty tier, irrigation access and input-subsidy access were statistically significant, chi-square (χ^2) tests of independence were conducted using two-way contingency tables, with Yates' correction for 2×2 tables and Cramér's V reported for effect size measurement. Statistical significance was assessed at the 5% level.

4.5 Ethical Considerations

The study was conducted in accordance with the ethical standards of academic social research. Participation was voluntary, informed consents were obtained, and anonymisation of responses was applied. [Insert institutional ethics approval reference number and date before submission.]

5. Results and Empirical Findings

5.1 Distribution and Demographic Profile of Women Labourers

The 114 respondents were distributed across the six survey villages. Of these, Siddapur and Takli had the largest sub-sample (23 and 22 respondents, respectively), while Kaldurki had the smallest (14 respondents). The women were middle-aged with a mean age of 44.7 and were all married. Illiteracy was widespread with 36 respondents (31.58%) being unable to read and write. This was a human-capital constraint that pushed many into casual field labour. The illiteracy rate varied between the villages from 2 out of 14 respondents (14.29%) in Kaldurki to 9 out of 22 respondents (40.91%) in Takli. Table 1 provides an overview of the distribution and demographic data.

Table 1: Village-wise Distribution and Profile of Women Agricultural Labourers (n = 114)

Village	Mandal	Women (n)	Share (%)	Mean Age	Illiterate (n)
Siddapur	Bodhan	23	20.18	45.1	8
Takli	Pothangal	22	19.30	46.5	9
Sompur	Pothangal	20	17.54	46.4	8
Mosra	Mosra	19	16.67	43.8	5
Govoor	Mosra	16	14.04	43.4	4
Kaldurki	Bodhan	14	12.28	41.5	2
Total	—	114	100.00	44.7	36

Source: Primary survey data. Shares are of the 114 women respondents.

5.2 Employment Profile and Occupational Diversification

The respondents were largely casual agricultural wage labourers, for whom tailoring at home provided a welcome occupation. For the 36 respondents (31.58%), agricultural wage labour was their primary occupation before joining SHGs, while 37 respondents (32.46%) were engaged in tailoring as their main occupation. For 41 respondents (35.96%), there was no gainful occupation, as they were dependent on unpaid family labour or casual field labour. After joining the SHGs, every respondent reported a change in occupation or an increase in income sources, as they shifted to tailoring, petty enterprises, and credit-supported agricultural production. The pre-SHG occupational distribution varied between the villages, with the 12 tailoring respondents (52.17%) concentrated in Siddapur, while Kaldurki and Mosra had the largest shares (23.33% each) of respondents who were engaged in no gainful occupation before joining the SHGs. See Table 2 for an overview.

Table 2: Principal Occupation of Women Before SHG Enrolment, by Village

Village	Women (n)	Agri. Wage Labour	Tailoring	No Independent Occ.
Siddapur	23	8	12	3
Mosra	19	5	4	10
Govoor	16	4	6	6
Sompur	20	8	5	7
Takli	22	9	7	6
Kaldurki	14	2	3	9
Total	114	36	37	41

Source: Primary survey data. 'No independent occupation' denotes unpaid family or intermittent field labour reported as the pre-SHG status.

5.3 Land Ownership and Irrigation Access

The respondents who owned land were able to participate in the agricultural production process as owner-cultivators, while the landless relied entirely on wage labour. Of the 114 respondents, 37 respondents (32.46%) were landless compared to 0 out of the 186 respondents (0%) among the men. In terms of irrigation sources, 36 respondents (31.58%) were reliant on rain-fed cultivation while 78 respondents (68.42%) had access to both rain-fed and bore well sources. Compared to other villages, landlessness was highest in Siddapur with 12 respondents (52.17%) reporting to own no land. Table 3 provides an overview of the land ownership and irrigation access for the respondents.

Table 3: Land Ownership and Irrigation Access among Women, by Village

Village	Women (n)	Landless (n)	Landless (%)	Land-owning (n)	Rainfed Only (n)
Siddapur	23	12	52.17	11	8
Mosra	19	4	21.05	15	5
Govoor	16	6	37.50	10	4
Sompur	20	5	25.00	15	8
Takli	22	7	31.82	15	9
Kaldurki	14	3	21.43	11	2
Total	114	37	32.46	77	36

Source: Primary survey data. All 186 male respondents reported owning land; landlessness was confined to women.

5.4 Gender Wage Penalties in Agricultural Labour

Each of the 114 respondents reported facing a gender wage penalty for similar work. Of these, 73 respondents (64.04%) reported earning half the wages of their male counterparts, while 41 respondents (35.96%) reported earning quarter the wages. The size of the penalty varied greatly between the villages, with 20 out of the 23 respondents (87%) in Siddapur, 16 out of the 22 respondents (72.73%) in Takli, and 5 out of the 14 respondents (35.71%) in Kaldurki facing the 50% penalty. Overall, the severity of the wage penalty followed the same pattern as the landlessness and was highest in Siddapur and Takli and lowest in Kaldurki. Table 4 provides an overview of the gender wage penalty distribution across the villages while Table 5 compares the distribution for the female respondents with the overall distribution.

Table 4: Reported Gender Wage Penalty Tiers among Women, by Village

Village	Women (n)	50% Penalty (n)	25% Penalty (n)	50% Tier (%)
Siddapur	23	20	3	87.0
Mosra	19	9	10	47.4
Govoor	16	10	6	62.5
Sompur	20	13	7	65.0
Takli	22	16	6	72.7

Village	Women (n)	50% Penalty (n)	25% Penalty (n)	50% Tier (%)
Kaldurki	14	5	9	35.7
Total	114	73	41	64.04

Source: Primary survey data. The 50% tier denotes women earning half the male rate for equivalent operations; the 25% tier denotes a quarter less.

Table 5: Reported Wage-Penalty Distribution — Women vs. Aggregate Sample

Reported Wage Penalty Tier	Women (n = 114)	Aggregate (N = 300)
50% penalty (earning half the male rate)	73 (64.04%)	107 (35.67%)
25% penalty (earning a quarter less)	41 (35.96%)	193 (64.33%)
Total reporting wage asymmetry	114 (100.00%)	300 (100.00%)

Source: Primary survey data. The women-only and aggregate columns describe different respondent groups and are presented separately rather than as directly comparable estimates.

5.5 Earnings, SHG Membership and Income Change

All 114 respondents were SHG members who joined between 2015 and 2020 and had formal bank loans from the cooperatives for more than ₹20,000 each. The mean monthly income per respondent before joining SHGs was ₹3,921.05 with incomes ranging between ₹2,500 and ₹6,000. After joining SHGs, the mean monthly income increased to ₹7,285.09 with incomes ranging between ₹5,000 and ₹10,000, an increase of ₹3,364.04 or 85.79%. The loans received were reported to have been used for agricultural purposes, repaying debts, and personal expenses. The increase in income varied between the villages with the respondents in Siddapur, who had the lowest income before joining SHGs, reporting the highest percentage increase of 100%, while the respondents in Kaldurki, who had the highest income before joining SHGs, reported the lowest increase of 75.7%. Table 6 provides an overview of the income changes for the respondents.

Table 6: Reported Monthly Earnings of Women Before and After SHG Participation, by Village

Village	Women (n)	Pre-SHG Mean (₹)	Post-SHG Mean (₹)	Change (%)
Siddapur	23	3,217	6,435	+100.0
Mosra	19	4,447	7,947	+78.7
Govoor	16	4,000	7,438	+85.9
Sompur	20	3,850	7,125	+85.1
Takli	22	3,614	6,841	+89.3
Kaldurki	14	4,857	8,536	+75.7
Total / Mean	114	3,921	7,285	+85.79

Source: Primary survey data. Figures are village mean reported monthly incomes; the total row reports the overall sample mean.

5.6 Social Participation and Institutional Access

The increased access to credit and the rise in personal income was accompanied by a heightened sense of social responsibility. All 114 respondents participated in community events and initiatives such as Swachh Bharat, Pulse Polio, and illiteracy surveys while 37 respondents (32.46%) participated in political activities. In terms of welfare schemes, 78 respondents (68.42%) were aware of and benefited from various schemes such as bank-linked loans, Sukanya Samriddhi, and the Pavala Vaddi interest subvention scheme. However, not a single respondent was aware of or benefited from direct agricultural input subsidy schemes as compared to 37 out of the 186 respondents (19.89%) among the men. This highlights the difference between the inclusion pathways for women and men as female labourers were integrated into the district's welfare and financial ecosystem through SHGs and not direct agricultural subsidies.

5.7 Inferential Testing of Gender Disparities

To determine the statistical significance of the observed inequalities, chi-square tests were performed for all key variables. The results indicate strong statistical significance for most of the observed disparities with the effect sizes for the differences in land ownership, wage penalty tiers, irrigation access, and direct subsidies being moderate to large. Table 7 provides an overview of the statistical test results.

Table 7: Summary of Inferential Statistical Tests (N = 300)

Research Dimension	Test	χ^2 (df = 1)	p-value	Cramér's V / Decision
Land ownership disparity	Chi-Square	65.89	$p < 0.001$	$V = 0.469$ · Significant
Gender wage penalty tier	Chi-Square	62.51	$p < 0.001$	$V = 0.456$ · Significant
Irrigation access disparity	Chi-Square	63.79	$p < 0.001$	$V = 0.461$ · Significant
Direct input-subsidy access	Chi-Square	24.06	$p < 0.001$	$V = 0.283$ · Significant

Source: Author's computation from primary survey data using chi-square tests with Yates' continuity correction.

6. Discussion

6.1 A Segmented and Casualised Female Labour Market

The findings describe a female agricultural labour market that is segmented, casualised and asset-poor. With 32.46% of women landless and a further large share cultivating only rainfed plots, the majority engage the labour market from a position of dependence with limited fallback options and consequently weak bargaining power. The concentration of women in wage labour and home-based tailoring, and the finding that 35.96% reported no independent gainful occupation before SHG entry, are consistent with the wider literature on occupational segmentation as the proximate driver of women's low agricultural earnings.

6.2 The Geography and Persistence of the Wage Penalty

That every woman surveyed reported a wage penalty, and that nearly two-thirds reported earning only half the male rate, confirms the durability of gender wage inequality in the district's farm labour market. The village-level analysis adds an important spatial dimension: the penalty was steepest in Siddapur and Takli, where landlessness and dependence on wage labour were highest, and mildest in Kaldurki, where women held relatively more land and reported the highest earnings base. This co-variation between landlessness and wage disadvantage suggests that asset poverty and wage exploitation reinforce each other and that wage remedies alone will not reach women whose vulnerability is rooted in the absence of land.

6.3 SHG Participation and Earnings Gains

Women's reported average monthly earnings rose by 85.79% after SHG enrolment and all women secured cooperative bank loans, diversifying their income beyond pure farm wage labour. This supports the view that collective finance can widen the menu of income sources and raise reported earnings. The gains were largest where the starting base was lowest Siddapur women doubled their reported income indicating that SHGs delivered proportionally more to the most disadvantaged. It is important, however, to read these gains as an expansion of income opportunities rather than as a correction of the underlying wage rate: the wage penalty in field labour persisted alongside the income gains and none of the women accessed direct agricultural input subsidies. Because the study lacks an untreated comparison group, the income change is an observed association, not a demonstrated causal effect of SHG membership.

6.4 Institutional Access and Civic Participation

The combination of near-universal welfare and SHG access with the complete absence of direct agricultural input subsidies among women indicates that female labourers were included through social-welfare and microfinance channels but excluded from mainstream agricultural support. High rates of community participation (100%) and meaningful political involvement (32.46%) point to growing social agency, but this civic inclusion has not yet translated into equal treatment in the agricultural input and subsidy system.

7. Policy Implications

- Wage equity and labour-law enforcement. The reported 25–50% wage gaps highlight the need for more rigorous monitoring of equal-remuneration and minimum-wage compliance in agricultural labour markets, particularly in villages such as Siddapur and Takli where the steepest penalties concentrate.
- Women's access to land and productive assets. Because wage disadvantage tracks landlessness, joint land titling, improved access to formal agricultural finance and support for women's ownership of productive assets are essential to reduce the dependence that underpins wage exploitation.
- Gender-inclusive agricultural extension and subsidy. The complete exclusion of women from direct input subsidies calls for deliberate targeting of eligible women labourers and cultivators within extension, input-distribution and subsidy programmes.
- Strengthening SHG and microfinance infrastructure. Given the sizeable earnings gains associated with SHG membership, credit ceilings, interest rates and cooperative-bank linkages should be strengthened and complemented with skill training that broaden women's employment beyond seasonal field labour.

- Education and skilling for rural women and girls. With 31.58% of women illiterate, investment in adult literacy, female education and vocational skilling is central to lifting women out of the lowest-paid, most casual segment of the agricultural labour market.

8. Limitations and Future Research

The study is based on a cross-sectional survey of 300 agricultural labourers, of whom 114 are women, drawn from six villages. Its geographical range and observational design limit the extent to which the results can be generalised beyond the surveyed population, and the absence of an untreated comparison group means that reported income changes cannot be interpreted as causal effects of SHG membership. Income and wage data are self-reported and subject to recall and social-desirability bias. Future research would benefit from longitudinal designs, larger and probability-based samples, and the inclusion of a comparison group of non-SHG women to isolate the labour-market effects of collective finance from broader trends.

9. Conclusion

This study examined the employment patterns and wage conditions of 114 women agricultural labourers across six villages of Nizamabad District, Telangana. The evidence describes a segmented and disadvantaged female labour market: a third of women were landless and dependent on wage employment, every woman reported a gender wage penalty most of them earning half the male rate and women were entirely excluded from direct agricultural input subsidies. The village-level analysis reveals that this disadvantage is spatially uneven, with wage penalties steepest where landlessness is highest. At the same time, Self-Help Group membership was associated with a substantial 85.79% rise in women's reported monthly earnings and with diversification beyond casual field labour, with the largest proportional gains accruing to the most disadvantaged women. Yet these gains operated alongside, not in place of, a persistent wage gap in field labour. The findings suggest that raising the employment and earnings of agricultural women labour requires pairing SHG-linked microfinance with structural reforms in wage enforcement, land and asset ownership, and gender-inclusive agricultural institutions. Because the study is a localised cross-sectional survey without a causal counterfactual, its results are best read as empirical associations within the surveyed population.

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