

Structural Transformation of Women's Employment in Arunachal Pradesh: Evidence from PLFS (2017-2024)

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Abstract

This paper examines the evolving dynamics of women's employment and labour force participation in Arunachal Pradesh over a seven-year period, utilizing data from the Periodic Labour Force Survey (PLFS). The findings reveal a dramatic surge in the Female Labour Force Participation Rate (LFPR), which rose from 15.3% to 70.8% in rural areas and from 11.7% to 46.4% in urban areas. Concurrently, the structural composition of employment has undergone a significant transformation. There is a pronounced shift toward self-employment, which reached 93.1% for rural women and 58.7% for urban women by 2023-24. This increase corresponds with a sharp decline in regular wage and salaried employment, particularly in urban areas where it fell from 75.5% to 39.6%. Casual labour remains a negligible component of the female workforce in the state. These trends suggest a growing reliance on entrepreneurial or own-account work among women, raising critical questions regarding the quality of employment, economic necessity, and the impact of state-level policy interventions on gendered work patterns in Northeast India.

Keywords: Female Labour Force Participation, Arunachal Pradesh, PLFS, Self-Employment, Casual labour.

1. Introduction

In the global discourse on gender and economics, India's female labour force participation has long been a subject of intense scrutiny. For decades, the national trend was characterized by a "U-shaped" curve or a persistent decline despite rising female education and economic growth. However, recent data from the Periodic Labour Force Survey (PLFS) signals a significant turning point, showing a nationwide resurgence in women's participation in the workforce. This shift is particularly pronounced in the rural heartlands, where the Female Labour Force Participation Rate (LFPR) has seen its most substantial gains.

Within this national framework, the North Eastern region of India stands out as a distinct socio-economic corridor. Historically, the North East has consistently reported higher female participation rates compared to the national average, often attributed to more egalitarian tribal social structures and fewer cultural restrictions on women's physical mobility. Yet, the region also faces the challenge of "jobless growth" and a heavy reliance on informal sectors, which complicates the narrative of economic empowerment.

At the center of this regional transformation is Arunachal Pradesh. As the largest state in the North East by land area, its transition from a subsistence-based agrarian economy to a more diversified landscape has profoundly impacted women's work. Formerly known as the North-East Frontier Agency (NEFA),

Arunachal Pradesh has a unique developmental history. Until the mid-20th century, the region remained largely isolated, with its diverse tribal populations practicing subsistence agriculture. Historically, women were the backbone of this agrarian economy, managing both the fields and the household. The state's demographic profile has evolved alongside its political status. According to the 2011 Census, the population of Arunachal Pradesh was approximately 13.84 Lakhs. Parallel to this population growth is a remarkable stride in education, the literacy rate, which stood at 65.38% in 2011. This rapid modernization shifted the economy from traditional barter and subsistence toward a market-based structure, creating a divide between rural subsistence work and urban salaried roles. Understanding the nature of female employment is critical for assessing regional economic development and gender parity. This research utilizes data from the Periodic Labour Force Survey (PLFS) spanning from 2017-18 to 2023-24 to map the trajectory of women's work participation and the shifting categories of their employment in the state. During this period, Arunachal Pradesh witnessed an unprecedented rise in the Women Labour Force Participation Rate (LFPR) in both rural and urban areas. However, these rising numbers are accompanied by a significant shift in the type of work being performed. While self-employment has become the dominant category for women in both rural and urban sectors, there has been a corresponding and sharp decline in regular wage or salaried positions. This paper aims to analyze these statistical shifts to determine whether this surge in participation reflects genuine economic empowerment or a survivalist move toward informal, own-account work.

2. Literature Review

Panjak and Tankha (2010) conducted an extensive research study across Jharkhand, Bihar, Himachal Pradesh, and Rajasthan, concluding that paid MGNREGA work has fundamentally "altered the status" of rural women. They find that the program provides women with greater individual freedom and potential for social agency by offering a reliable alternative to traditional unpaid labor or exploitative manual work. The ability to earn independent income allows women to take a more active role in community affairs and financial decision-making within their households. Furthermore, the authors highlight that the program helps challenge traditional gender norms by recognizing women as active and equal participants in the public workforce. Their study emphasizes that the socio-economic level of women beneficiaries changed "significantly and favorably" after joining the scheme, with improved food consumption, higher savings in post offices, and increased spending on children's education. They argue that this social change is a vital, if unintended, catalyst for broader gender-inclusive development in rural India.

Srivastava (2010) stated that the rural women workers in India, especially those from SC/ST communities, face multiple layers of disadvantage due to patriarchy, low education, poor asset ownership, and job discrimination. While their work participation rates (WPRs) may appear high, these are mostly in low-paying, insecure agricultural or informal jobs, often with poor working conditions and limited social protection. Non-agricultural and regular jobs require higher education and autonomy, which many rural women lack. Labour market discrimination, low wages, and segmented opportunities further marginalize them. The National Rural Employment Guarantee Programme (NREGP) holds potential to improve their conditions, but needs stronger implementation. There is a need for gender-sensitive policies, better wage valuation, and institutional support to promote decent employment for rural women.

Klasen, Pieters (2012) examined that for highly educated women in urban India, labor market trends since 1999 show a more positive picture. Although the growth in real earnings slowed, it still continued for both men and women with graduate-level education. These women increasingly engaged in self-employment

in manufacturing and services, and also found more opportunities in regular service sector jobs, which offered greater visibility, job security, and better income. This shift aligns with India's skill-driven economic growth, especially in services. Highly educated women enter the labor force in response to higher expected wages, and their own educational attainment significantly boosts their participation. Unlike less-educated women, their entry is not influenced by the education of the household head.

Kapsos et al. (2014) identify "gender-biased structural transformation" as a primary reason for the sharp decline and persistent low levels of female labor participation in India. Their research highlights a stark sectoral pattern where women remain disproportionately trapped in the primary agricultural sector, while men successfully predominating in the expanding secondary and tertiary sectors. This occupational segregation is driven by a lack of targeted labor demand for women in the industry and service sectors, combined with cultural restrictions on mobility. The authors argue that as the economy develops, the failure to create "women-friendly" jobs in formal sectors limits their mobility and broader economic integration. This sectoral mismatch means that when women are displaced from traditional agricultural roles by mechanization, they have few viable non-farm alternatives, leading to their withdrawal from the labor force entirely. Their work advocates for "demand-side" interventions to create decent employment opportunities that specifically target the growing number of educated women entering the market.

Mehrotra and Parida (2017) link the decline in rural female participation to intensive mechanization and technological change in the agricultural sector. They point out that the introduction of machinery such as seed drillers, harvesters, and threshers disproportionately displaced unskilled female workers from manual tasks that were traditionally "women's jobs". Because India's structural transformation occurred without a commensurate expansion of labor-absorbing non-farm work in rural areas, these displaced women were not absorbed into other sectors. This technological displacement contributed significantly to the "missing" female labor force observed in rural India over the last two decades. The authors argue that while rising education and household income (the income effect) played a role, the lack of availability of quality job opportunities remained the dominant driver of withdrawal. They emphasize that sustaining current growth requires a shift in industrial policy to promote sectors that can absorb displaced rural labor and support the transitions of educated women into high-value roles.

Desai and Joshi (2019) found that despite rapid economic growth, rising education, declining fertility, and improved infrastructure in India, female work participation rates (FWPR), especially in rural areas, declined sharply between 2004-05 and 2011-12.

Walter & Ferguson (2022) map the persistent gender wage gaps (GWG) in India's regular employment sector, documenting a slow but steady decline over three decades. In the early 1990s, urban Indian women earned approximately 48% of what men earned in similar positions, by 2018-19, this gap had narrowed to 28%. Despite this progress, the authors argue that discrimination rather than observable characteristics like education or skill remains the primary driver of the gap. They highlight a "sticky-floor" phenomenon that worsened in 2018-19, further hindering the upward mobility of women at the lower end of the wage spectrum. Data from the 2021-22 PLFS corroborates these findings, showing that urban regular female employees earned an average of Rs. 4,800 monthly compared to Rs. 6,300 for males, a 24% disparity. They conclude that the systemic undervaluation of women's work by employers, rooted in gender prejudice, continues to depress their earnings even as their labor force participation begins to rise.

Chatterjee and Vanneman (2022) studied employment relationship in the districts where patriarchal norms about purdah are weakest or where more "suitable" salaried employment is most widespread. They

found that those low-purdah, high-salaried employment areas still show a strong curvilinear relationship and declining levels of employment with moderate levels of education.

Thapa (2024) examined that Arunachal Pradesh struggles with high unemployment rate due to limited economic development and lack of industrialization. The state's heavy reliance on government jobs and the absence of a strong informal sector has worsen the issue, making it difficult for the government to address unemployment effectively as its capacity to provide jobs nears saturation.

Kumar (2024) utilizes findings from national Time Use Surveys to calculate the economic value of the unrecognized labor performed by Indian women. Her research shows that Indian women spend over eight times more time on unpaid domestic and care work than men, an average of 289 minutes per day compared to just 88 minutes for males. For women in the peak working age group (15-59 years), this burden rises to 305 minutes daily. Kumar points out that cooking, cleaning, and childcare occupy almost 85% of women's unpaid work time, creating a severe "time poverty" that restricts their ability to engage in paid employment. She estimates the total economic value of this unpaid work at approximately 15% to 17% of India's GDP. Her work underscores that this massive value created within households is currently disregarded by market statistics, highlighting a critical need for physical infrastructure improvements like clean fuel and piped water and social policies that promote the redistribution of care work to enable women's participation in the formal economy.

Samantray (2024) highlights a significant rebound in women's work participation while expressing "serious concern" over the qualitative nature of this growth. While the Worker Population Ratio (WPR) for women rose from 22% in 2017-18 to 35.9% by 2022-23, Samantray argues that this transformation is hindered by a heavy concentration in "vulnerable employment". A defining trend identified in her work is the erosion of regular wage and salaried jobs, which provide stability and social security; their share in female employment declined from 10.5% in 2017-18 to 8% in 2022-23. Simultaneously, self-employment surged from 57.7% to 71%, with much of this category consisting of "unpaid helpers" in family enterprises or own-account workers with limited income security. Samantray posits that persistent socio-structural norms and the disproportionate burden of unpaid care work often "push" women toward these flexible but low-paying informal roles. Her work underscores the need for policy interventions that move beyond quantitative participation metrics to focus on improving job quality and providing social protections for informal workers.

Afridi (2025) investigates the "subsistence strategy" underlying the post-pandemic rise in female self-employment, arguing that entrenched social norms and limited job quality remain major impediments. Her analysis of the 2023-24 period reveals a sharp decline in the real average earnings of self-employed rural women, falling from Rs. 2,789 in 2022-23 to Rs. 2,611. Afridi posits that this earning drop, occurring alongside rising participation, indicates that women are moving into the workforce out of "economic compulsion" (a push factor) rather than being drawn by better opportunities. She highlights that Indian women spend over eight times more time on unpaid domestic work than men, creating a "dual burden" that forces them into low-productivity subsistence roles. Furthermore, inefficient home technologies and restrictions on mobility due to safety concerns limit their access to job information and high-quality salaried positions. Afridi concludes that without addressing these structural and normative barriers, the recent gains in participation may represent a shift toward greater economic vulnerability rather than sustainable empowerment.

Panda et al. (2025) analyze the "feminization of agriculture" as a consequence of male out-migration and structural changes in rural India. They define this phenomenon as the increasing involvement of women

in agricultural tasks, decision-making, and leadership. While women have become the primary labor force on farms responsible for 60-75% of activities like sowing, weeding, and harvesting, their contributions are often undervalued or underreported. The authors highlight a significant "underutilization of female potential," noting that women own only 13-14% of land holdings, which restricts their access to credit, insurance, and government extension services. Despite these barriers, the study finds that women's involvement leads to more sustainable and diverse farming practices, as they often prioritize household nutrition and biodiversity.

Riba (2026) explores the localized impact of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on women's livelihoods in the Leparada district of Arunachal Pradesh. The findings indicate that MGNREGA has played a vital "stabilizing role" in a region where non-farm employment opportunities are scarce and agricultural income is seasonal. By providing guaranteed work within the village, the program enables women to participate in wage labor without neglecting their domestic responsibilities or facing the risks of distress migration. Riba reports a 10% reduction in seasonal migration among beneficiary households and highlights that approximately 35% of respondents saw an expansion in their economic opportunities. Crucially, the study finds that direct access to wages has enhanced women's agency and their role in intra-household financial decision-making.

3. Objectives

1. To analyze the trends in Female Labour Force Participation Rate (LFPR) in Arunachal Pradesh (2017-2024)
2. To examine the structural shifts in employment categories for women.

4. Methodology

This study uses a quantitative approach to analyze women's employment trends in Arunachal Pradesh from 2017-18 to 2023-24. The research relies on secondary data sourced from the Annual Reports of the Periodic Labour Force Survey (PLFS), published by the Ministry of Statistics and Programme Implementation (MOSPI). The analysis focuses on women aged 15 years and above, examining their Labour Force Participation Rate (LFPR) and their distribution across three employment categories: self-employed, regular wage/salary, and casual labour. By comparing data across rural and urban sectors, the methodology highlights structural shifts in the types of work women are engaging in over time.

5. Results and Discussion

5.1 Women's Labour Force Participation Rate (LFPR)

The data from Table 1 reveals a dramatic and consistent increase in the Female Labour Force Participation Rate (LFPR) in Arunachal Pradesh over the seven-year period from 2017-18 to 2023-24. In rural areas, the participation rate started at a low of 15.3% in 2017-18 and surged to 70.8% by the year 2023-24, representing nearly a fivefold increase. Urban areas have also witnessed a rising Female Labour Force Participation Rate from 11.7% to 46.4% from the year 2017-18 to 2023-24. A critical turning point is observed between 2021-22 and 2022-23, where rural LFPR jumped from 32.4% to 62.7% in a single year.

Table 1: Women labour force participation rate (in per cent) in usual status in Arunachal Pradesh estimated from PLFS (2017-18) to PLFS (2023-24) for persons of 15 years and above:

Year	Rural	Urban
2017-18	15.3	11.7

2018-19	17.6	14.9
2019-20	24.1	17.7
2020-21	28.7	23.1
2021-22	32.4	25.1
2022-23	62.7	37.4
2023-24	70.8	46.4

Source: Ministry of Statistics and Programme Implementation (MOSPI), Annual Report, PLFS, 2017-18 to 2023-24

This massive surge suggests a profound shift in the socio-economic fabric of the state. The significantly higher participation in rural areas compared to urban areas likely indicates that rural women are increasingly being integrated into economic activities, possibly driven by government schemes, self-help groups, or a shift in cultural norms regarding women’s work outside the home. The sharp spike after 2021 might also reflect a "recovery and entry" phase following the global pandemic, where economic necessity or new local opportunities drove women into the workforce at record rates.

5.2 Structural Shifts in Employment Categories

Table 2 highlights a significant "structural transformation" in the nature of women's work, characterized by a move toward self-employment and away from regular salaried positions. In rural areas, self-employment rose from 73.1% in 2017-18 to a dominant 93.1% in 2023-24. Urban areas saw an even more volatile shift, with self-employment jumping from 24.5% to 58.7% over the same period. There has been a stark decline in formal salaried roles. Rural women in this category dropped from 26.9% to just 6.4%, while urban women saw their share of regular jobs nearly halved, falling from 75.5% to 39.6%. Casual Labour remains the least common for women in the state, only 0.5% for rural and 1.7% for urban women in 2023-24.

Table 2: Percentage distribution of women workers (in usual status) across various categories of employment in India from PLFS (2017-18) to PLFS (2023-24):

Year	Category of Employment					
	Self-employed		Regular Wage / Salary		Casual labour	
	Rural	Urban	Rural	Urban	Rural	Urban
2017-18	73.1	24.5	26.9	75.5	0.0	0.0
2018-19	84.1	23.0	14.1	75.7	1.8	1.2
2019-20	75.6	26.5	21.4	72.2	3.0	1.2
2020-21	79.6	36.0	18.0	61.9	2.3	2.1
2021-22	84.8	50.0	12.5	46.8	2.8	3.2
2022-23	87.6	68.5	10.8	31.1	1.7	0.5
2023-24	93.1	58.7	6.4	39.6	0.5	1.7

Source: Ministry of Statistics and Programme Implementation (MOSPI), Annual Report, PLFS, 2017-18 to 2023-24

The transition toward self-employment as the primary mode of work is the most striking finding. While the rising LFPR from Table 1 shows more women are working, Table 2 suggests that this work is increasingly independent or informal rather than characterized by formal sector employment or regular

salaried work. In urban areas, the collapse of regular wage employment from 75.5% to 39.6% is particularly concerning, as it may indicate a lack of formal job creation to keep pace with the growing number of women entering the workforce. Consequently, women may be turning to self-employment such as small-scale trade, handicrafts, or agriculture out of necessity rather than preference.

6. Conclusion

The structural transformation of women's employment in Arunachal Pradesh between 2017 and 2024 is defined by a paradox of record-high participation coupled with a significant shift toward informal work structures. While the Female Labour Force Participation Rate (LFPR) saw an extraordinary upward trajectory, most notably in rural areas where it surged from 15.3% to 70.8%, this growth has not been matched by an increase in formal job opportunities. Instead, the data reveals a massive movement toward self-employment, which now dominates the labor landscape for women in both rural (93.1%) and urban (58.7%) sectors.

This transition highlights a concerning "informalization" of the female workforce, evidenced by the sharp erosion of regular wage and salary positions. In urban areas, the share of women in stable salaried employment declined from 75.5% in 2017-18 to just 39.6% in 2023-24, while rural salaried employment dropped from 26.9% to a negligible 6.4%. Furthermore, the near-disappearance of casual labor in rural areas, ending at 0.5%, suggests that women are predominantly engaging in household-based enterprises or subsistence activities rather than seeking daily wage work. Ultimately, while the state has successfully integrated a vast majority of women into the economic fold, the lack of formal sector absorption and the high reliance on self-employment remain critical challenges for long-term economic security.

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