

Revisiting the U-Shaped Hypothesis: An Analysis of Female Labor Force Participation and Economic Development in Assam, India

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ABSTRACT

Achieving gender equality and empowering all women and girls is the 5th goal of the United Nations Sustainable Development Goals. The participation of women in the labour force is a key indicator of gender equality, economic empowerment of women and socio-economic development of a country. This paper explores the theoretical foundations of female labour force participation (FLFP) in Assam within the framework of the U-shaped hypothesis. The U-shaped curve suggests that FLFP initially declines and then rises with economic development. Using the NSSO, Periodic Labour Force Survey (PLFS) data from 2017 to 2021 and theoretical constructs, we are trying to examine the socio-economic, cultural, and structural factors affecting FLFP in Assam. As per the Periodic Labour Force survey-2021-22, Assam is situated at an increasing phase of the U-curve, where female participation in the labour force grows in response to the development and diversification of the economy. To continue such a pattern, there is a need for effective policies and social support systems formalization of women work.

KEYWORDS: *Economic Development, Labour Force, Labour force participation rate, U-shaped hypothesis.*

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1. INTRODUCTION

Achieving gender equality and empowering all women and girls is one of the goals of the United Nations Sustainable Development Goals (SDG 5). The participation of women in the labour force is a key indicator of gender equality, economic empowerment of women and economic development of a country (Boruah & Das, 2022). It also determines the character of the socio-economic development of an area, as well as the quality of life of a society (Bori, 2022). The term 'labour force' refers to the segment of the population that is either working or actively looking for work, including soldiers and the jobless, but not including students, homemakers, or individuals not involved in economic activity. The labour force participation rate (LFPR) shows how many people of working age are either working or trying to find a job. The female labour force participation rate (FLFPR) tells us how many women are involved in work or searching for jobs. It is often used to understand women's well-being, independence, and position in society (Boruah & Das,

2022). In the Indian context, this pattern has been inconsistently observed, with a particularly low and variable FLFPR despite economic progress. The case of Assam, a socio-culturally distinct and economically transitional state in Northeast India, offers an important lens to examine this dynamic. Notably, Assam's FLFPR has seen significant fluctuations over recent years. As per the Annual Report on Periodic Labour Force Survey-2021-22, female labour force participation increases from 17.3% in 2020–21 to 20% in 2021–22, even as national participation decreases slightly from 24.2% to 24% in the same period. However, this rise was recorded in 2021–22, especially in rural areas, suggesting possible alignment with the upward phase of the U-shaped curve. Therefore, this paper seeks to analyze the extent to which the U-shaped hypothesis explains the trajectory of female labour force participation rate in Assam and to identify the key structural and socio-cultural factors influencing this pattern.

2. Review of Literature:

The U-shaped hypothesis of female labour force participation (FLFP) has been the subject of extensive academic research, especially in the context of developing economies.

Goldin (1995) laid the theoretical foundation for this hypothesis. Her study revealed that women's participation in the labour force initially declines as economies shift from agrarian to industrial structures due to the income effect and societal restrictions on market-based work. However, with further development, increased education, and the expansion of service-sector jobs, female participation begins to rise again, especially in socially accepted white-collar occupations.

Chapman (2015) investigates whether female labor force participation in the Middle East and North Africa (MENA) region follows the U-shape hypothesis, using panel data from 20 countries between 1990 and 2012. The study finds statistically significant evidence of a U-shaped relationship, suggesting that many MENA countries are positioned near the bottom of the curve, which explains their persistently low FLFP rates. Despite improvements in education and fertility decline, the paper argues that structural, cultural, and labor-market barriers continue to restrict women's economic participation.

In the Indian context, Lahoti and Swaminathan (2013) analyzed the relationship between economic growth and female labour participation. They found that despite urbanization and increasing education levels, FLFP declined, particularly in urban areas. This suggests that structural characteristics of growth, such as jobless growth, gendered job segregation, and insufficient childcare infrastructure play a significant role in shaping female employment trends, thereby supporting the U-shaped hypothesis but with critical nuances. Another study by Pandey (2022) in Bihar provides a district-level analysis of FLFP using factor analysis to identify key socio-economic determinants. It highlights a paradox where rapid economic growth has not translated into improved employment opportunities for women. Findings reveal that women often enter the workforce only when male labor is unavailable. Which reveals that women work participation is driven by "push-factor" rather than empowerment-driven engagement. Overall, the study underscores the need for inclusive policies that address structural barriers, gender norms, and limited job opportunities for women.

Several studies focus specifically on Assam, offering regional insights. Boruah and Das (2022) examined the socio-economic determinants of FLFP in the state and found evidence of a U-shaped relationship

between education and participation. Their study indicated that women with graduate-level education and above were more likely to be employed. However, the lack of adequate job opportunities remained a major barrier to higher FLFP. Similarly, Roy and Barua (2022), using PLFS 2018–19 data, identified key demographic and socio-cultural factors such as age, education, marital status, and social group as significant determinants of women's workforce participation. Their study revealed that women in rural Assam predominantly work in tea cultivation, while urban women are mainly employed in the education sector, pointing to occupational segmentation based on both geography and gender. Das and Mishra (2018) provided further evidence of regional disparities within Assam. They found higher FLFP in the eastern plains and tea plantation belts. Variables like education, land ownership, and the presence of young children in the household were significant, with caregiving responsibilities acting as a major constraint for women's employment—underscoring the ongoing tension between domestic roles and labour market engagement. Focusing on the Missing Tribe in Golaghat district, Bori (2022) highlighted the complex relationship between economic development and FLFP. The study revealed a U-shaped relationship with income: participation was higher at low-income levels but declined as income rose. Factors such as household size, education, indebtedness, and women's income significantly influenced participation. Importantly, the study concluded that economic development alone is insufficient; social and cultural norms must also be addressed to enhance FLFP.

In summary, the reviewed literature highlights the relevance of the U-shaped hypothesis across different regions and socio-economic contexts. While the trajectory of FLFP broadly supports the theory, its progression is deeply shaped by local structural factors, including education, occupational availability, cultural norms, and public policy. In Assam, these dynamics are particularly pronounced, making it a compelling case for examining how FLFP evolves in response to region-specific developmental transitions.

3. Objectives:

The analysis in this paper is guided by the following key objectives:

1. To understand the conceptual framework of U-shaped female labour force participation in the context of Assam.
2. To discuss the trend of female labour force participation in Assam during the periods of 2017-2021

3. To identify the factors related to female labour force participation in the state

4. Methodology:

The methodology of the paper is primarily descriptive and analytical. The required data is collected from secondary sources. These data are collected from the Census of India, NSSO, Government Publications, World Bank, NER Databank, books, research publications, institutional sources, newspapers and internet etc.

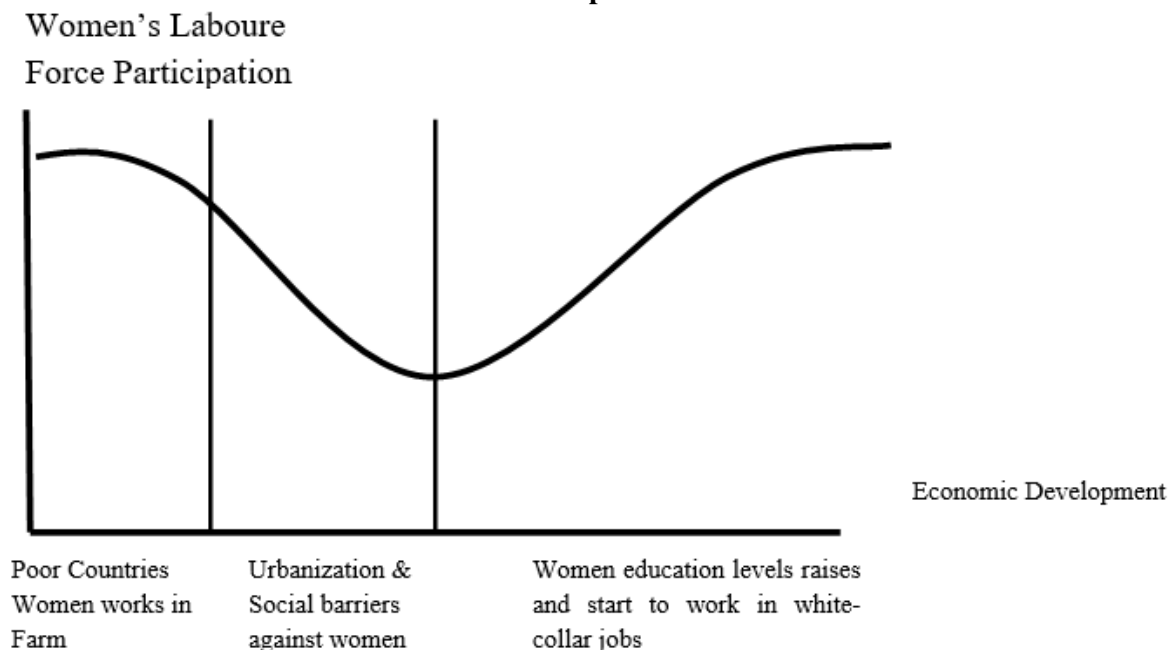
5. Analysis:

5.1. Theoretical Framework: The U-Shaped Hypothesis:

The U-shaped hypothesis of female labour force participation was first introduced by the prominent

American economist and Nobel Laureate Claudia Goldin. In her influential paper, "The U-Shaped Female Labor Force Function in Economic Development and Economic History", she formally developed the idea that female labour force participation follows a U-shaped trajectory as countries undergo economic development. Using historical data and cross-country analysis, Goldin (1995), demonstrated that women's participation in the workforce initially declines with economic growth but rises again at higher income levels. Her analysis highlights the critical role of social norms, education, fertility rates, and structural economic changes, such as the transition from agriculture to industry and then to services in shaping this pattern.

Figure 1: U-Shaped relationship between Women's Labour Force Participation and Economic Development.



Source: Internet

In Figure 1, the vertical axis measures the female labour force participation rate and the horizontal axis measures the level of economic development. The U-shaped curve shows the relationship between female labour force participation rate and economic development. At the initial or low development stage, female labour force participation is high due to agrarian economies. In this stage, women usually work in subsistence farming, family activities, or informal jobs. However, their work is often unpaid or poorly paid. In the second stage of development, as economies begin to grow and industrialize, male participation in formal wage employment increases, while female labour force participation tends to decline. This decline is driven by a combination of factors such as prevailing social norms, rising household incomes that reduce the economic necessity for women to work, and a shortage of suitable employment opportunities for women. Although education levels for women often improve during this stage, these gains do not always translate into increased workforce participation due to limited access to appropriate jobs and persistent gender barriers. Again in the third stage of economic development, female labour force participation begins to rise again. This rise is largely driven by the expansion of the services sector, which creates more white-collar job opportunities suited to women's increasing education level. At the same time, significant improvements in female education, shifting social attitudes towards gender roles, growing urbanization, and the availability of better childcare facilities collectively contribute to making it easier for women to enter and remain in the workforce.

5.2. Demographic Profile of India & Assam:

Table 1: Brief Population Profile of India & Assam

States/ Country	Total Population	Male population (in %)	Female population (in %)	Literacy Rate			Sex Ratio
				Male	Female	Total	
Assam	31205576	51.08	48.92	77.85	66.27	72.19	958
India	1210193442	51.54	48.46	82.14	65.46	74.04	943

Source: Census of India-2011

In Table 1, the demographic profile of Assam compared to India reveals both strengths and areas for improvement. Assam has a total population of 3.12 crore, with males constituting 51.08% and females 48.92%, reflecting a more balanced gender distribution than the national average of 51.54% males and 48.46% females. The state's sex ratio stands at 958 females per 1000 males, which is higher than the national average of 943, indicating relatively better gender equity. In terms of literacy, Assam records a total literacy rate of 72.19%, slightly lower than the national average of 74.04%. While male literacy in Assam (77.85%) falls behind the national average of 82.14%, female literacy in the state (66.27%) is marginally higher than the national figure of 65.46%. These figures suggest that Assam, despite facing challenges in overall educational attainment, shows encouraging signs of narrowing the gender gap in literacy and achieving a more balanced sex ratio, laying the groundwork for more inclusive socio-economic development.

5.3. Trends in Female Labour Force Participation in India:

In this paper labour force participation rate is analyzed with usual status. The usual status refers to the economic activity status of a person over the past 365 days preceding the survey. A person is classified as employed, unemployed, or outside the labour force based on where they spent most of their time during the last one year. PLFS uses two versions of usual status- (i) Usual principal status (UPS) and (ii) Usual principal and subsidiary status (ps+ss). The activity on which a person spent the majority (more than 6 months) of their time during the last 365 days. On the other hand usual principal and subsidiary status includes the *principal status*, and the *subsidiary status*, which means economic activity done for at least 30 days (one month) in the last 365 days in addition to the principal activity.

Table 2, Labour force participation rate (LFPR in %) in India according to usual status: All age groups (0+)

Year	Rural			Urban			Rural+ Urban		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
2017-18	54.9	18.2	37.0	57.0	15.9	36.8	55.5	17.5	36.9
2018-19	55.1	19.7	37.7	56.7	16.1	36.9	55.6	18.6	37.5
2019-20	56.3	24.7	40.8	57.8	18.5	38.6	56.8	22.8	40.1
2020-21	57.1	27.7	42.7	58.4	18.6	38.9	57.5	25.1	41.6
2021-22	56.9	27.2	42.2	58.3	18.8	39.0	57.3	24.8	41.3

Source: Annual Report on Periodic Labour Force Surveys (PLFS)-2021-22

Table 2 shows the Labour Force Participation Rate (LFPR) in India, based on usual status across all age groups (0+), from 2017–18 to 2021–22, reveals significant upward trends regarding labour engagement across rural, urban, and national levels. Nationally, the overall LFPR (Person) has witnessed a steady increase from 36.9% in 2017–18 to 41.3% in 2021–22, indicating a sustained improvement of 4.4 percentage points. This rise suggests the influence of multiple factors, including gradual economic recovery, increased labour absorption in agriculture and informal sectors, and the post-pandemic (COVID-19) compulsion for additional household earners to engage in work.

Male LFPR has shown only modest fluctuations during this period. Rural male LFPR increased slightly from 54.9% to 56.9%, while urban male LFPR rose from 57.0% to 58.3%. The combined (rural + urban) male LFPR edged upward from 55.5% to 57.3%. These figures reflect the stability of male participation in the labour market, with a narrow rural-urban gap and limited volatility, indicating that male engagement in economic activity has remained largely consistent across regions. In contrast, female LFPR has shown a marked and sustained increase. National female LFPR raises from 17.5% in 2017–18 to 24.8% in 2021–22, an improvement of 7.3 percentage points. The rise is particularly notable in rural areas, where female participation rose sharply from 18.2% to 27.2%, a gain of 9 percentage points. It reflects a strong surge in women's involvement in agricultural work, self-employment, and informal occupations. The urban female LFPR also increased from 15.9% to 18.8%, indicates that the growth remains modest compared to rural areas. This substantial rise in rural

female LFPR may be attributed to the growth of informal or self-employment opportunities, enhanced implementation of schemes like MGNREGA, pandemic-induced economic compulsions, and a gradual shift in socio-cultural norms favouring women's economic involvement.

The rural-urban divide remains evident throughout the period, with rural areas consistently exhibiting higher LFPR for both males and females. The gap is particularly wide for women, likely due to the predominance of agricultural and informal sector jobs in rural regions that are more accessible to women. However, urban female LFPR remains comparatively stagnant, highlighting the skill requirements, childcare constraints, and limited flexible employment options.

Therefore, the LFPR trends indicate a positive trajectory in India's labour market, primarily fueled by a remarkable rise in female labour force participation, especially in rural settings. While male LFPR has remained relatively stable, the increase in female LFPR reflects a promising shift toward gender inclusion in the workforce. However, persistent challenges such as low urban female participation underscore the importance of continued investments in skill development, inclusive employment policies, education, and gender-sensitive planning to sustain these gains and further narrow gender and regional disparities in the labour market.

5.4. Trends in Female Labour Force Participation in Assam:

Table 3: Labour Force Participation Rate (LFPR in %) in Assam according to usual status (all ages, 0+)

Year	Rural			Urban			Rural+ Urban		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
2017-18	59.1	9.5	35.7	61.0	12.4	36.9	59.3	9.8	35.8
2018-19	57.3	9.5	34.8	56.5	10.6	34.7	57.2	9.6	34.8
2019-20	55.2	12.1	34.3	59.0	14.7	36.7	55.6	12.4	34.6
2020-21	59.5	18.9	39.8	60.0	16.0	38.8	59.5	18.6	39.7
2021-22	56.3	21.3	39.4	59.0	18.4	39.3	56.6	21.0	39.4

Source: Annual Report on Periodic Labour Force Surveys (PLFS)-2021-22

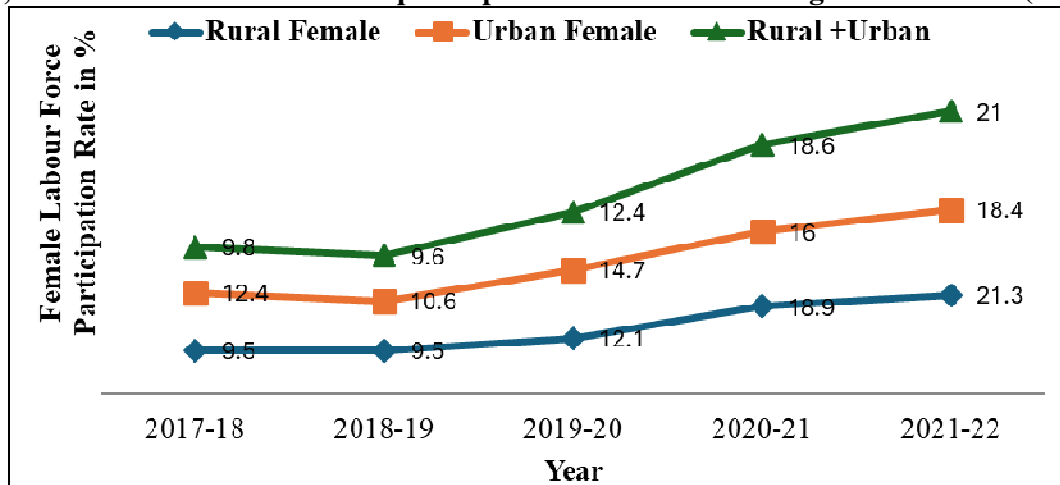
Table 3 presents the Labour Force Participation Rate (LFPR) in Assam across rural, urban, and combined (Rural+Urban) sectors from 2017–18 to 2021–22. The data reveals a moderate upward trend in overall labour force participation, rising from 35.8% in 2017–18 to 39.4% in 2021–22, indicating a gradual strengthening of labour market engagement in the state. The increase is particularly notable from 2019-20 onward, reflecting post-pandemic adjustments in household employment patterns. During this period, male LFPR in Assam shows some fluctuations. Male LFPR in rural areas declined from 59.1% to 55.2% between 2017–18 and 2019–20, before rising sharply to 59.5% in 2020–21 and stabilizing at 56.3% in 2021–22. The urban male participation also shows a mild decline from 61% in 2017-18 to 59% in 2021-22. These trends suggest that male participation is relatively steady, with minor variations likely linked to short-term economic disruptions such as the COVID-19 pandemic. On the other hand, the female LFPR exhibits a clear and substantial increase. The rural female LFPR rose significantly from 9.5% in 2017–18 to 21.3% in 2021–22, more than doubling within five years. Similarly, urban female LFPR increased from 12.4% to 18.4% in the same period, although the rise is less pronounced than in rural areas. This steady growth reflects increased female engagement in agricultural, informal, and self-employment activities, combined with pandemic related economic pressures that led more women- especially in rural Assam, to enter the labour market.

From the table 3 it has been clear that there is a rural-urban divide in LFPR in Assam throughout the period, consistent with national patterns. The rural areas of Assam consistently shows higher LFPR for both males and females compared to urban areas, driven by greater availability of flexible and informal work opportunities in rural settings. Urban female LFPR remains comparatively lower, indicating continued constraints such as limited formal job availability, safety concerns, and higher entry barriers for women in urban labour markets.

Therefore, in Assam the LFPR trends highlight a positive but uneven trajectory in labour market. The most important development is the significant rise in female labour force participation, especially in rural regions- which pushes the overall LFPR upward despite fluctuations in male participation. However, the relatively low urban female LFPR underscores the need for targeted policies aimed at expanding women's access to quality employment, skill development, and supportive work environments, ensuring that the gains in rural areas translate into broader gender-inclusive growth across the state.

5.5. Position of Assam on the U-Shaped Curve:

Figure 2, Trend in female labour force participation in Assam according to usual status (all ages, 0+)



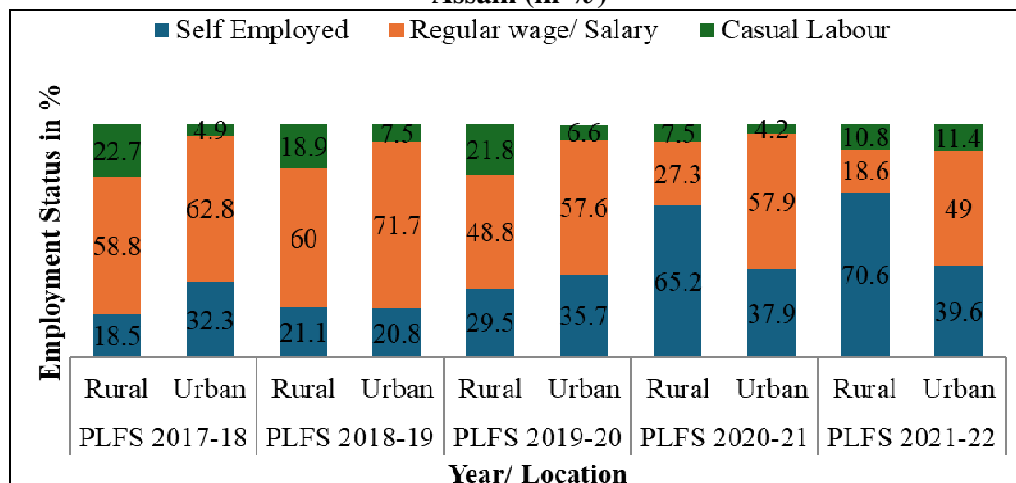
Source: Source: Annual Report on Periodic Labour Force Surveys (PLFS)

In figure 2, the trend shows a steady and consistent rise in female labour force participation across rural, urban, and combined areas of Assam from 2017–18 to 2021–22. The rural female participation increased from 9.5% to 21.3%, urban female participation from 12.4% to 18.4%, and the combined rate from 9.8% to 21% over the same period. Although this graph does not display a full U-shaped curve on its own, the upward movement is significant for interpreting the U-shaped hypothesis.

The data in the graph captures the rising segment of the U-shaped curve, which suggests that the state may be transitioning toward a phase where women increasingly re-enter the workforce. Several structural changes likely contribute to this rise such as expansion of employment opportunities in services, growth of self-employment and informal sector participation, increased educational attainment among women, and income pressures during and after the COVID-19 period that encouraged more women to engage in economic activities. The sharp increases during 2020–21 and 2021–22 particularly reflect this shift, with rural female LFPR rising markedly from 12.1% to 21.3%, indicating both distress-driven participation and gradual economic diversification. Therefore, the observed upward trajectory in FLFP in Assam aligns with the right-hand upward arm of the U-shaped hypothesis, suggesting that Assam is moving into a stage where economic participation of female is increasing as development processes evolve. The pattern strongly indicates that women's labour force engagement is rising in response to changing socio-economic conditions, consistent with the theoretical expectations of the U-shaped relationship.

6. Distribution of Women Workers by Status of Employment:

Figure: 3 Distribution of Female workers in usual status (ps+ss) by broad status of employment in Assam (in %)



Source: Calculated from PLFS

Figure 3 illustrates the changing distribution of employment categories such as self-employed, female workers in Assam across three major regular wage/salary workers, and casual labourers for

both rural and urban areas. The most striking trend is the sharp rise in self-employment among rural women, which increased from 18.5% in 2017-18 to 70.6% in 2021-22, especially after 2019-20. Urban self-employment also increased moderately, reaching 39.6% in 2021-22. This reflects a growing shift of women toward small-scale, home-based, and informal entrepreneurial activities.

In contrast, regular wage/salaried employment declined steadily, particularly in rural areas where it fell from 58.8% to 18.6% over the period. Urban salaried employment also decreased from 62.8% in 2017-18 to 49% in 2021-22, suggesting limited availability of stable formal-sector jobs for women or a movement away from wage employment after the pandemic.

The share of casual labour declined significantly in rural areas from 22.7% to 10.8%, while urban casual employment fluctuated but ultimately rose to 11.4% in 2021-22. Overall, the figure indicates a structural shift in women's employment patterns in Assam, marked by a dramatic rise in rural self-employment, decline in regular wage/salary jobs, and reduced dependence on casual labour. These changes indicate increasing informalisation of female work and a growing reliance on self-generated livelihoods, especially in rural Assam.

7. Causes of increase in female labour force participation in Assam:

1. **Educational attainment:** A steady rise in the educational levels of women has increased their employability. Since, more educated women are entering service-sector and white-collar jobs, consistent with the upward phase of the U-shaped hypothesis.
2. **Economic Necessity:** Financial constraints, low per-capita income, and unstable agricultural earnings push women, especially in rural households to seek income-generating activities. Again, post-pandemic economic pressure increased women's labour supply.
3. **Government schemes and SHGs:** State and central government interventions such as *National Rural Livelihood Mission (NRLM)*, microfinance, and self-help group (SHG) initiatives have empowered women economically. By providing credit, training, and market linkages, these programmes enable women to take up entrepreneurial and income-generating activities, leading to higher LFPR.
4. **Urbanization & service sector expansion:** The growth of urban centres has opened opportunities in health, education, hospitality, and retail.

Women have increasingly entered jobs as teachers, nurses, retail workers, and domestic workers. Expansion of the tertiary sector has been particularly attractive to educated women seeking regular salaried employment.

5. **Changing social norms:** Traditional restrictions on women's work are weakening, especially in tribal and urban communities where female participation is more accepted. Women now have greater autonomy in deciding how to spend their earnings, which not only motivates participation but also enhances their role in household decision-making.

6. **Preference for Flexible/Part-Time Work:** Many women engaged in unpaid domestic duties are now willing to take up part-time or home-based work. Flexible opportunities allow women to balance household responsibilities with economic activities.

8. Findings:

The findings of the study are as follows-

1. The rise in female LFPR, particularly in rural areas, could boost the economy of Assam if these jobs are productive and sustainable. Basically, increases in opportunities in agriculture, self-employment, or government schemes promoting female employment in Assam.
2. Rural areas of Assam show higher LFPR growth than urban areas, likely due to the informal and agricultural nature of rural economies, which absorb more labour, especially females.
3. After the COVID-19 economic distress led many women to enter the labour force, which increases female LFPR.
4. Male participation remains relatively high and stable, with less variation, indicating a steady male labour market.
5. Sharp increase in self-employment among rural women (from 18.5% to 70.6%) and decline in regular wage/salaried jobs indicates limited formal sector absorption.
6. The rising female literacy rate reduces the fertility rate and increases the opportunities for educated women to join the labour force in response to growing demand in the services sector (Bori, 2022).

9. Policy Implications

To accelerate FLFP and push Assam into the upward part of the U-shaped curve, the following steps are critical:

1. Provide skill development and training facilities according to the preferences of women to acquire the opportunities of the local market.

2. Microfinance and SHG support to women can promote female entrepreneurship and empowerment.
3. It is necessary to provide improved childcare facilities and safety to the women by the Government and employers.
4. Educational Reforms which focus on employability and vocational training for women.
5. It is necessary to enhance formal job creation for women through encourage industries with high female employment potential (textiles, food processing, healthcare, and education) and provide incentives for firms hiring women.
6. Remove cultural constraints, such as patriarchal norms and stigma around certain types of work inhibit female participation.
7. Diversification of the agricultural sector is necessary to absorb the rising labour force in the economy.

10. Conclusion:

This paper finds that female labour force participation in Assam follows a U-shaped pattern, with recent data indicating a shift toward the upward phase of the curve. The rise in FLFP, especially in rural areas, is influenced by improved literacy, economic necessity, government schemes, and growing informal sector opportunities. As noted by Das and Mishra (2018), the nature of Assam's rural labour market, along with improved education and skill development, plays a crucial role in enhancing female employment. However, challenges like low urban participation, social norms, and limited formal employment remain our concern. To sustain this progress, Assam needs targeted policies focusing on education, skill development, childcare support, and cultural change to ensure inclusive and gender-balanced economic growth. Therefore, both macroeconomic planning and micro-level social reforms are essential to fully realize the potential of Assam's female labour force participation.

References

- [1] Boruah, C., & Das, D. (2022). *Female Labour Force Participation Rates in Assam : Trends, Composition*. 16(1), 139–157. <https://doi.org/10.1177/09737030221074557>
- [2] Bori, B. (2022). Development level of Women Labour Force Participation in Golaghat District, Assam. *International Journal of Advanced Research in Engineering and Technology (IJARET)*. 13 (11), 34–44.
- [3] Chapman, K. (2015). Economic Development and Female Labor Force Participation in the Middle East and North Africa: A Test of the U-Shape Hypothesis. *Gettysburg Economic Review*. Vol.8, 5-22. <https://cupola.gettysburg.edu/ger/vol8/iss1/3>
- [4] Das, K. S., & Mishra, D. K. (2022). Woman and work in rural Assam: pattern and determinants. *Journal of Social and Economic Development*. <https://doi.org/10.1007/s40847-018-0062-6>
- [5] Goldin, C. (1995). “The U-Shaped Female Labor Force Function in Economic Development and Economic History.” *Investment in Women’s Human Capital and Economic Development*, University of Chicago Press.
- [6] Lahoti, R. & Swaminathan, H. (2013). Economic Growth and Female Labour Force Participation in India. *WORKING PAPER NO : 414. Indian Institute of Management Bangalore*. 1–42.
- [7] Ministry of Statistics and Programme Implementation. (2022). *Annual report: Periodic Labour Force Survey (PLFS), 2021–22*. Government of India. <https://www.mospi.gov.in>
- [8] Office of the Registrar General & Census Commissioner, India. (2011). *Census of India 2011: Assam, provisional population totals*. Ministry of Home Affairs, Government of India. <https://censusindia.gov.in>
- [9] Pandey, A. (2022). Cross-Sectional Data Analysis of Female Labor Force Participation Using Factor Analysis: A Case Study of Bihar State, India. *Promoting Statistical Practice and Collaboration*. 183-192. DOI:10.1201/9781003261148-19
- [10] Roy, P., & Barua, A. (2022). *Women ’ s Workforce in Assam : Insights on Composition and Determinants from PLFS Data*. <https://doi.org/10.1177/09737030221074313>
- [11] Verme, P. (2015). *Economic development and female labor participation in the Middle East and North Africa: a test of the U-shape hypothesis*. 1–21. <https://doi.org/10.1186/s40175-014-0025-z>
- [12] Verick, S. (2014). “Female labor force participation in developing countries.” *IZA World of Labor*.
- [13] <https://compass.rauias.com/current-affairs/female-labour-force-participation/>