
FEMALE LABOUR FORCE PARTICIPATION IN INDIA: A DECADAL ANALYSIS OF SOCIO-ECONOMIC DETERMINANTS AND POLICY INTERVENTIONS

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ABSTRACT

Women's economic empowerment is said to be an engine of economic growth for any country. Empowering women economically is the main cornerstone to achieve the 2030 agenda for sustainable development goals, specifically terminating poverty (goal 1), ensuring health to all (goal 2), to achieving gender equality (goal 5), to promote productive employment (goal-8) and goal 10 on reducing inequalities. (UNDP, 2015)

In India women's labour Force Participation Rate (LFPR) is 29.4% (aged15-59) in 2021-22 compare to global average of 50.13% in the same year. India's LFPR of women is very low compared to the global average. (Ministry of Women and Child Development, 2021)

The paramount objective of this paper are to understand the trends in female labour force participation from the past 10 years in India. Another main objective is to find the main reasons for the low female LFPR in India. The study mainly focused on the analysis of the relationship that exists between female literacy rate, TFR, total expenditure on education & LFPR. This study focuses on the central schemes' contribution in order to promoting the Female LFPR in India from past 10 years.

The study mainly focuses on the analysis of impact of women literacy rate, TFR, educational expenditure on female LFPR in India. The study aims to explore the strengths and weaknesses of the major women's empowerment schemes in India and also intends to find and analyze the structural barriers for the low female participation rate in India.

Keywords

Economic empowerment, labor force participation rate, TFR, women empowerment schemes, gender inequality, women entrepreneurship.

INTRODUCTION:

The labour force participation rate of women in India has been a topic of significant discussion and concern for all time. Because 48.4 percent of India's population is female (MoSPI, 2025), but their contribution towards GDP is significantly low. The concept of "women empowerment" is really multidimensional and many factors are either directly or indirectly influencing women empowerment. The main focus of this paper is to study and analyze the prime pillars of economic empowerment of women, especially female labor force participation rate.

One of the paramount factors is female LFPR. The main reason for selecting the factor is that it has a tremendous linkage effect and is co-integrated with several economic as well as social indicators.



The female LFPR of India is linked with several Economic, social and health indicators. The main assumption of the study is that “an Increase in the labor force participate rate of women leads to an increase in various dimensions of women empowerment”

REVIEW OF LITERATURE

Deshpande & Jitendra V. Singh focused on the decline in women’s labour force in India, which is primarily due to demand-side constraints rather than supply-side demographic characteristics. The analysis is based on the data from 2016 to 2019. Statistical methods like two-way Fixed effect (TWFE) estimation and entropy balancing (EB) for evaluating child birth impact. (Deshpande & Jitendra, 2021). Syamntak & Subhanil unveiled that there is a U-shaped relationship between women’s LFPR and education and the Income effect dominates over education in determining Female LFPR. Logistic regression model used to compute predicted probabilities of women participating in the labour market. (Syamantak & Subhanil, 2022). Biswas has revealed the low female labour force participation rate that has dropped over the years. The study also focused on the Female workforce participation varies across the states. The study used secondary data to understand labour force participation rates. (Biswas, 2024). Ramun Prasad and Deepak Kumar revealed that women’s reservation policies and well-being schemes have improved the female labour force participation rate in Bihar. The analysis is based on the descriptive statistics, considering socio-economic factors like education and employment status. (Ramun & Deepak Kumar, 2025). Nikita and Anand Kumar addressed the challenges and opportunities to unlock the full potential of women as agents of change and progress. (Nikita & Anand, 2025)

And the present study is an improvement over the previous studies in analysing the impact of various factors like women’s literacy rate, TFR, educational expenditure, and central government schemes on female LFPR based on empirical data from 2014 to 2024.

Methodology:

The study is based on secondary data and covered a period from 2014 to 2024. The study adopted a descriptive and analytical research design to analyse the role of Central Government schemes in promoting female LFPR in India. The study used various analytical tools such as trend analysis, comparative analysis, and econometric methods to evaluate the contribution of policy interventions over the past decade. To examine the relationship between female literacy rate, TFR, total expenditure on education, and Female LFPR, a multiple linear regression model was applied.

The followings are the main objectives of the study:

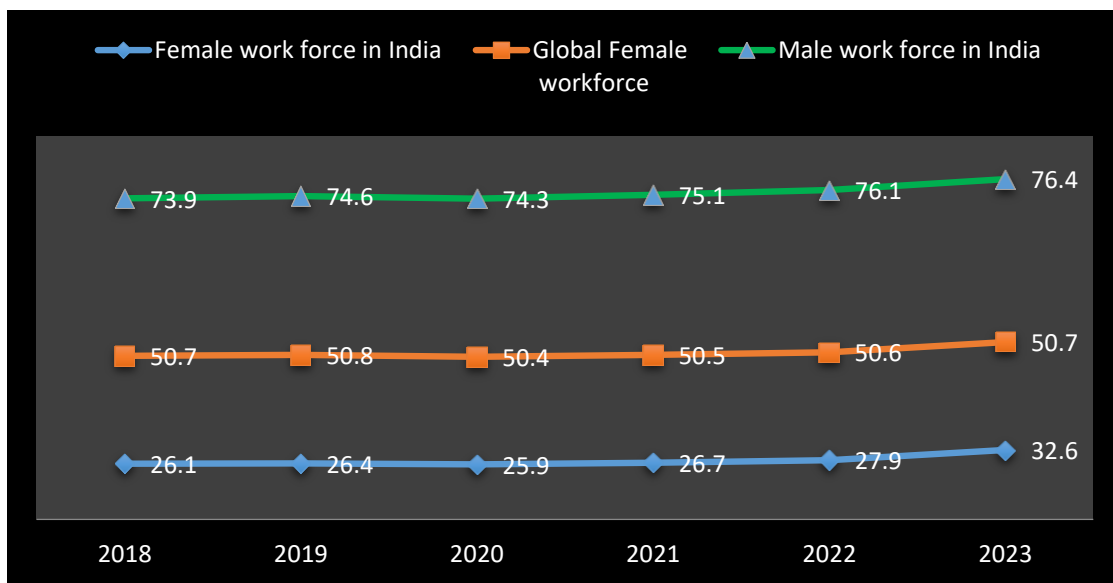
- To present recent trends of Indian female LFPR, comparing with global female LFPR and Indian male LFPR
- To analyze the prime factors which are influencing on female LFPR through graphical representation.

- To analyze the role of Central Government initiatives/programs/Schemes in order to increase the female LFPR(from 2014to 2024)
- To analyze the impact of female literacy rate, TFR, and expenditure on education on women's LFPR.

Recent trends and analysis of female labour force participation rates in India.

This study intended to analyze the recent trends in female labor force participation through various dimensions.

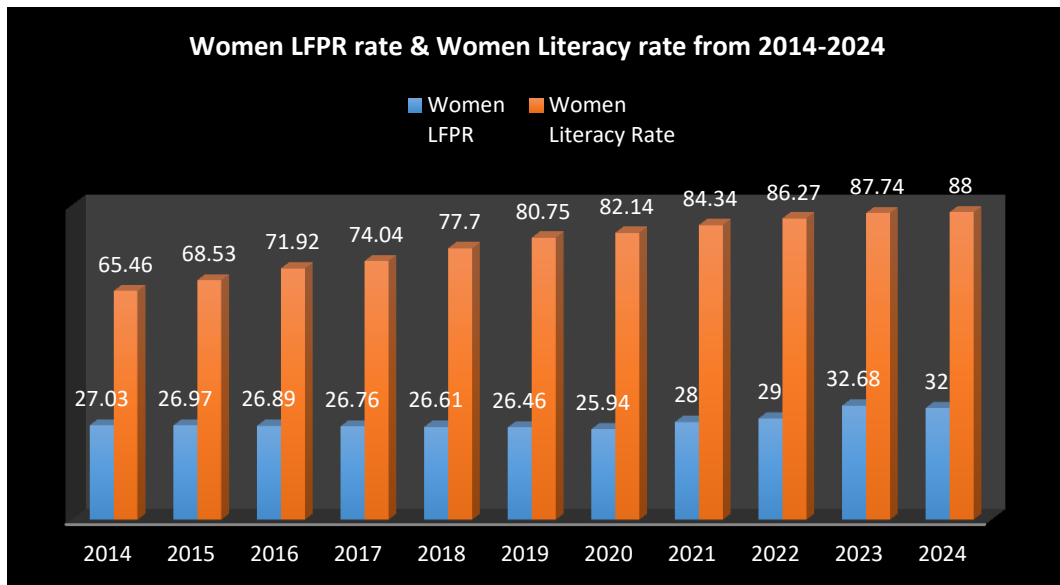
Comparison of indian women lfpr with global female lfpr and indian male lfpr



- The above graphical representation focusing on the low LFPR of Indian women compared to global women LFPR and male LFPR in India.
- The study can identify the year 2020 as an inflection point, since after 2020 the women's LFPR in India has increased significantly.
- The study has focused on the negative impact of Covid-19 on women LFPR in India.
- Post-Covid period is showing a positive insight on the LFPR of all categories.

Impact of Female Literacy Rate on Female Labour Force Participation: A Regression Analysis.

The study of relationship between the female workforce rate and female education level is always an essential analysis for understanding the structural transformation in the composition of the female workforce.



Regression analysis through SPSS

R Square	Adjusted R Square	Std. Error of the Estimate
.638	.407	1.85511

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	13.453	5.895		2.282	.048
Female Literacy rate	.185	.074	.638	2.484	.035

Takeaways:

- The regression equation, Female LFPR=13.453+0.185(Female Literacy rate)
- R-value 0.638, indicates a moderately strong positive correlation between female Literacy Rate and Female LFPR
- R Square value- 0.407 explained 40.7% of variation in Female LFPR by Female Literacy Rate.
- Overall, the model indicates a reasonably good fit, in other words that female literacy plays a vital role in the determining female LFPR.
- Intercept (α) value 13.453 means that when the female literacy rate is zero, the expected Female LFPR would be 13.45%

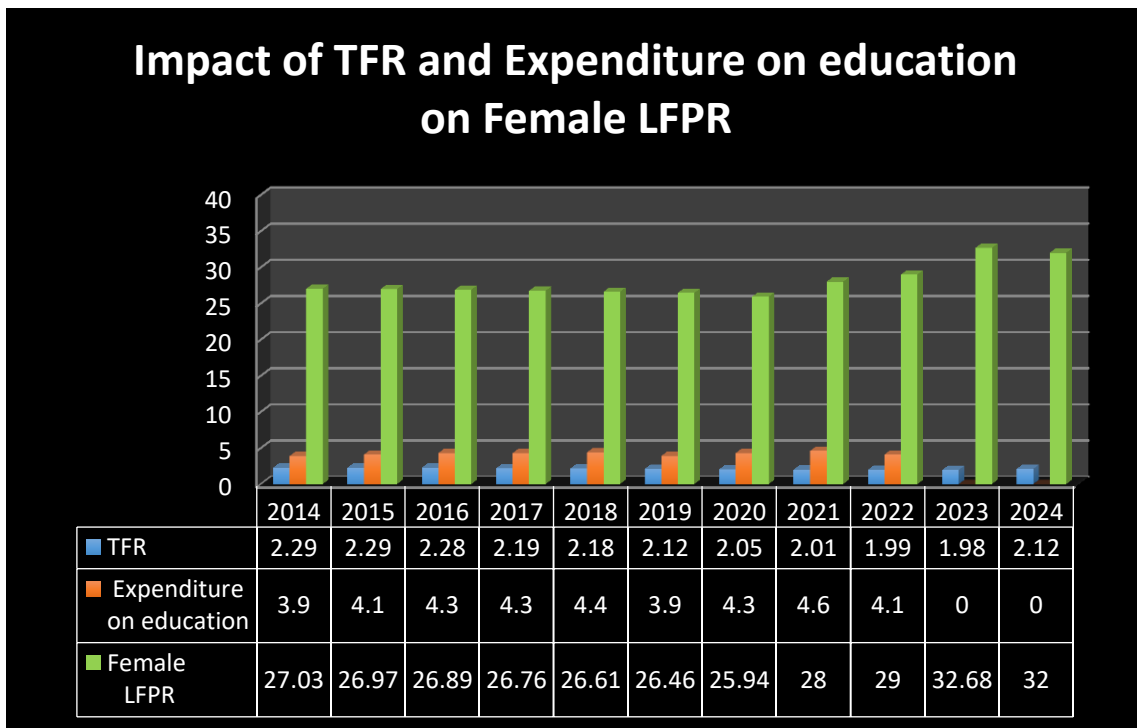
- The Standardized coefficient (β) value of 0.638 indicates a strong positive relationship between female literacy and female labor participation.
- The Unstandardized coefficient (β) value of 0.185 explains that a one percentage point increase in female literacy rate leads to 0.185 percentage points increase in female LFPR.
- The p-value of 0.035 is less than the 5 percent significant level ($p < 0.05$). Since the null hypothesis has been rejected and confirming that female literacy has a statistically significant impact on female LFPR.

Policy Recommendations Based on Regression Analysis:

- The result is statistically significant and supports the positive relationship between female literacy rate and female LFPR. Since improvement in female literacy rate is the key factor to enhance women’s participation rate in the labour market.
- Policymakers should prioritize investments in female education as a long-term strategy for inclusive growth of the economy.
- Particularly skill-based education must be given and encouraged at the secondary and higher secondary levels.
- Linking literacy initiatives with skill development, digital literacy programs, and professional training programs can further improve women productivity and employability.

The main jest is that targeted educational policies are essential for increasing women’s labour force participation rate in India and achieving gender-inclusive economic growth.

Impact of Total Fertility Rate and Education Expenditure on Women’s Labour Force Participation



Regression analysis through SPSS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	49.549	5.470		9.058	.000
TFR	-5.376	2.642	-.281	-2.035	.076
Expenditure on education	-2.573	.436	-.813	-5.894	.000

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
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1 (Constant)	49.549	5.470		9.058	.000
TFR	-5.376	2.642	-.281	-2.035	.076
exp_on_education	-2.573	.436	-.813	-5.894	.000

Takeaways:

- Regression equation is $Women\ LFPR = 49.549 - 5.376(TFR) + 2.573(\text{Total expenditure on education})$
- The ANOVA results indicate that the overall regression model is statistically significant.
- Since $p < 0.05$, the null hypothesis is rejected. This means that the independent variables Expenditure on education and Total Fertility Rate—jointly have a statistically significant effect on Women’s Labour Force Participation Rate.
- R square value is 0.857, indicates that approximately 85.7% of the variation Women LFPR is explained by expenditure on Education and total fertility rate (TFR)
- The estimated regression equation is:
 - a. The coefficient of TFR is -5.376, meaning that a one-unit increase in fertility rate leads to a decrease of 5.376 percentage points in Women LFPR, holding other variables constant.
 - b. However, the p-value is **0.076**, which is greater than 0.05. Therefore, the effect of fertility rate is not statistically significant at the 5% level.
 - c. The coefficient of expenditure on education is 2.573, implying that a one-unit increase in education expenditure leads to a 2.573 percentage point increase in Women LFPR, holding TFR constant.
 - d. The p-value is **0.000**, which is less than 0.01, indicating that the variable is highly statistically significant.

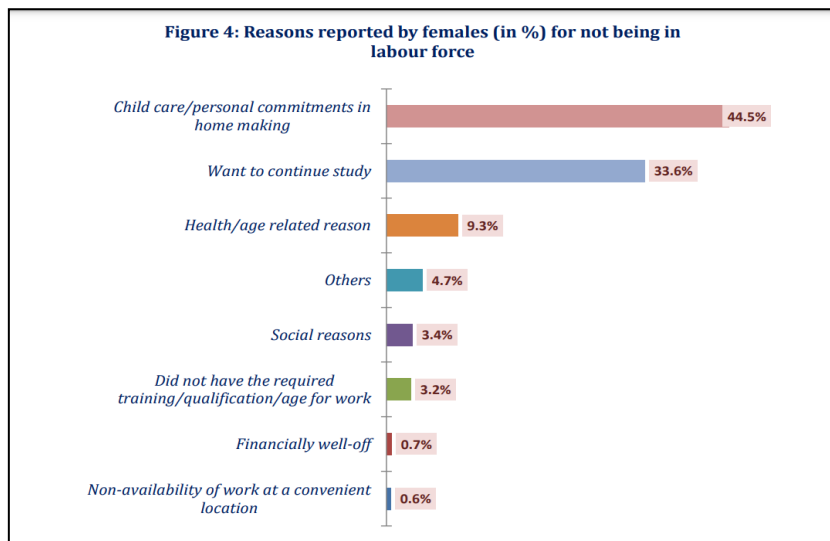
Policy implications based on the result of regression analysis:

Since expenditure on education has a positive effect on Women LFPR, policy focus should include:

- a. Policy makers should focus on the enhancing female enrolment and completion rates through scholarships and incentives.

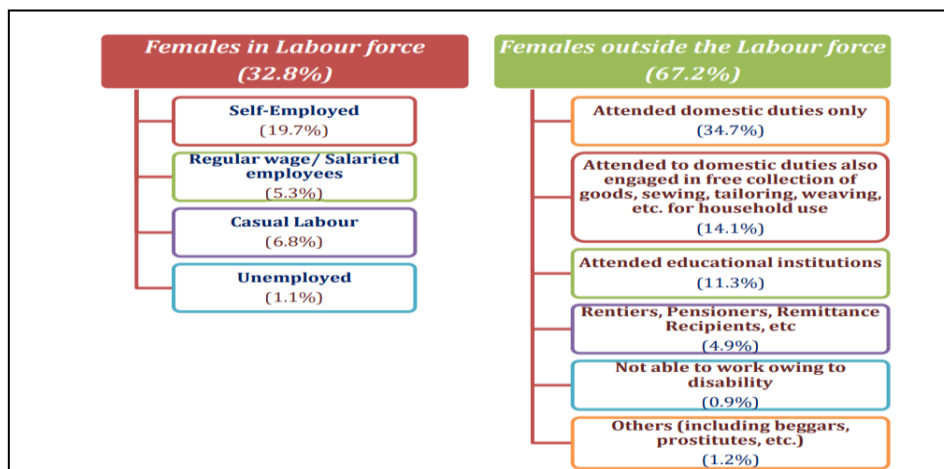
- b. Strengthening skill development initiatives through government schemes.
- c. Expand the accessibility of higher education and technical education to women of marginal class.
- d. The result of regression model confirms that TFR negatively impact on women LFPR due to child care and family responsibilities.
- e. Government policies strengthen the child care services, ensure effective enforcement of maternity benefits through government schemes.

Reasons reported by females for not being in labour force:



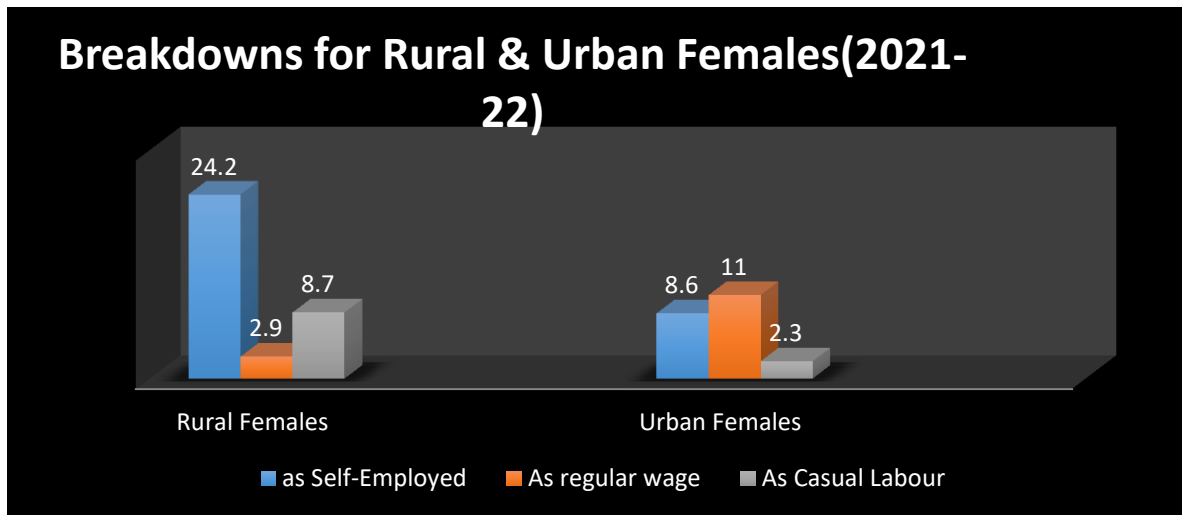
The above data was collected by the women who are outside the labour force in India. Almost 45% of women were not participants of labour force because of Childcare & personal commitments. Nearly 34% women had given the reason “want to continue study”. An amazing factor is that the reason for the lack of financial support is not explicated in the survey.

Breakup for total females of age 15 years & above in India



(MoSPI, Periodic Labour Force Survey, 2023)

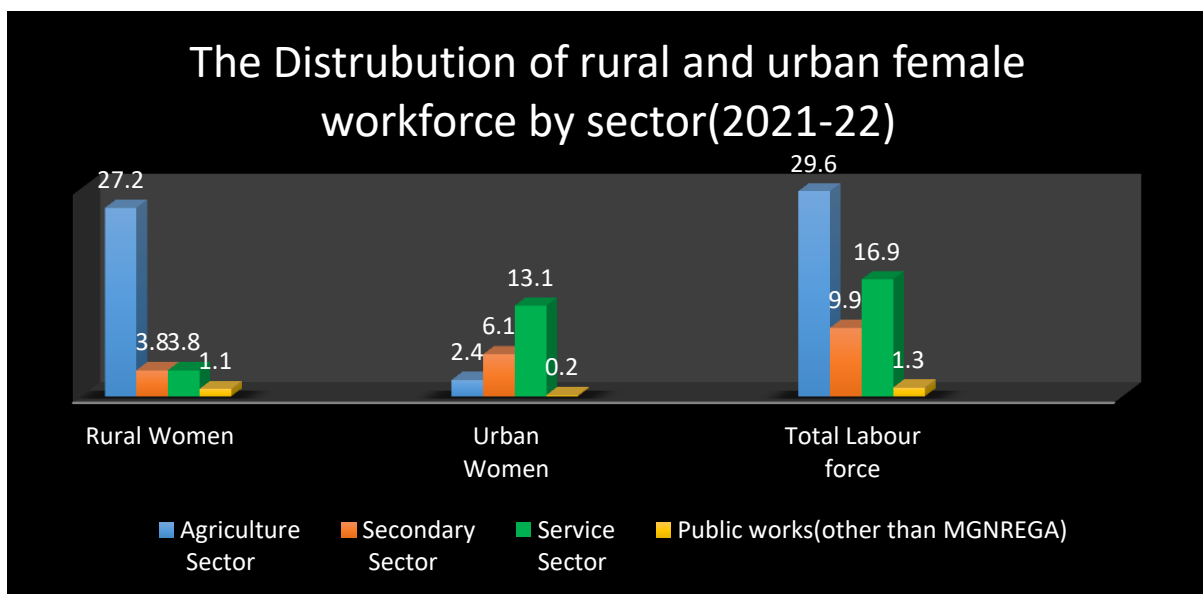
According to the above figure, 32.8% of total women of age 15 years and above are participating in the labour force and the remaining 67.2% of women are outside the labour force, and this report focused on the female workforce skewed towards self-employed and salaried employees percentage (5.3%) is comparatively low. It clearly shows that nearly 12% of the female workforce is appears as a temporary structure of work force. Nearly 49% of females outside the labour force engaged in domestic duties only.



(MoSPI, Periodic Labour Force Survey, 2023)

As per the PLFS data, rural female’s percentage-wise participation in self-employment was comparatively higher than urban females’ in 2021-22. The main reason for this difference is, rural females are more actively participated in the agriculture sector. At the same time, urban females’ participation in the category of regular wage is comparatively higher than rural women.

Sector wise Analysis of female LFPR in 2021-22



(MoSPI, Periodic Labour Force Survey, 2023)

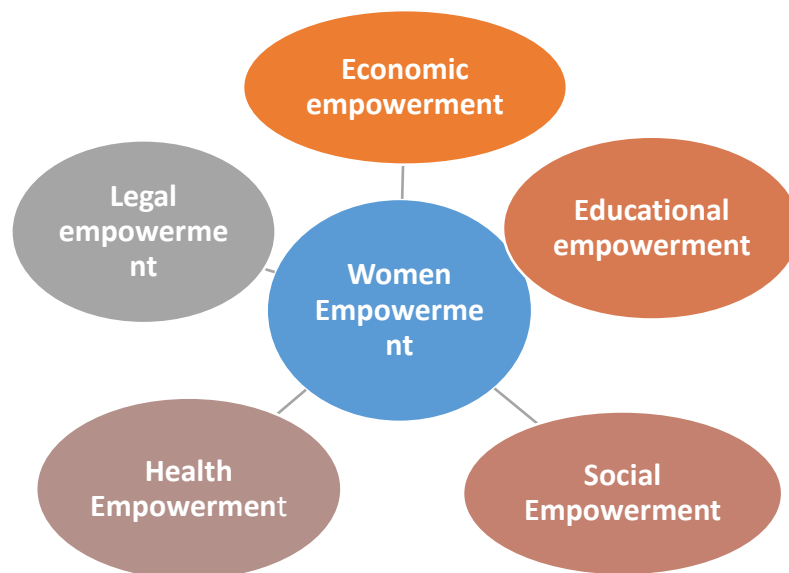
The above data released by MoSPI and the report revealed that rural women were highly concentrated in the agriculture sector and this sector represents both seasonal and casual labour. On the other side, urban women are highly engaged in the service sector and this sector mainly requires the parameters like skill and education. The graph is indicating the heterogeneity in the distribution of the female labour force between rural and urban female.

The role of Central Government schemes for women's economic empowerment:

While economic growth can potentially create more opportunities for women's employability. There is a need for policies that address gender disparities and empower women economically.

This paper is an attempt to look into central government schemes to improve the female LFPR in India. The Central government has introduced several schemes and initiatives aimed at promoting women's empowerment across various sectors. Here are some major Central Government Schemes:

Dimensions of Women empowerment schemes



Women Empowerment is a multidimensional concept. Simply, the Central Government has enforced several schemes to achieve its goal. But here the study is mainly focusing on the economic empowerment programmes which directly contribute to increase the female LFPR in India. Remaining components are indirectly contributed for the same.

Major schemes initiated by the Central Government for women's economic empowerment.

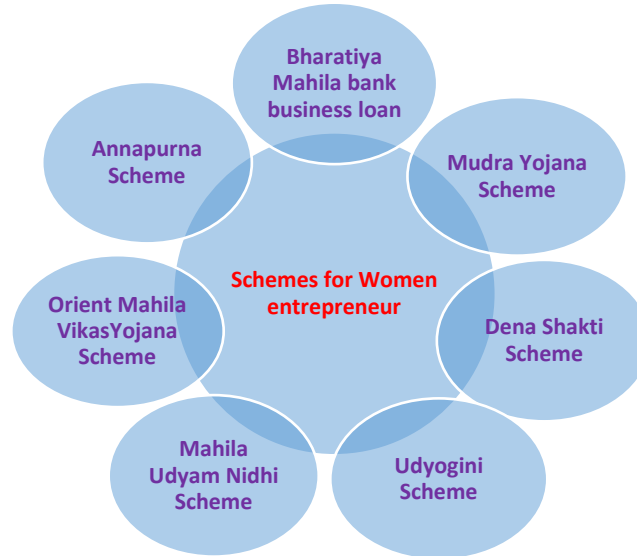
The central government has launched numerous programmes to empower different categories of women. Let's have an overview of those schemes.

The study of schemes mainly consists of two phases.

PHASE I: highlighted the objectives & importance of the schemes.

PHASE II: Discussed the barriers for implementing the schemes & possible remedies.

1. The Central Government schemes for women entrepreneur



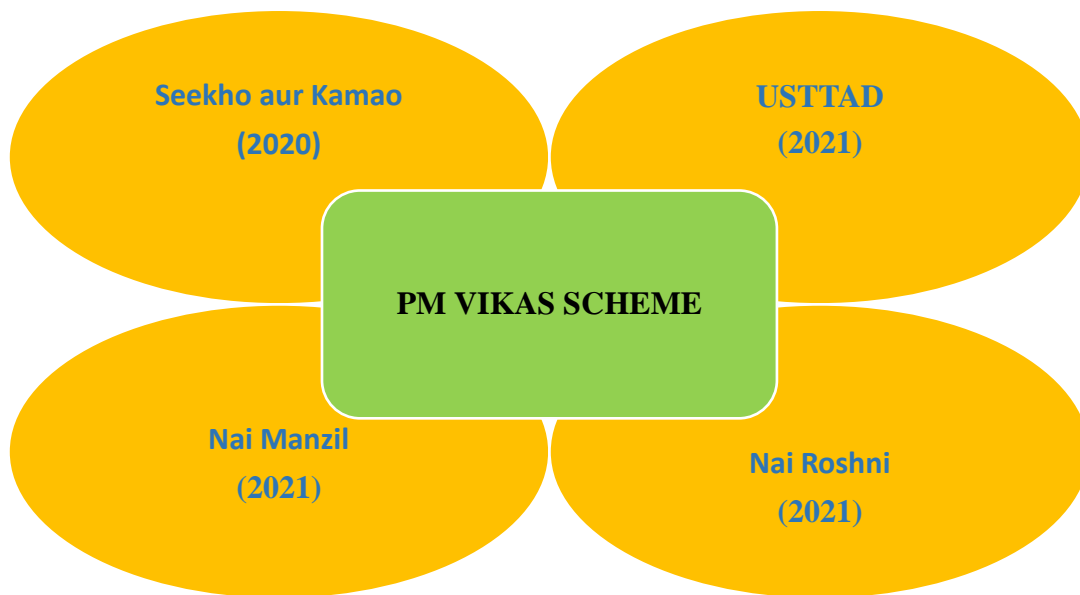
There are so many schemes launched by the central government for women entrepreneurs. In our study, we have selected major schemes.

Name of the scheme	Objectives	Strategy of the scheme
Annapurna Scheme	This scheme particularly designed for women in the food catering industry	Government provides loans up to Rs.50,000 for equipment purchases and for business related activities
Mudra Yojana Scheme	Scheme provides financial support to eligible women who want to start their own business.	This scheme provides loan under 3 categories a. Shishu category: Provides loans up to Rs.50,000 & suitable for small start-ups b. Kishor Category: Provides loans up to Rs. 50,001 to Rs.5,00,000 c. Tarun Category: Loan amt is Rs.5,00,001 to Rs.10,00,000
Dena Shakti Scheme	This Scheme's main objective is to empower the women entrepreneurs in the various sectors such as agriculture, manufacturing sector, retail and so on.	Scheme provides sector-specific loans up to Rs.20,00,000
Udyogini Scheme	This Scheme has launched with the aim of empowering poor women entrepreneurs with	Interest-free loans are available under this scheme up to rs. 3,00,000 . in addition, 30% subsidy is given on loans under this scheme.

	financial assistance	
Mahila Udyoga Nidhi Scheme	This scheme functions under SIDBI (Small Industrial Development Banks of India) with the vision of promoting women entrepreneurship by providing financial assistance at concessional interest rate.	This scheme offers loans up to Rs. 10,00,000 for own & small scale business. The loan repayment tenure is 10 years.

The Central Government Skill development schemes for women

The Ministry of Skill Development and Entrepreneurship has taken several steps to promote women’s economic empowerment through skill development. In order to enhance women’s participation in the workforce, skill India Mission is decided to lead Indian women in a track of self reliance through skill development schemes.



All the above-listed schemes are subsumed in an integrated scheme called “ PM VIKAS” (Pradhan Mantri Virasat Ka Samvardhan).

This scheme has 3 components:

- ❖ Skilling and Training
- ❖ Leadership and Entrepreneurship
- ❖ And Education

Under this scheme 27,217 women beneficiaries have been trained so far, which is nearly 74% of total beneficiaries.

Source: Ministry of Minority Affairs)

Women Economic Empowerment Schemes: Challenges and Problems

Despite comprising 48% of the total population, currently Indian women contribution is only 18% for the GDP. This study is emphasising the women's economic empowerment, since it has a multiplier effect on society, as we discussed earlier.

Several socio-economic shaded factors, such as low literacy rate, structural inequalities, health-related issues, lack of technical knowledge and proper skill training, lack of proper awareness about the schemes and so on, are the reasons for low female LFPR in India. Promoting the women's labour participation rate is necessary indicator for sustainable and inclusive growth of the country. Post-covid pandemic period seems to be a silver beam in the Indian female economy.

Considering the insights, the Government of India has undertaken several comprehensive approaches to improve Female LFPR in India.

Government initiatives to improve women's labour participation

The central government has launched numerous schemes/acts/laws/programs/policies to enhance the women's labour participation. These initiatives are designed to tackle the barriers and improve the Female LFPR simultaneously.

Some major steps are as follows:

1. The government has launched many schemes to promote girls' education in order to improve their financial status through education. Some major schemes are:

- a. Beti Bachao Beti Padhao scheme
- b. Kasturaba Gandhi Balika Vidyalaya Scheme
- c. RMSA

2. **One-Stop Centre Scheme** has launched to provide emergency services like legal assistance, medical care, and counselling services under one roof to protect women affected by gender-based violence.

Women Helpline Scheme is also initiated by the GoI and intended to provide 24/7 emergency services with a single toll-free number-181.

3. In order to streamline the labour law, the government has notified 4 labour codes. Which are:

- a) The code on Wages-2019
- b) The code on Social Security-2020
- c) The Industrial Relation Code-2020
- d) And Health and Working Conditions Code-2020

Codification of the labour laws brings transparency and it would reduce the stubbornness of labour market.

4. Another important lag factor for promoting female LFPR in India is lack of skill. The Ministry of Skill Development and Entrepreneurship has taken numerous initiatives to augment the women's labour participation rate. Major skill development programs are as follows:

- a. Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
- b. Pradhan Mantri Kaushal Kendra (PMKK)
- c. Jan Shikshan Santhan (JSS)
- d. National Apprenticeship Promotion Scheme (NAPS)
- e. Skill Loan Scheme
- f. SANKALP... etc.

5. The government has taken multiple steps to empower Indian women in all dimensions. One of the main dimensions is health and medical accessibility. GoI decided to provide Comprehensive Primary Health care through Ayushman Bharath-Health and Wellness Centres. We may observe the heterogeneity in the objectives of the enforcement of the health-related schemes, such as

- a) National Free Drugs Initiative
- b) National Mobile Units
- c) Surakshit Matritva Aashwasan
- d) Janani Shishu Suraksha Karyakram
- e) Janani Suraksha Yojana..etc

6. India has ranked at 127 in the Gender gap Index 2023. There is a significant improvement in ranking, rising from 135th ranking in 2022 to 127th ranking in 2023. In order to minimize the gender gap, GoI has been undertaking several Schemes/policies, like

- a) SWADHAR Greh
- b) Mahila Shakti Kendras
- c) Rajiv Gandhi national Creche Scheme
- d) Support to Training and Employment Program for Women (STEP)
- e) Mahila Police volunteers Scheme
- f) Working Women Hostel Scheme

There are manifold Schemes/policies/programs have been introduced by the GoI that aim to address barriers like violence against women, gender inequality, health & education related issues..etc

CONCLUSION:

The study has enlightened many insights related to female LFPR in India from the past 10 years. The trend analysis indicates that female LFPR remained relatively stagnant during the initial years of the study period, with a visible disruption during the COVID-19 pandemic. However, the post-2020 phase reflects a gradual recovery, suggesting structural adjustments and increased engagement of women, particularly in rural and self-employment sectors.

The econometric findings provide important insights. The regression results confirm that female literacy has a statistically significant and positive impact on female LFPR. Education enhances employability, skill acquisition, and economic independence, thereby strengthening women's integration into the labour market. Similarly, public expenditure on education demonstrates a strong

and highly significant positive relationship with Female LFPR, emphasizing the importance of sustained investment in human capital formation. Although Total Fertility Rate (TFR) shows a negative relationship with female LFPR, its statistical insignificance at the 5 percent level suggests that fertility alone does not fully explain women's labour participation. Instead, structural factors such as childcare responsibilities, domestic duties, informal employment dominance, and limited access to productive resources play a more decisive role.

The government initiatives are also contributing significantly to promote the female LFPR. But the government initiatives have not made substantial contribution to increasing female LFPR in the first 6 six study years. But government schemes have been playing a vital role in promoting female LFPR in recent years.

In conclusion, improving female labour force participation in India requires a multidimensional and coordinated strategy. Beyond introducing new schemes, emphasis must be placed on effective implementation, awareness creation, strengthening childcare infrastructure, enhancing skill-based education, and ensuring safe and inclusive workplaces. Women's economic empowerment is not merely a social objective but an economic necessity for achieving sustainable and inclusive growth. A sustained increase in female LFPR will generate multiplier effects across poverty reduction, human development, and gender equality, thereby accelerating India's progress toward long-term economic resilience and social transformation.

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