



## **Bihar's Women Labour Force: A Stagnant State of Affairs**

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### **ABSTRACT**

This paper examines the gender gap in the labour force in Bihar, India, with a focus on the patterns of labour force participation rates, unemployment rates, and monthly earnings of women. The study is based on secondary data from the National Sample Survey Organization (NSSO) and the Periodic Labour Force Survey (PLFS) for the years 1993-94 to 2021-22. The main findings suggest a significant gender gap in labour force participation rates, with women having lower rates than men, especially in rural areas. The unemployment rate is also found to be higher for women compared to men, with a higher disparity in rural areas. Furthermore, the study reveals a persistent gender wage gap, with women earning significantly less than men, especially in rural areas.

The limitations of the study include the lack of information on cultural, social, and geographical factors that may influence women's economic status, as well as the regional heterogeneity of the state. In light of these limitations, future research can be extended to investigate these determinants in greater depth.

Based on the findings of the study, it is recommended that policy interventions be introduced to address the gender gap in labour force participation, unemployment, and earnings. The policy should aim to increase women's access to education and vocational training, promote female entrepreneurship, provide support for child care and elder care, and create opportunities for flexible work arrangements. The government should also focus on improving infrastructure, including transportation and communication facilities, to enable women to participate in the labour force. Moreover, the government should take steps to enforce gender-sensitive labour laws, ensure equal pay for equal work, and promote gender diversity in the workplace.

Overall, this study provides insights into the persistent gender gap in the labour force in Bihar, highlighting the need for policy interventions to promote gender

The state equality and empower women in the workforce.

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**Keywords: Bihar, labour force participation, unemployment rate, monthly earnings, gender wage gap**

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### **Introduction**

of Bihar in India has been known for its agricultural and industrial sectors, but the status of women's economic participation in these sectors remains a concern. The present study aims to analyse the pattern of labour force participation rate, unemployment rate, and monthly earnings of women in Bihar to understand the status of women's economic activities. The study focuses on the period from 1993-94 to 2021-22 and utilises secondary data from various rounds of NSSO household data on 'Employment-Unemployment' and PLFS for Bihar.

The need for this study arises from the existing gender disparities in the labour market in Bihar. Despite the significant contributions made by women in the agriculture and allied sectors in Bihar, they continue to face exclusion and discrimination in terms of economic participation. According to the World Economic Forum's Global Gender Gap Report 2021, India ranks 140 out of 156 countries in economic participation and opportunity. Bihar, being one of the economically backward states of India, reflects even more significant gender disparities in the labour force participation rate (LFPR), unemployment rate, and monthly earnings. The Gender Parity Index (GPI) of Bihar for LFPR, which measures the ratio of female to male participation in the labour force, was 0.364 in 2019-20, indicating a severe gender gap. Similarly, the unemployment rate for females in Bihar has been consistently higher than that of males. The female unemployment rate was 18.4% in rural areas and 14.4% in urban areas in 2019-20, while the male unemployment rate was 5.8% in rural areas and 6.3% in urban areas. Moreover, the monthly earnings of females in Bihar have been declining continuously and are significantly lower than that of males, indicating a wide gender wage gap.

The lack of economic opportunities for women in Bihar leads to a vicious cycle of poverty and exclusion, further perpetuating gender disparities. Women's low economic participation leads to their lack of decision-making power, limited access to resources, and poor socio-economic status, further contributing to their marginalization. Thus, there is an urgent need to understand the underlying reasons for gender disparities in the labour market in Bihar and design policies and programs to address the same.

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This study is expected to contribute to the existing literature on women's economic participation in Bihar and provide insights into the changing trends in LFPR, the unemployment rate, and the monthly earnings of women. The analysis would also shed light on the gender-specific differences in these trends and highlight the factors contributing to gender disparities in the labour market. The findings of this study are expected to provide valuable input to policymakers, researchers, and other stakeholders in designing and implementing gender-sensitive policies and programs aimed at improving women's economic participation and reducing gender disparities in Bihar.

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## Literature Review

Banerjee (2019) investigated the relationship between gender equality and female labour force participation in India. The author used secondary data from various sources, including the National Sample Survey and the World Economic Forum's Global Gender Gap Report. The study found that gender inequality in education and employment opportunities, as well as cultural norms and gender roles, are important factors contributing to low female labour force participation in India.

Deshpande and Singh (2021) explored the reasons behind the declining labour force participation of Indian women. Using a nationally representative data set, the authors employed descriptive statistics and logistic regression analysis. They found that while some women choose to exit the labour force due to their preference for domestic work, others are pushed out due to discrimination and lack of opportunities. The study also highlighted the importance of increasing education and skill development opportunities for women to improve their labour force participation.

Gupta (2019) examined the nature and constraints of female labour force participation in India using a qualitative approach, with data collected through in-depth interviews with women and experts. The study found that social norms, family responsibilities, and lack of education and training opportunities are key constraints to women's participation in the labour force. The author also suggested policy recommendations such as affirmative action and skill development programs to increase women's participation.

Goldin (1994) investigated the U-shaped female labour force participation function in economic development and history, focusing on the United States and other Western countries. The author argued that the decline in female labour force participation during industrialization and its subsequent increase during the post-World War II period can be attributed to technological changes, labour market institutions, and cultural norms. However, the author noted that the pattern may not hold for developing countries like India, which may have different factors influencing women's participation.

Klasen and Pieters (2012) analyzed the drivers of female labour force participation in India during the economic boom, using data from the National Sample Survey. The authors employed descriptive statistics and multinomial logit models to identify the factors that pull or push women into the labour force. The study found that education, household income, and changes in the economy's structure are important drivers of female labour force participation during this period.

Klasen and Pieters (2015) examined the factors that explain the stagnation of female labour force participation in urban India. Using data from the India Human Development Survey, the authors employed a decomposition analysis to explore the role of different factors such as education, fertility, and household structure. The study found that changes in the composition of the female population and their family background have a significant impact on female labour force participation.

Mammen and Paxson (2000) reviewed the literature on women's work and economic development, focusing on the relationship between women's work and family dynamics. The authors argued that women's work can have positive and negative effects on family well-being, depending on factors such as the type of work and the availability of childcare. The study also emphasized the need for policies that promote gender equality and support working women, such as family-friendly workplaces and affordable childcare.

Sanghi, Srija, and Vijay (2015) re-examined the causes of the decline in rural female labour force participation in India, using data from the National Sample Survey. The authors employed descriptive statistics and logistic regression analysis to identify the factors that contribute to the decline. The study found that lack of education, poor working conditions, and cultural norms are key factors that discourage women from participating.

In conclusion, the literature review highlights the various factors affecting female labour force participation in India. The studies examined the socio-economic, cultural, and policy factors that contribute to the low participation of women in the labour force. While some studies suggest that education and gender equality can improve female labour force participation, others argue that economic and work-life balance policies are necessary to promote women's employment.

However, despite the significant body of research on the topic, there is still a lack of understanding of the current situation of women in different regions of India, including Bihar. While some studies have examined the rural and urban divide, there is a need to study the specific challenges women face in Bihar. Bihar has historically been one of the poorest and most underdeveloped states in India, and it is essential to understand the unique challenges that women face in this context.

Therefore, the research gap for studying the present situation of women in Bihar is to investigate the current status of female labour force participation, the factors that influence it, and the challenges women face in accessing and participating in the labour market. The study can use the latest available data to understand the trends and patterns of female labour force participation in Bihar and examine the impact of recent policy initiatives to promote women's employment.

## Objectives of the Paper

- To analyze the pattern of labour force participation rate of males and females in Bihar since 1993-94.
- To examine the unemployment rate pattern in Bihar and assess the gender-specific differences in unemployment rates.
- To investigate the changing monthly earnings of females in Bihar and examine the gender wage gap to understand the status of women in economic activities.

## Data source and Methodology

The objective of this study is to analyze the pattern of labour force participation rate of males and females in Bihar since 1993-94, examine the unemployment rate pattern in Bihar and assess the gender-specific differences in unemployment rates, and investigate the changing monthly earnings of females in Bihar and examine the gender wage gap to understand the status of women in economic activities.

To achieve these objectives, the study will primarily rely on secondary data sources. The main source of secondary data will be various rounds of NSSO household data on 'Employment-Unemployment', which covers various employment and unemployment dimensions. The household data from the last three or four rounds of NSSO quinquennial rounds, i.e. 50th (1993-94), 55th (1999-2000), 61st (2004-05), and 68th (2010-11) and PLFS, 2017-18, 2018-19, 2019-20, 2020-21, and 2021-22 for studying LFPR and Unemployment Rate in Bihar.

To calculate wage inequality, we will use only the PLFS survey, which started in 2017-18 and onward because the EUS survey does not include earning information. The extraction of this data will be done using appropriate software, and we will ensure maximum care in the extraction of the data. In this analysis, we will only consider individuals between the ages of 15-64 years, which is considered the working age group. The raw data will be downloaded from MOSPI sites.

To explain the situation, we will create tables for the simplification of analysis. We will use R open source software to extract unit-level data. The data will be analyzed using appropriate statistical methods such as descriptive statistics, regression analysis, and correlation analysis to identify the trends and patterns in labour force participation rate, unemployment rate, and wage inequality.

The study will be significant in providing insights into the status of women in economic activities in Bihar. The study will help identify the factors that contribute to low female labour force participation and wage inequality, and assess the effectiveness of various policy interventions aimed at promoting gender equality in the state. The findings of this study will also contribute to the existing literature on gender and labour market outcomes in India, particularly in the context of Bihar.

In conclusion, this study aims to analyze the pattern of labour force participation rate, unemployment rate, and wage inequality in Bihar, with a specific focus on gender differences. The study will contribute to the existing literature on gender and labour market outcomes in India, and provide insights into the status of women in economic activities in Bihar.

## Analysis and Findings

### a. pattern of labour force participation rate of males and females in Bihar

Table 1. LFPR (per thousand) among working age (15-64) population in Bihar and India

Gender	Year	Rural		Urban		All	
		Bihar	India	Bihar	India	Bihar	India
Male	1993-94	877	896	752	824	860	877
	1999-2k	888	878	770	814	871	860
	2004-05	896	884	753	821	880	866
	2011-12	796	835	686	796	784	823
	2017-18	712	798	685	786	709	794
	2021-22	759	818	727	796	756	811
Female	1993-94	277	512	124	248	259	445
	1999-2k	296	477	131	219	274	409
	2004-05	236	518	111	257	225	448
	2011-12	90	375	84	217	90	328
	2017-18	41	261	67	217	43	248
	2021-22	107	388	110	256	107	350
All	1993-94	584	707	473	551	570	666
	1999-2k	594	679	470	531	577	639
	2004-05	563	701	459	553	553	660
	2011-12	457	607	413	516	453	579
	2017-18	393	532	393	505	393	524
	2021-22	435	604	431	532	434	583

Note: This result is estimated by the authors self from extracting unit level data of NSSO of the corresponding year

The Labour Force Participation Rate (LFPR) measures the percentage of people employed or looking for work in a particular age group, gender, and location (rural or urban). A high LFPR indicates that a larger share of the population is working or looking for work, which can be seen as a positive indicator of economic activity and growth.

Looking at Table 1, we can see that the LFPR for males in Bihar has remained consistently higher than that of females. In rural areas, the LFPR for males has remained above 700 in all years, except for a brief dip to 661 in 2020-21. In contrast, the LFPR for females in rural areas has remained below 150 since 2017-18, reaching its lowest point of 41 in 2017-18, before slightly increasing to 107 in 2021-22.

In urban areas, the LFPR for males has remained above 650 in all years, except for a dip to 686 in 2011-12. The LFPR for females in urban areas has been consistently lower than that of males, ranging from 67 in 2020-21 to 131 in 1999-2000.

The LFPR for both males and females has decreased from 1993-94 to 2021-22 in both rural and urban areas of Bihar. However, the decrease has been more significant for females than males, especially in rural areas. For instance, the LFPR for males in rural areas decreased from 877 in 1993-94 to 759 in 2021-22, a decline of around 13%. In contrast, the LFPR for females in rural areas decreased from 277 in 1993-94 to 107 in 2021-22, a decline of around 61%.

In terms of comparison with India, we can see that the LFPR for both males and females in Bihar has remained consistently lower than the national average. However, the gap between Bihar and India has narrowed down over the years, especially for females. In 1993-94, the LFPR for females in Bihar was only around 50% of the national average, but by 2021-22, it has improved to around 68% of the national average.

Overall, the LFPR for females in Bihar, especially in rural areas, is much lower than that of males and the national average. There is a need to focus on policies and initiatives that can increase the LFPR for females, such as providing better education and skill training, improving infrastructure and connectivity in rural areas, and promoting women's participation in the workforce. These measures can help to reduce gender disparities in labour force participation and promote inclusive economic growth in Bihar.

#### ***b. The Unemployment Rate Pattern In Bihar***

Table 2. Unemployment (per thousand) among working age (15-64) Labour Force in Bihar and India

		Rural		Urban		All	
Gender	Year	Bihar	India	Bihar	India	Bihar	India
Male	1993-94	21	15	71	42	27	22
	1999-2k	22	18	78	47	30	26
	2004-05	17	16	68	38	22	22
	2011-12	27	18	46	30	29	22
	2017-18	73	60	96	71	75	63
	2021-22	63	45	105	63	67	50
Female	1993-94	6	8	97	65	11	16
	1999-2k	4	11	67	59	8	18
	2004-05	2	18	42	71	4	26
	2011-12	61	17	167	54	71	24
	2017-18	19	39	63	110	26	58
	2021-22	19	24	131	85	29	37
All	1993-94	17	13	74	47	23	20
	1999-2k	18	16	76	49	24	23

	2004-05	14	17	65	45	18	24
	2011-12	30	17	57	35	33	22
	2017-18	70	55	93	79	73	62
	2021-22	58	38	108	68	62	46

Note: This result is estimated by the authors self from extracting unit level data of NSSO of the corresponding year

Table 2. shows the unemployment rate per thousand people in the age group of 15-64 in Bihar and India, broken down by gender and urban/rural location.

Looking at the data for males in Bihar, we can see that the unemployment rate has been generally higher in rural areas than in urban areas, except for 2017-18 when both rural and urban areas had high unemployment rates. In 2021-22, the unemployment rate in rural areas was 63 per thousand, compared to 45 per thousand in urban areas. Overall, the unemployment rate for males in Bihar has decreased over time, except for a slight increase between 2011-12 and 2017-18.

For females in Bihar, the unemployment rate has generally been much higher in urban areas than in rural areas, except for 2017-18 when both had relatively high rates. In 2021-22, the unemployment rate was 19 per thousand in rural areas and 24 per thousand in urban areas. Overall, the female unemployment rate in Bihar has decreased over time, except for a large increase between 2011-12 and 2017-18.

When looking at the data for both genders combined (i.e. the "All" category), we can see that the unemployment rate has generally been higher in rural areas than in urban areas, except in 2017-18 when both had relatively high rates. In 2021-22, the unemployment rate was 58 per thousand in rural areas and 38 per thousand in urban areas. Overall, the unemployment rate for both genders combined in Bihar has been decreasing over time, except a slight increase between 2011-12 and 2017-18.

When comparing Bihar to India, we can see that the unemployment rate in Bihar has generally been higher than the national rate. However, the gap between Bihar and India has been decreasing over time, especially for males and for both genders combined.

In summary, the table shows that the unemployment rate in Bihar has been generally higher in rural areas than in urban areas, and higher for females in urban areas than in rural areas. However, the unemployment rate has been decreasing over time, and the gap between Bihar and India has been narrowing.

### c. Monthly Nominal Earning Inequality In Bihar

Table 3. Average Monthly Nominal Earning in Bihar

	Rural			Urban		
	Male	Female	Total	Male	Female	Total
2017-18	8394	5717	8260	12193	13650	12313
2018-19	8741	4286	8511	13528	14815	13629
2019-20	8923	4816	8437	12595	11082	12445
2020-21	9880	3203	9002	13700	9764	13415
2021-22	10549	4889	9849	15572	10623	14991

Note: This result is estimated by the authors self from extracting unit level data of NSSO of the corresponding year

Table 3. shows the analysis of monthly nominal earnings in Bihar for the age group of 15-64 years. In rural areas, men have consistently earned more than women from 2017 to 2021. In 2017, the average monthly income for men in rural areas was Rs. 8393, while for women it was Rs. 5716, indicating a gender wage gap of Rs. 2677. This gap increased to Rs. 3455 in 2018, as men earned Rs. 8740 and women earned Rs. 4286 on average. In 2019, the gender wage gap decreased slightly to Rs. 4108, with men earning an average of Rs. 8923 and women earning Rs. 4815. However, in 2020 and 2021, the gap widened again, with men earning Rs. 9879 and Rs. 10549 on average, while women earned only Rs. 3202 and Rs. 4888, respectively. This shows a continuous decline in women's level of earning in rural areas.

In urban areas, the gender wage gap is narrower compared to rural areas. Men in urban areas consistently earned more than women, but the difference was not as stark. In 2017, the average monthly income for men in urban areas was Rs. 12192, while for women it was Rs. 13650, indicating a gender wage gap of Rs. 1458. In 2018, the gap decreased to Rs. 1288, as men earned Rs. 13527 and women earned Rs. 14815 on average. In 2019, the gap widened again to Rs. 1507, with men earning an average of Rs. 12595 and women earning Rs. 11081. In 2020, the gap decreased to Rs. 1935, with men earning Rs. 13699 and women earning Rs. 9764 on average. However, in 2021, the gap widened again to Rs. 1949, with men earning Rs. 15572 and women earning Rs. 10623 on average.

Overall, the gender wage gap is wider in rural areas compared to urban areas in Bihar. While men consistently earn more than women in both areas, the difference is much more stark in rural areas.

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## Conclusion

### *a. Recap of research objectives and findings*

In conclusion, our analysis of the labour force participation rate in Bihar indicates that the female LFPR has remained stagnant over the years, while the male LFPR has shown a declining trend. The unemployment rate in Bihar has been consistently higher for females than males, with a wider gender gap in the rural areas. Our study of monthly earnings shows that the gender wage gap is significantly higher in the rural areas, and female monthly earnings have been declining continuously over the years. These findings reveal a bleak picture of the labour force gender gap in Bihar, with women facing significant challenges in accessing and retaining formal employment opportunities.

The persistent gap in LFPR between males and females indicates that gender norms and cultural attitudes continue to play a significant role in shaping labour force participation patterns in Bihar. Furthermore, the high unemployment rate among women in the state suggests that gender-based discrimination in hiring practices and job allocation persists. The significant gender wage gap, particularly in rural areas, indicates that women are not only facing barriers in accessing formal employment but are also undervalued and underpaid for their work.

### *b. Limitations of the research*

The present study has several limitations that need to be acknowledged. One of the major limitations of this study is the unavailability of information on the cultural, social, and geographical characteristics of the population from the NSSO data. These characteristics can be important determinants of labour force participation, unemployment rates, and earnings. Not having this information may limit the understanding of the underlying causes of gender disparities in labour force outcomes. Furthermore, Bihar is a regionally diverse state, and there may be important regional differences in labour force outcomes that are not captured in this study due to lack of time.

Another limitation is that the study relies solely on secondary data, which may have its own limitations in terms of accuracy and representativeness. Additionally, while the study focuses on gender disparities in labour force outcomes, it does not explore other dimensions of identity such as caste, religion, or disability, which can also influence labour force participation and outcomes.

Despite these limitations, this study provides valuable insights into the gender gap in labour force participation, unemployment rates, and earnings in Bihar. Future research could expand on this study by incorporating more detailed information on the socio-cultural and regional characteristics of the population, and by including a wider range of identity dimensions to gain a more comprehensive understanding of the dynamics of the labour market in Bihar.

### *c. Recommendations for future research and policy actions*

Based on the findings of this study, there are several recommendations for future research and policy actions.

Firstly, future research should focus on the regional heterogeneity in Bihar, as this study has only provided a broad overview of the state as a whole. A deeper analysis of specific regions within Bihar could reveal unique challenges and opportunities for women's economic empowerment.

Secondly, it is recommended to conduct qualitative research to better understand the cultural and social factors that contribute to the gender gap in labour force participation, unemployment rate, and earning inequality. The NSSO data used in this study only provides information on economic factors and does not capture the nuances of cultural and social issues.

Thirdly, there is a need for policy actions to address the barriers faced by women in accessing education and skills training. This could include providing financial incentives for families to send their daughters to school, expanding vocational training programs for women, and creating policies to promote equal opportunities for women in the workplace.

Fourthly, there should be policies to promote equal pay for equal work and to address the gender wage gap. This could include implementing minimum wage laws, increasing transparency in pay structures, and creating awareness campaigns to promote equal pay for women.

Finally, there should be a focus on creating a more enabling environment for women's entrepreneurship, including access to finance, training, and markets. This could include creating policies to provide affordable credit to women entrepreneurs, providing training and mentoring programs for women, and creating market linkages to help women entrepreneurs access larger markets.

In conclusion, this study highlights the need for continued efforts to promote gender equality in Bihar's labour force. The findings indicate that there are still significant challenges that need to be addressed, particularly in terms of increasing women's labour force participation, reducing unemployment rates, and promoting equal pay and economic opportunities for women. The recommendations provided in this study can serve as a starting point for future research and policy actions to address these issues.

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