

Declining female labour force participation
in India: A comparison between Rural and
Urban India.

Flame University, Pune, India

April 2021

The Authors

The authors are students studying at FLAME University. Arjun Grover (Economics Honours.), Riddhima Samanta (Major: Economics, Minor: Public Policy), Shaon Bandopadhyay (Major: Public Policy, Minor: Economics), and Viha Julia (Major: Economics, Minor: Entrepreneurship). This paper is a final submission for their Labour Economics course in the second year at FLAME University, India.

Acknowledgements

The authors acknowledge Professor Rupa Korde for her support and guidance through the course of this research project. Special thanks to Aakash Bothra and Jyoti Grover for their valuable feedback and knowledge inputs.

Keywords

FLFPR, labour force, female participation, India, education, employment, rural development, urban, wages.

Bibliographical Information

Grover, A., Samanta, R., Julia, V., & Bandopadhyay, S. (April 2021). Declining labour force participation in India: A comparison between Urban and Rural India. India, FLAME University.

TABLE OF CONTENTS

- ABSTRACT
- 1) INTRODUCTION.....
- 2) LITERATURE REVIEW
- 3) RESEARCH OBJECTIVES.....
- 4) DATA AND RESEARCH METHODOLOGY
- 5) ANALYSIS AND OBSERVATIONS
- 5.1) FLFP in Rural vs Urban India - An Overview:
 - a) Empirical Analysis.....
 - b) Qualitative Analysis.....
- 5.2) Female Employment by Status
- 5.3) Women Engaged in Domestic Duties in Rural & Urban.....
- 5.4) ANOVA: Education/Literacy v/s FLFPR in Rural & Urban.....
- 5.5) Per Capita Income v/s FLFPR.....
- 6) LIMITATIONS.....
- 7) RECOMMENDATIONS.....
- 8) CONCLUSION.....
- 9) REFERENCES.....
- 10) APPENDIX.....

ABSTRACT

This paper graphically examines the pattern of FLFPR % between Rural and Urban India between 1994 and 2019; The paper then proceeds to study and attribute the confluence of factors to explain the overall trends and sectoral differences in FLFPR in India.

This analysis strongly indicates the different parameters at play to account for the differing participation rates in the two sectors. Rural India seems to be impacted more by culture, socioeconomic status, degree of mechanisation, migration and unpaid labour. On the other hand, Urban FLFPR is driven more by tertiary education, occupational segregation, male-female wage differentials and access to a supportive work environment.

A specific attempt made in the paper to understand the prevalence of the universal U curve between income and FLFPR in the Indian context reveals a likely inverted V phenomenon where FLFPR increases with income up to a point beyond which it begins to decline. This trend seems unique for India, given our cost of living and the propensity of Indians to go for education rather than employment with higher income.

Using ANOVA, the paper further attempts to theoretically establish a relationship between literacy, tertiary education and FLFPR separately for rural and urban India and finds that there does not exist a significant relationship between literacy and FLFPR in urban India. Whereas improvement in literacy does seem to have an impact on rural FLLFPR. However, this nexus with FLFPR is not strong with tertiary education in rural India. This further adds to our research argument that the factors impacting FLFPR are different for rural and urban women.

1. INTRODUCTION

Decades ago and much before entrepreneurship, education, and inclusion became a reality, seven women from humble beginnings residing in a crowded tenement in Mumbai rolled out their homegrown venture “Lijjat Papad” - a cooperative which today is an employer to 45000 women pan India. Unfortunately, alongside this enviable achievement is data that screams the abysmal declining rate of FLFPR both in rural and urban India.

As per the ILO report of 2019, India’s FLFPR of 21% is considerably behind the global norm of 48%. What does this tell us? As a country, we may have made huge strides and registered impressive growth in per capita income, GDP, employment and education. Yet, the status of women, whether as part of the labour force or in terms of safety or representation in key private, legislative or governmental positions, has never looked grimmer. This data, when sliced for FLFPR trends for rural vs urban, is even more revealing. NSSO surveys clearly show that FLFPR in the rural sector was fairly strong at 49% in 1994 but fell to 26.4% in 2018. Urban FLFPR, on the other hand, always hovered around 20 % to 25 % since 1994 and marginally decreased to 20.4% in 2018. Clearly, job creation, legislative and government action or improved literacy levels have not helped stem the steep fall in rural FLFPR or augmented the rate of FLFPR growth in urban India.

The first part of this paper begins by presenting a literature review on this dichotomy followed by a graphical analysis of the FLFPR curves both for rural and urban women. The latter part of this paper attempts to explain the role of key parameters as possible explanations for the decline in rural and the relative low FLFPR in the case of urban India.

The ANOVA analysis is an attempt to present the literacy and FLFPR and tertiary education and FLFPR nexus to theoretically confirm the universal assumption that high literacy and tertiary education leads to higher FLFPR. The research concludes with key findings & recommendations and a summary note of caution on how FLFPR may be impacted by hitherto unknown variants, given how the pandemic and the recent labour code may transform the way work gets done in the future.

2. LITERATURE REVIEW

Women labour participation in India is influenced by:

The practice of early marriage negatively hampers the economic development of Indian women and also impacts the labour market prospects for them; it acts as an impediment to their years of formal education, implies early motherhood and stops them from acquiring labour skills essential for employment (Dhamija & Roychowdhury, 2020).

Despite a rising GDP and strong economic growth, less than 20% of new jobs in top hiring industries/segments were available to women. Although there has been an increase in primary and secondary education of women, due to the growing demand for labour with technical skills and men with tertiary level or vocational training level, women have failed to benefit from the opportunities provided in flourishing sectors.

The service sector has been an important avenue for urban women, with employment increasing from 35.7% in 1977-78 all the way to 60.7% in 2017-18. A large majority of women have entered the teaching and nursing profession, which offer minimal scores for career progression. Further, contrary to men - women from both rural and urban failed to significantly progress their presence in the secondary sector (Kaspos, 2014).

Given the patriarchal nature of our society, women bear the responsibility of taking care of the family, children and household chores. A study conducted found just this that 50% of adults held the opinion that a married woman should not be having a job if the husband is earning well. These “norms” are more prevalent in the wealthier, upper-caste households, thus explaining the low FLFP in urban India. Findings show that females spend 16.9% of their time in *unpaid* domestic services and only 4.2% in *paid* employment as compared to men, who spent 18.3% of their time in their jobs (Sharma, 2021).

The recent amendment to the Maternity Benefits Act 2017 increases the women’s paid leave from 12 to 26 weeks. According to Section 66(1)(b) of the Factories Act 1948, a woman cannot work overnight in a factory and is only allowed to work from 6 am-7 pm. These government policies, despite the good intention, deter employers from hiring women. Research conducted by

Mehrota et al. (2017) found that women withdrew from the labour force due to the absence of flexible work arrangements, access to child care and employers' reluctance to hire women as they have the additional onus of paying for women's maternity leave (Kamdar, 2020).

Rising household income resulting from economic growth negates the financial need for a supplementary income. "The income effect" is possibly a key factor explaining the decline in FLFPR between 2005 and 2010 (Kapsos, 2014). In India, societal norms expect the man to be the breadwinner for the family, and the responsibility of the household work and taking care of the family falls on the shoulders of the woman (Sanghi, Vijay, & Srija, 2015). The female labour supply is more of an insurance mechanism. Only when it is really necessary, do females enter the labour force.

Even though government schemes providing free education for girls, for example, Beti bachao, Beti padhao have greatly helped improve the number of females educated in rural areas, the same has not translated to higher FLFPR in rural areas. A majority of them withdraw to tend to household duties. Apart from this, as they have low-level skills, work in non-farm sectors is very limited (Sanghi, Vijay, & Srija, 2015). The employment of women is primarily associated with concepts like social values, economic and caste differences in rural India. However, the introduction of technology to agriculture in India has made possible the spread of education, better medical facilities, development of transport, electrification, health services, and other rural improvements (Sundari, 2020). Owing to this, the traditional employment patterns of rural India are undergoing substantial rapid change.

As liberalisation of traditional social norms occurs, the desire to seek a higher standard of living has become inherent, allowing some of them to even migrate to urban areas (Sundari, 2020). On average, 34% of women are paid less than their male counterparts for the same work. Recent labour reforms also do not address this, nor do they take active measures to bring more females into the labour force. Lack of female opinion on workplace safety, workplace sexual harassment laws, wage discrimination etc., has further led to a decline in urban FLFP. Another major reason for the decline in Urban areas is because an increase in the percentage of tertiary education means that women enter the workforce late and mostly in white-collar jobs (Arvind, 2020).

3. RESEARCH OBJECTIVES

1. To conduct an exploratory study to understand and analyse the difference, if any, in percentage of FLFP in rural and urban India.
2. To understand and identify the key factors contributing to the changes in FLFP in rural and urban India.
3. To determine the impact of specific chosen variables on the percentage of Labour Force Participation of women in India in the past three decades.

4. DATA AND RESEARCH METHODOLOGY

This research is largely based on the National Sample Survey Organisation of India from the period 1993-94 to 2018-19. The data from NSSO reports from the following rounds were used - 50th 1993-94, 55th 1999-2000, 61st 2004-05, 66th 2009-10, 68th 2011-12, PLFS 2017-18, PLFS 2018-19. WorldBank data about female labour force participation and GDP Per Capita(\$) between 1990 - 2019 was also used for the trend analysis along with secondary data and other sources for analysis.

Serial Number	Variables (Rural v/s Urban)
1.	FLFP Rate
2.	Female Employment by Status
3.	Female Participation Rate by Education
4.	Females engaged in Domestic Duties
5.	GDP Per Capita

Methodology

Data from ILO, NSSO and WorldBank were used, and a comparison was drawn year on year between rural and urban factors. Interactions between these variables (for example, participation in the labour force based on education) were observed, and the results were graphed and tabulated.

The paper specifically focuses on the overall FLFP, employment by status- self-employed, casual, regular worker, education level attained- illiterate, primary, middle secondary, tertiary and lastly, domestic duties. Data on Male Labour Force Participation in India has been incorporated in the initial comparison.

All qualitative and statistical analysis observations for individuals aged below 15 and above 59 were dropped owing to legislative and societal practices relating to the age of employment. Since the focus is on identifying factors underlying FLFP, persons surveyed were of usual status¹.

¹ Usual status denotes the activity status of a person during the reference time period of 365 days prior to the date of the survey. To adjudge the usual activity status of an individual, each was categorised as belonging to the labour force or not during the mentioned reference period on the basis of major time criterion.

5) ANALYSIS AND OBSERVATIONS

5.1) FLFPR in Rural vs Urban - An Overview²

5.1.a)Empirical Analysis

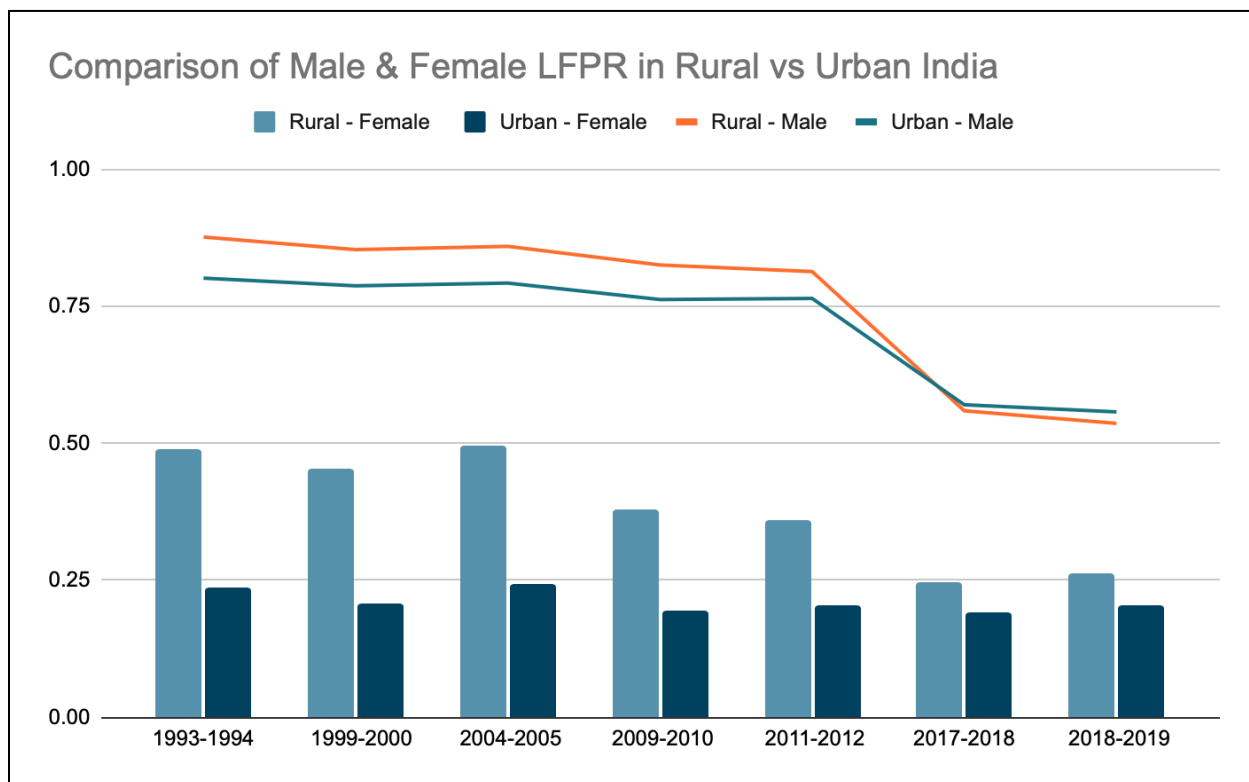


Figure 1 Source: National Sample Survey Office

Key Observations:

- FLFP is consistently lower in urban areas as compared to rural areas
- Differences in MLFP in rural and urban are far lower in comparison to FLFP

² **Rural** - population density of up to 400 per square kilometre, clear surveyed boundaries but no municipal board and a minimum of 75% male working population involved in agriculture and allied activities.

Urban - minimum population of 5000, population density is at least 400 per square kilometre and at least 75% of the male working population engaged in non-agricultural activities.

Labour Force - Refers to the population which supplies or offers to supply labor for pursuing economic activities for the production of goods and services and, therefore, includes both 'employed'-and-'unemployed' persons/person-days.

FLFPR - India's female Labour Force Participation Rate (LFPR)—the share of working-age women who report either being employed, or being available for work.

where differences between rural and urban women is as high as 25% in 1994, which reduced to 6.5% in 2019.

- After a pattern of decline in participation rates between 1994 and 2000, a noticeable uptick in FLFPr is observed in 2004 - 2005, followed by a sharp decline between 2005 and 2010.
- After a gap in no data collection between 2012 and 2018 - another sharp decline is observed in overall participation rates of women from both rural and urban areas.

5.1.b) Qualitative Analysis

- 1) **The brief rise and subsequent fall in FLFPR in 2004-2005:** Can be attributed to the sudden surge of the female labour force (ILO). In the following year, MGNREGA was also introduced, with 50% of its employees being women, which could also be the reason for this increase (Ranade, 2018).
- 2) **Steep downtrend in both Rural and Urban between 2012 and 2017:** There are several gaps that exist in the methodology of conducting research by NSSO. For example, under the activity status, those women who are occupied with domestic work, free collection of goods are categorised as economically inactive even though they are involved with economic activities. For this reason, many studies question the credibility of the NSSO data. A separate study conducted in urban Delhi even went on to show that the NSSO data undermines the actual work participation of women (Andres et al., 2017).
- 3) The decline in LFP falling from 35.8% in 1994 to 20.2% in 2012 was likely driven in large part by more female attendance in education. We explore the relationship between literacy rates, education level and FLFP rates further ahead in this paper.
- 4) The large Difference in change in MLFPR versus FLFPR over the observed time period appears to indicate that factors other than availability /opportunity for jobs are the driving cause.
- 5) While the change in FLFPR for urban India is not steep, it is considerably lower as compared to urban MLFPR and far closer to rural FLFPR, again indicating that there are factors such as tertiary education, the income paradox and lack of enabling support

systems such as labour laws, safety at work etc. that limit increased participation. At the same time, there are factors such as transport, work from home opportunities and access to service jobs in healthcare, education, telecom, hospitality, government offices that actually encourage women to work. These push and pull factors possibly explain the relatively slow decline in urban FLFPR.

5.2) Employment by Status³

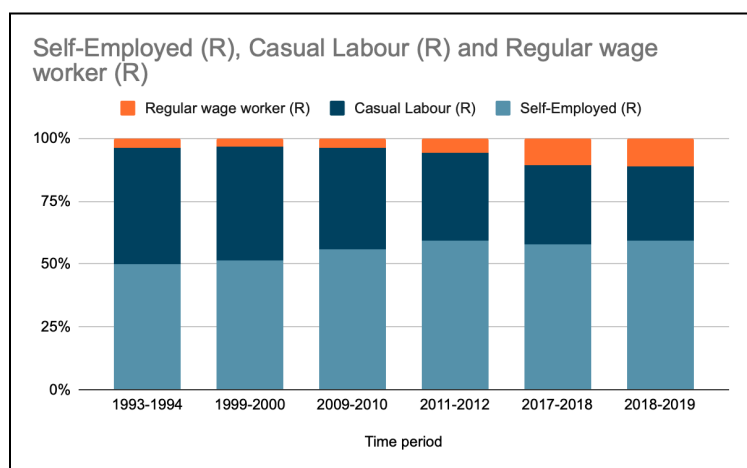


Figure 2 Source: National Sample Survey Office

³ **Self-employed** - Individuals who manage their own farm or non-farm operations or engage independently in a profession or trade on their own-account or with one or a few partners. The 2 important factors of self-employed people are that they have economic independence (get to choose which market, finances and scale of operation) and autonomy (with respect to how, when and where to produce). Their earnings consist of profits from their operations and as remuneration for labour.

Casual - People working casually in others farm and non-farm operations and receive wages in return in keeping with the terms of the periodic work contract.

Regular - Individuals who work for others' farm and non-farm operations and receive a regular salary. This category includes those who receive time wages, piece wages and paid apprentices both full time and part-time.

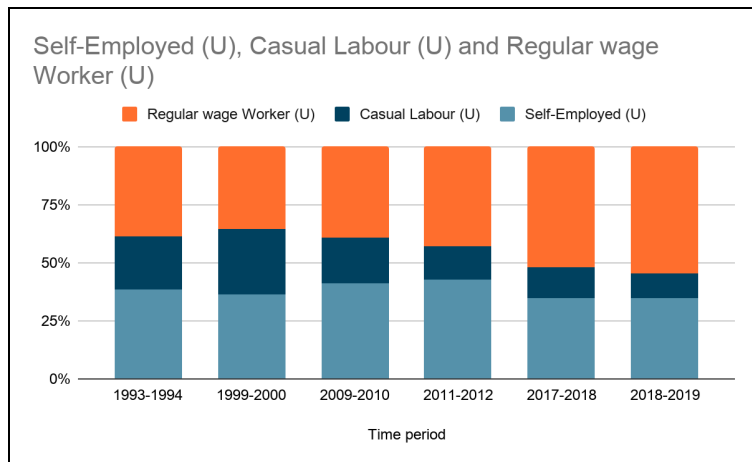


Figure 3 Source: National Sample Survey Office

Key Observations:

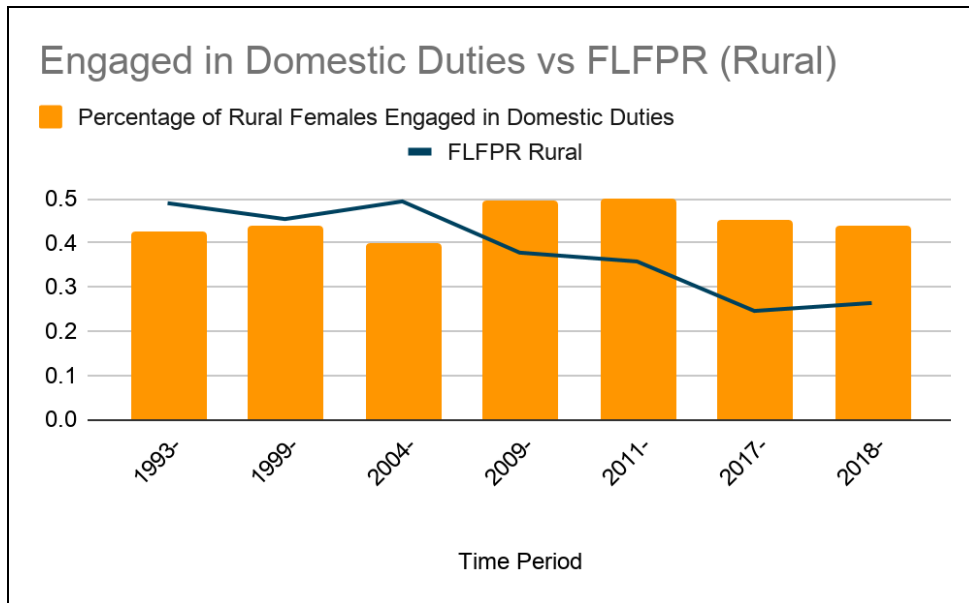
- The proportion of female salaried workers has been progressively expanding since 1994, although the rates in rural areas have been low (9.4 per cent in 2012).
- Self-employed and Casual Labour dominate rural employment with regularly wages workers only marginally increasing from 4% in 1993 to 11% in 2018.
- On the contrary, regular wage workers dominate urban employment alongside self-employment.

Exploratory Analysis:

- The portion of self-employed and casual workers is quite high in rural areas since most families have their own plots of land to cultivate and take care of.
- The drop in casual labour can be attributed to women moving to self-employment or salaried.
- The scope for regular wage employees in urban areas is larger as the population has access to good education and can contribute to the labour force. As they have better skills, they look for work that pays well and hence the percentage of regular wage workers has increased.
- Casual Labour varying in urban areas can be attributed to the rural to urban migration.

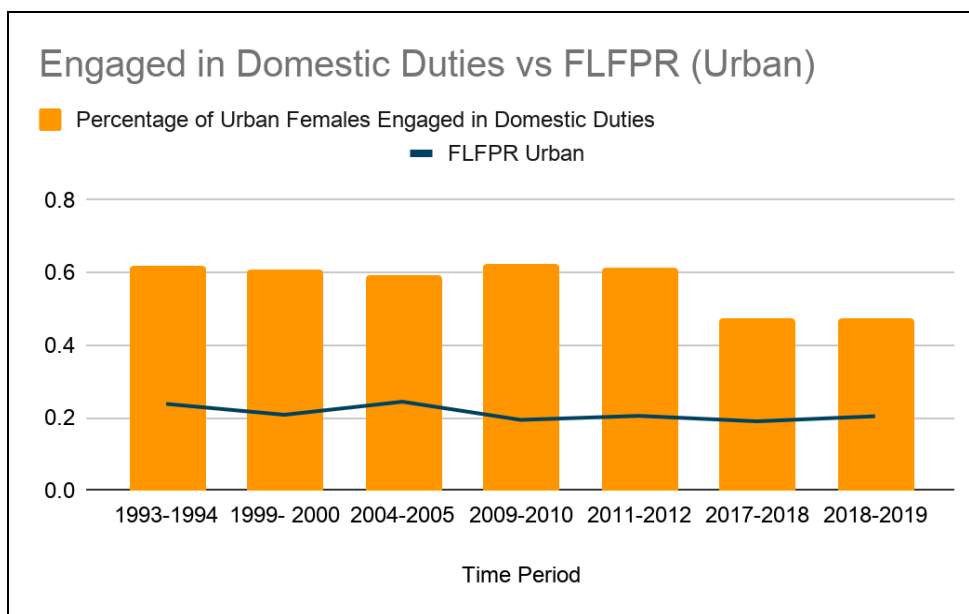
5.3)

Domestic Duties



Participation in Rural Vs Urban⁴

Figure 4 Source: National Sample Survey Office



Domestic Duties - This refers to work done inside the household to make sure that the basic needs of household members are met. This includes cooking, cleaning, taking care of children or other dependent family members.

Figure 5 Source: National Sample Survey Office

Key Observations:

- Rural - the percentage of women involved with domestic work has increased slightly from 42.4% in 1993 to 44.1% in 2018.
- Urban - this number had declined from 61.9% in 1993 to 47.4% in 2018 but remains significantly high.

Factors Leading to Increase in Domestic Duties in Rural India

The technological advancements made in agriculture have caused women to lose out on their jobs thereby causing a decline in the FLFP. Women don't shift into the manufacturing sector as with their low education levels, they cannot compete in this sector. Lastly, patriarchal norms dictate that they must only do domestic work..

Factors Leading to Decrease in Domestic duties Urban India

In urban areas, a lot of informal employment exists, leading to the formation of a rising informal sector. Due to the unpredictable conditions of agriculture, people migrate from rural areas to urban in hopes of finding a job. With the rise in the informal sector, urban women hire these workers to do their domestic duties, paying them a minimum wage. Thus decreasing the time urban women spend on domestic duties (Kapsos, 2014).

5.4) The Impact of Literacy and Education on FLFPR⁵

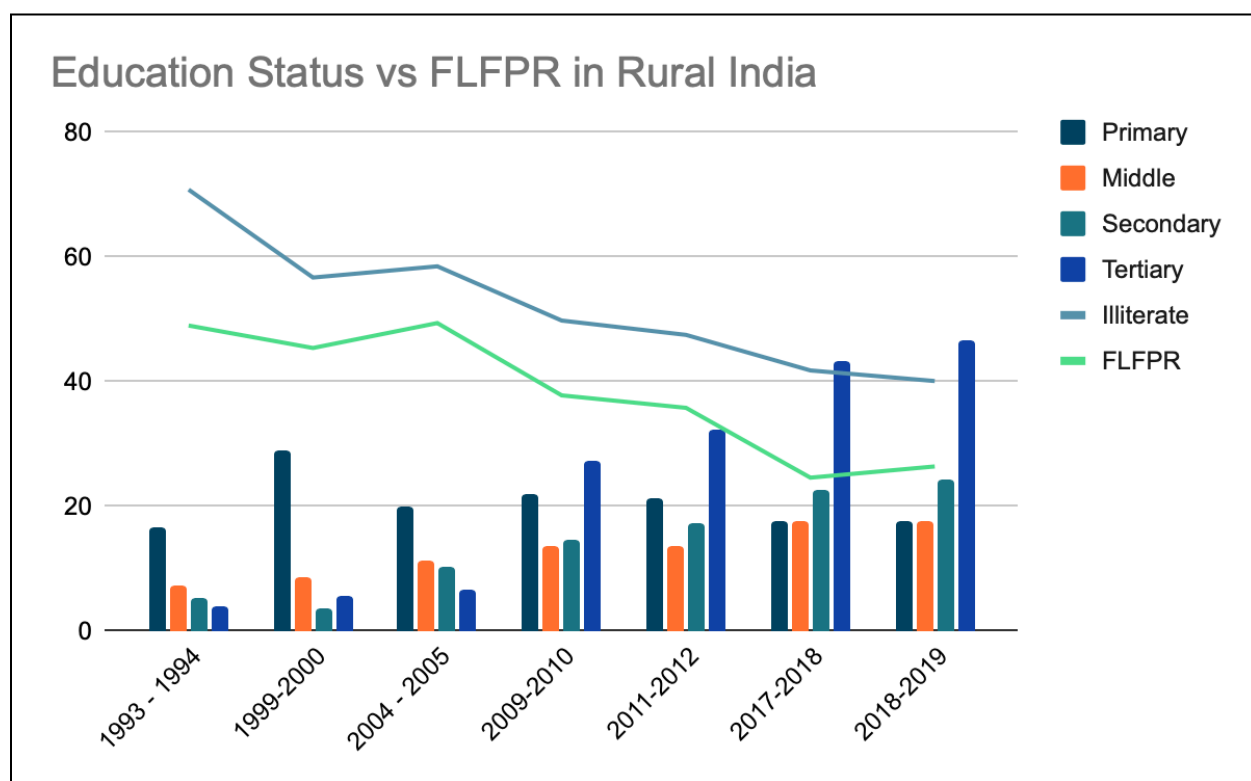


Figure 6 Source: National Sample Survey Office

⁵ **Literacy** - A literate person is defined as one who could read and write a simple message in any language with understanding.

Primary - Primary education in India refers to children aged 6-10 years (class 1-5).

Middle - Middle school refers to children aged 11-14 (class 6-9).

Secondary - Secondary education refers to children aged 15-18 (class 10-12).

Tertiary - Tertiary education refers to higher education institutions including colleges, universities and vocational courses.

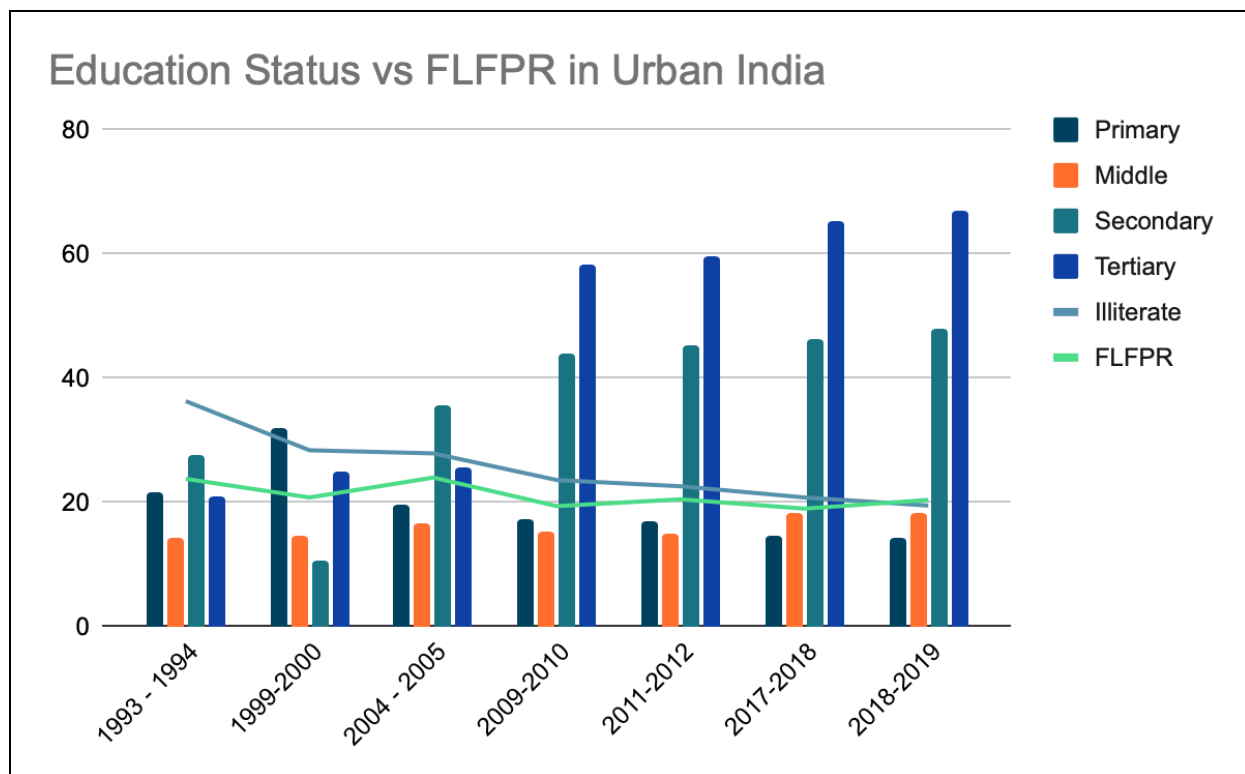


Figure 7 Source: National Sample Survey Office

Key Observations:

- In rural India By 2018-2019 - illiteracy levels had been contained at 40.1% down from 70.8% illiteracy in 1994-94 . In the corresponding years, FLFPR reduced from 49% in 93-94 to 26.4% in 2018-19.
- For rural India - While the increase in enrollment data may achieve universal primary education targets for the government, it does not necessarily mean much for women participation in work. Likewise, increased enrollment in middle and secondary education has not necessarily led to corresponding increases in FLFPR.
- In urban India - reported illiteracy among women at 36.6% in 93-94 reduced to 19.5% in 2018-19.
- A whopping 46 % of Urban women pursued tertiary education in 2018-2019 versus 4% in 1993-94.
- The increase in tertiary education in urban India and a corresponding relatively stable FLFP trendline with nominal observed changes in FLFPR suggest that education may be a contributing factor:

ANOVA 1.1: Does a statistically significant relationship exist between literacy and FLFPR in Rural and Urban India?

Null Hypothesis	There is no statistically significant relationship between Literacy and FLFPR.
Alternative Hypothesis	There is a significant relationship between Literacy and FLFPR.
Significance Level (Alpha)	0.05
No. of Observations	7*

*Table 2.1 and 2.3 in the Appendix

Results⁶

Rural:

- The seven observations in illiteracy rate had an average value of **133908068**, while the subsequent observations in FLFPR had an average value of **95108231**.
- P-value = **0.000** < Alpha = 0.05; we reject the null hypothesis.
- Inference: Literacy seems to deter participation of women at work.

Urban:

- The seven observations in illiteracy rate had an average value of **27825300** while the subsequent observations in FLFPR had an average value of **23947507**.
- P-value = **0.4010** > Alpha = 0.05; therefore, we do not reject the null hypothesis.
- Inference: Increase in literacy rates don't impact FLFPR

⁶ Full analysis results in Table 6.1 to Table 6.4

ANOVA 1.2 : Does a statistically significant relationship exist between Tertiary education and FLFPR in Rural and Urban India?

Null Hypothesis	There is no statistically significant relationship between TE and FLFPR.
Alternative Hypothesis	There is a significant relationship between TE and FLFPR.
Significance Level (Alpha)	0.05
No. of Observations	7*

*Refer to Table 2.1 and 2.3 in the Appendix

Results⁷

Rural:

- The seven observations in TE rate had an average value of **71377847** while the subsequent observations in FLFPR had an average value of **95108231**.
- P-value = **0.3591** > Alpha = 0.05; therefore, we do not reject the null hypothesis.
- Inference: Tertiary education has no bearing on FLFPR for rural women.

Urban:

- The 7 observations in TE rate had an average value of **61018956** while the subsequent observations in FLFPR had an average value of **23947507**.
- P-value = 0.067 > Alpha = 0.05; Alpha is only marginally less than p-value 0.067; therefore, we do not reject the null hypothesis.

⁷ Full analysis results in Table 6.5 through Table 6.8

- Inference: Although, TE has no statistically significant bearing on FLFPR for urban women - given how close the P-value is to the alpha - there is a likelihood that a future determination based on higher number of observations may yield a different result.

5.5) Per Capita Income VS FLFPR⁸

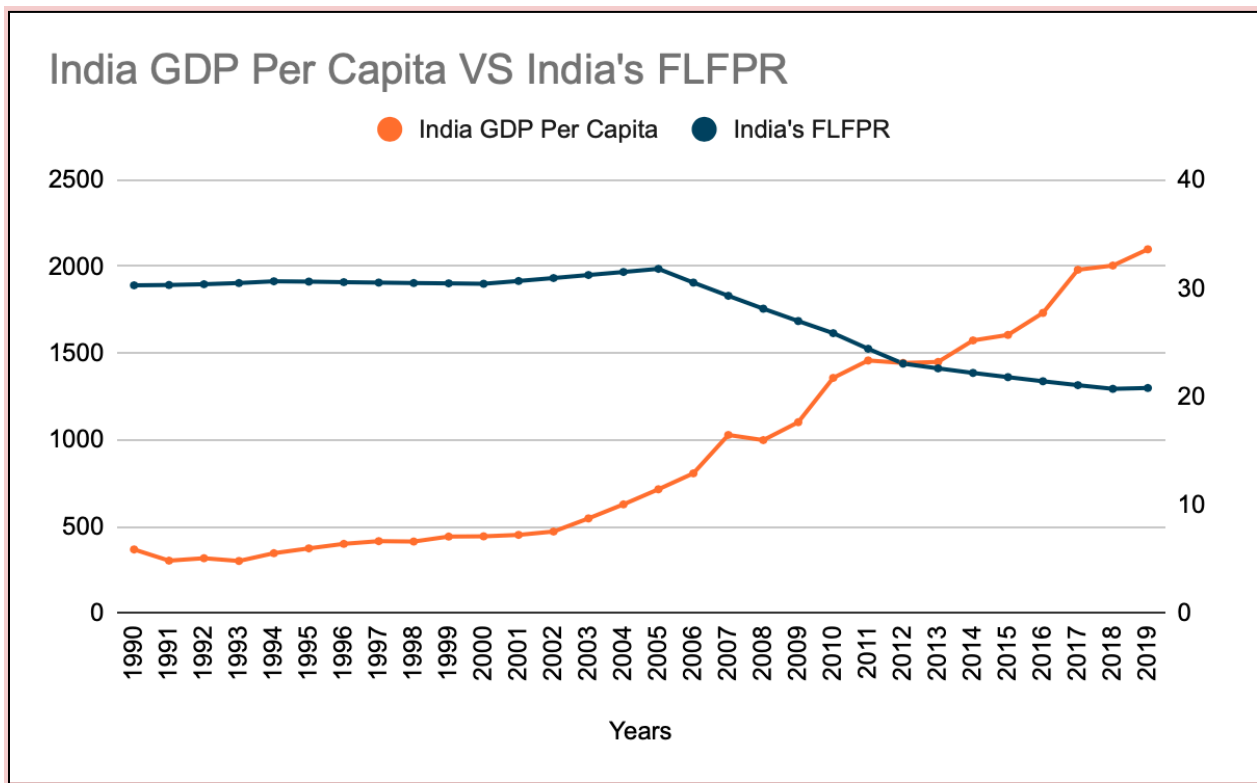


Figure 8 Source: World Bank Data

Key Observations:

- Figure 8 seems to indicate an inverted V relationship between FLFPR and per capita income

⁸ GDP Per Capita(\$) - GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.

- This is somewhat similar to other studies (e.g. Rao et. al. (2010) which also suggested that the classical U shaped pattern is not observed in India. Infact , the pattern suggests a positive effect of family income on LFPR almost tending towards an inverted V in later years, with the inflection point coming at very high levels of per capita consumption.

Analysis:

This may be explained by the typical Indian mindset for educating children in regular schools and colleges with an increase in purchasing power and the need to maintain a lifestyle which may not come with a single income household. Thus, increasing the percentage of FLFPR. At the inflection point; high levels of male income, wage differentials coupled with the need for women to tend to domestic duties leads to women withdrawing from active working without compromising on their lifestyle expectation.

6) Limitations of the Study

- Lack of available data in absolute values. Data in percentages has limited application for inferential statistics.
- Limited inclusion of variables for analysis due to non availability of reliable data for example per capita income separately for rural and urban India, age of marriage and age of bearing children, number of children, societal and cultural norms and wage differentials .
- Typically, a pooled probit regression model would enable a prediction of FLFPR based on individual, household and regional characteristics. However, with the lack of data and the ongoing COVID situation, back migration and the changing nature of work, it would not yield much meaning.

7) Recommendations

The way forward: Bringing women back to work

In India, a woman's decision to work is deeply influenced by her familial, educational, social and marital status. Targeted actions by the government and the corporate sector and concerted extensive media and civil society initiatives are required to increase FLFPR.

Suggested Government Actions:

- Set Course-wise gender-based targets for vocational skills.
- Monitor Measurable learning outcomes for girls at School
- Provide financing to SMEs to finance mandatory work benefits to incentivise woman hiring
- Increase Gender Budget allocation from the present 1% of GDP.
- Consciously bring in women at all echelons of the government machinery.
- Announce diversity targets for the corporate sector.
- Incentivise India's craft and handmade goods sector, micro farming & self-employment

Suggested Corporate Actions:

- Rather than a diversity target at a company level ; provide staggered targets across functions and hierarchy.
- Re-orient job stereotypes . Change the perception of certain tasks being a “woman's job”.

- Provide safe , secure and hygienic workplaces.
- Penalise for toxic masculinity at work.
- Evaluate amenable locations, part time jobs that suit women.

Civil Society & Media: Influence attitudes and choices

- Encourage women to join technical and vocational training programs;
- Set up social safe spaces for women who mind their children when they are at work.
- Highlight female role models in mainstream media, in schools, colleges and celebrate the success of professional women.

8) Conclusion

In 2017, India was the world's fastest-growing major economy at a GDP growth above 7% p.a. 2017 was also the year in which India's FLFPR fell to its lowest level. As per NSSO published data: the FLFPR peaked at 33% in 1972-73 . At 17.5% in 2017-18, it was the lowest ever in Indian history.

Declining FLFPR : the Rural and Urban divide

Rural India

In rural India, the women labour force is employed in labour-intensive, home-based, and informal work, concentrated in low-productivity sectors.

1. The increased mechanization of traditionally labor-intensive tasks in agriculture, manufacturing and mining have led to a loss in jobs traditionally done by women.
2. **The Income Paradox:** Rural Families take pride when female members withdraw from work, demonstrating that male members can provide a comfortable life for the family. The wage differential among men and women for similar jobs propels men to work and women to withdraw when household wealth increases or when elderly care and child care needs arise.
3. **Marriage and domestic work:** Even today, women in India spend up to 352 minutes per day on domestic work, 577% more than men (52 minutes) (OECD, 2017). Amongst rural women, the largest declines in FLFPR over the 1993–2018 period are below 34-years, child-bearing age categories. This segregation of gender-specific activities is further aggravated by a lack of family support for women's careers.
4. The presence of an emerging middle class, coupled with male education, and improved literacy levels slows down the increase in LFPR.

Urban India

5. For urban women, the service sector is a large employer. However, women are employed in other professions such as teaching, which offer only limited scope for career progression.
6. **Lack of** flexible work arrangements, institutional support for childcare and the maternity

Act (amendment (2016)) places the entire cost burden of women's leave on employers disincentivizing women's hiring in the formal sector.

7. The **nature of women's education** tends to be generic rather than skill based .women lose out on opportunities in fast growing sectors owing to an increasing demand for technically skilled labour, and availability of males with higher digital literacy , vocational and functional expertise .
8. The widely held belief that a woman's primary place should be in the home is reinforced in **media and education**. Rising religious and caste fundamentalism also affects women's participation in paid work. Societal norms limit the range of jobs considered acceptable for women.
9. Inflexible working conditions, gender biases in hiring and promotions, wage differentials, and low female representation at leadership levels contribute to women leaving jobs in their mid 30s.
10. **Education of the spouse (male)** has a larger negative effect. Most likely this is because of the gap in earnings of men and women. Women tend not to work if married to highly educated males who earn a substantial income.

9) References

- ❖ Agarwal, N. (2017). An Explanation for the Puzzling Decline of Female Labor Supply in India.
- ❖ Andres, L., Dasgupta, B., Joseph, G., Abraham, V., & Correia, M. (2017, April). *Reassessing Patterns of Female Labor Force Participation in India*. <http://documents1.worldbank.org/curated/en/559511491319990632/pdf/WPS8024.pdf>.
- ❖ Arvind, L. (2020, January 03). Do the new labour reforms help women? Retrieved April 06, 2021, from <https://www.bloomberquint.com/opinion/do-the-new-labour-laws-reforms-help-women>
- ❖ Bhalla, S., & Kaur, R. (2011, September 21). Labour force participation of women in india: Some facts, some queries. Retrieved February 4, 2021, from <http://eprints.lse.ac.uk/38367/>
- ❖ Borate, N. (2019). The benefits women are entitled to and the rights they can claim under maternity. *mint*. Retrieved 29 March 2021, from <https://www.livemint.com/money/personal-finance/the-benefits-women-are-entitled-to-and-the-rights-they-can-claim-under-maternity-1557655754106.html>.
- ❖ Deshpande, A. (2020). What Does Work-From-Home Mean for Women?. *Economic and Political Weekly*. Retrieved 29 March 2021, from <https://www.epw.in/engage/article/what-does-work-home-mean-women>.
- ❖ Hnatkovska, V., & Lahiri, A. (2013, February). The Rural-Urban Divide in India. Retrieved April 04, 2021, from <https://www.theigc.org/wp-content/uploads/2014/09/Hnatkovska-Lahiri-2012-Working-Paper-March.pdf>
- ❖ Kapsos, S., Silberman, A., & Bourmpoula, E. (2014, August). *Why is female labour force participation declining so sharply in India*. International LabourOffice. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_250977.pdf.
- ❖ Magazine, A. (2020, September 27). Explained: In the three new Labour codes, what changes for workers & HIRERS? Retrieved April 06, 2021, from <https://indianexpress.com/article/explained/govts-new-versions-of-labour-codes-key-proposals-and-concerns-6603354/>

- ❖ Mahapatro, S. (2013, February 14). Declining trends in female labour force participation in India: Evidence from nsso. Retrieved February 4, 2021, from <https://mpira.ub.uni-muenchen.de/44373/>
- ❖ Mehrotra, S., & Parida, J. (2017, June 07). Why is the Labour Force Participation of Women declining in India? Retrieved January 30, 2021, from <https://www.sciencedirect.com/science/article/abs/pii/S0305750X17301663>
- ❖ Neff, D. F., Sen, K., & Kling, V. (2012). The puzzling decline in rural women's labor force participation in India: a reexamination.
- ❖ OECD. (2013). What makes urban schools different?. Oecd.org. Retrieved 6 April 2021, from <https://www.oecd.org/pisa/pisaproducts/pisainfocus/pisa%20in%20focus%20n28%20%28eng%29--FINAL.pdf>.
- ❖ Ranade, A. (2018, June 26). *Reversing women's decline in the Indian labour force*. mint. <https://www.livemint.com/Opinion/v80I9EwDz6oyklST8ebqMM/Reversing-womens-decline-in-the-Indian-labour-force.html>.
- ❖ Sanghi, S., Vijay, S., & Srija, A. (2015). Decline in Rural Female Labour Force Participation in India: A Relook into the Causes. *Vikalpa*, 40(3).
- ❖ Singh, A., & Garces-Ozanne, A. (2020). Why is India's Female Labour Force Participation Falling? The Role of Agricultural Mechanisation and Security Risks. *Demography India*, 49(2), 173-190.
- ❖ Singh, H. (2016). Increasing rural to urban migration in India: A challenge or an opportunity. *International Journal of Applied Research*. doi:<http://www.shram.org/uploadFiles/20170621121921.pdf>
- ❖ Venugopal, V. (2020, May). Women to bear brunt of new labour laws: Experts. Retrieved April 06, 2021, from <https://economictimes.indiatimes.com/news/politics-and-nation/women-to-bear-brunt-of-new-labour-laws-experts/articleshow/75794353.cms?from=mdr>
- ❖ Vijayraghavan, K., & Bhattacharyya, R. (2020). For most women, it's WFH and work at home; companies sensitising male employees to pitch in and help. The Economic Times. Retrieved March 2021, from <https://economictimes.indiatimes.com/magazines/panache/for-most-women-its-wfh-and-work-at-home-companies-sensitising-male-employees-to-pitch-in-and-help/articleshow/78528672.cms?from=mdr>

- ❖ Kamdar, B. (2020, July 31). *Women Left Behind: India's Falling Female Labor Participation*. The Diplomat. <https://thediplomat.com/2020/07/women-left-behind-indias-falling-female-labor-participation/>.
- ❖ Sharma, A. (2021, March 21). *Here's why women's education doesn't translate to employment in India*. Business Insider. <https://www.businessinsider.in/india/article/heres-why-womens-education-doesnt-translate-to-employment-in-india/slidelist/81602254.cms#slideid=81602393>.

10) Appendix

Table 1.1: Comparison Between Female Labour Force Participation Rates in Urban and Rural India

Time Period	Rural	Female Population Rural	Urban	Female Population Urban
50th Round - 1993-1994	49.0%	181,475,969	24%	61,470,754
55th Round - 1999-2000	45.4%	212,916,521	20.80%	76,299,648
61st Round - 2004-2005	49.4%	233,185,295	24%	84,587,121
66th Round - 2009-2010	37.8%	248,410,467	19.4%	98,977,331
68th Round - 2011-2012	35.8%	263,472,205	20.5%	112,682,309
PLFS 2017-2018	24.60%	338,780,895	19.00%	181,207,199
PLFS 2018-2019	26.40%	353,842,633	20.40%	194,912,177

Table 1.2 Male Participation Rate in Rural and Urban India

Time Period	Rural	Male Rural Population	Urban	Male Urban Population
1993-1994	87.60%	186,303,490	80.0%	67,732,457
1999-2000	85.3%	216,440,704	78.70%	82,945,307
2004-2005	85.9%	234,481,448	79.0%	91,896,621
2009-2010	82.5%	253,962,240	76.2%	106,490,000
2011-2012	81.3%	267,358,777	76.4%	119,618,834
2017-2018	55.9%	-	57.0%	-
2018-2019	53.6%	-	55.7%	-

Table 2.1: Female Participation Rate by Education for Rural India

	Rural Female				
	Illiterate	Primary	Middle	Secondary	Tertiary
1993 - 1994	70.8%	16.6%	7.3%	5.3%	4%
1999-2000	56.7%	29.1%	8.5%	3.6%	5.6%
2004 - 2005	58.5%	19.9%	11.3%	10.2%	6.7%
2009-2010	49.8%	21.9%	13.5%	14.8%	27.3%
2011-2012	47.5%	21.3%	13.8%	17.4%	32.3%
2017-2018	41.8%	17.7%	17.8%	22.7%	43.4%
2018-2019	40.1%	17.8%	17.7%	24.4%	46.6%

Table 2.3: Female Participation Rate by Education for Urban India

Urban Female					
	Illiterate	Primary	Middle	Secondary	Tertiary
1993 - 1994	36.3%	21.6%	14.3%	27.7%	21%
1999-2000	28.4%	32%	14.6%	10.7%	24.9%
2004 - 2005	27.9%	19.7%	16.8%	35.6%	25.5%
2009-2010	23.6%	17.2%	15.3%	43.9%	58.3%
2011-2012	22.6%	17%	15.1%	45.3%	59.5%
2017-2018	20.8%	14.5%	18.3%	46.4%	65.4%
2018-2019	19.5%	14.3%	18.2%	48%	66.9%

Table 3.1: Female Employment by Status in Rural India

Rural			
Time period	Self-Employed (R)	Casual Labour (R)	Regular wage worker (R)
1993-1994	50.00%	46.10%	3.90%
1999-2000	51.30%	45.30%	3.40%
2009-2010	56.00%	40.00%	4.00%
2011-2012	59.30%	35.10%	5.60%
2017-2018	57.70%	31.80%	10.50%
2018-2019	59.00%	29.30%	11%

Table 3.2: Female Employment by Status in Urban India

Urban			
Time period	Self-Employed (U)	Casual Labour (U)	Regular wage Worker (U)
1993-1994	38.40%	23.10%	38.50%
1999-2000	36.40%	28.10%	35.50%
2009-2010	41.00%	20.00%	39.00%
2011-2012	42.80%	14.30%	42.80%
2017-2018	34.70%	13.10%	52.10%
2018-2019	34.50%	10.70%	54.70%

Table 4: Per Capita Income

Years	India GDP Per Capita	India's FLFPR
1990	367.5566093	30.27000046
1991	303.0556053	30.29999924
1992	316.9539279	30.37000084
1993	301.1590042	30.47999954
1994	346.1029503	30.63999939
1995	373.76648	30.61000061

1996	399.9500768	30.55999947
1997	415.493797	30.52000046
1998	413.2989342	30.47999954
1999	441.9987596	30.45000076
2000	443.3141934	30.40999985
2001	451.5730011	30.67000008
2002	470.9867859	30.94000053
2003	546.7266145	31.21999931
2004	627.7742473	31.5
2005	714.8610135	31.79000092
2006	806.7532806	30.52000046
2007	1028.334771	29.29999924
2008	998.522339	28.11000061
2009	1101.96084	26.96999931
2010	1357.563719	25.85000038
2011	1458.103527	24.40999985
2012	1443.879529	23.04000092
2013	1449.605912	22.60000038
2014	1573.881492	22.18000031
2015	1605.605434	21.79000092
2016	1732.564262	21.40999985
2017	1981.65105	21.04999924
2018	2005.863005	20.70999908
2019	2099.599048	20.79000092

Table 5.1: Females Engaged in Domestic Duties in Rural India

Time Period	Percentage of Rural Females Engaged in Domestic Duties	FLFPR Rural
1993-1994	42.40%	49.0%
1999- 2000	43.90%	45.4%
2004-2005	39.80%	49.4%
2009-2010	49.40%	37.8%
2011-2012	49.90%	35.8%
2017-2018	45.10%	24.60%

2018-2019	44.10%	26.40%
-----------	--------	--------

Table 5.2: Females Engaged in Domestic Duties in Urban India

Time Period	Percentage of Urban Females Engaged in Domestic Duties	FLFPR Urban
1993-1994	61.90%	24%
1999- 2000	60.70%	20.80%
2004-2005	59.30%	24%
2009-2010	62.10%	19.4%
2011-2012	61.10%	20.5%
2017-2018	47.30%	19.00%
2018-2019	47.40%	20.40%

Table 6.1: Relationship between FLFP and Literacy rate in Rural India (Summary)

Groups	Count	Sum	Average	Variance
Column 1	7	665757622.2	95108231.74	97921774517294
Column 2	7	937356474.3	133908067.8	62969286580707.6

Table 6.2: ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between groups	5.296E+15	1	5.269E+15	65.49767808	0.00000333938205	4.747225347
Within groups	965346366588011	12	80445530549000.9			
Total	6.23434E+15	13				

Table 6.3: Relationship between FLFPR and Literacy rate in Urban India (Summary)

Groups	Count	Sum	Average	Variance
Column 1	7	167632551.23	23947507.32	91035484460381
Column 2	7	194777102.03	27825300.29	47819296707322

Table 6.4: ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
---------------------	----	----	----	---	---------	--------

Between groups	52630474152412.9	1	52630474152412.9	0.758064990053857	0.401017209775185	4.74722534672252
Within groups	833128687006222	12	69427390583851.9			
Total	885759161158635	13				

Table 6.5: Relationship between FLFPR and Tertiary education in Rural India(Summary)

Groups	Count	Sum	Average	Variance
Column 1	7	665757622	95108231.7	9.7922E+13
Column 2	7	499644934	71377847.7	4.2373E+15

Table 6.6: ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between groups	1.971E+15	1	1.971E+15	0.90928139	0.35911927	4.74722535
Within groups	2.6011E+16	12	2.1676E+15			
Total	2.7982E+16	13				

Table 6.7: Relationship between FLFPR and Tertiary education in Urban India(Summary)

Groups	Count	Sum	Average	Variance
Column 1	7	167632551	23947507.3	9.1035E+13
Column 2	7	427132699	61018956.9	2.3004E+15

Table 6.8: ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between groups	4.81E+15	1	4.81E+15	4.0227583	0.06797384	4.74722535
Within groups	1.4348E+16	12	1.1957E+15			
Total	1.9158E+16	13				