

Female Labour Force Participation and Economic Growth in India: A Cross Sectional Analysis using Census Data

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ABSTRACT

Although women's labor force participation leans to increase with economic development, the relationship is not clear-cut or steady at the country level. There is considerable amount of variation across developing countries in terms of female labor force participation. Some of the factors behind these variations are social and cultural while others are economic and political. This paper looks into the relationship between per capita Gross State Domestic Product (GSDP) and Female labour force participation rate across the various states in India based on the 2001 and 2011 census data. A cross sectional analysis is done and it shows how a developing nation like India is an outlier among other developing nations in the establishing the above relationship.

Key words: Female Labour Force Participation, economic growth, U-shape Hypothesis

1.1 Introduction

Women make up a little over half the world's population, but their contribution to measured economic activity, growth, and well-being is far below its potential, with serious macroeconomic consequences. Despite significant progress in recent decades, labor markets across the world remain divided along gender lines more specifically women and men distinctions, and progress toward gender equality seems to have stalled. Female labor force participation (FLFP) has remained lower than male participation, women account for most unpaid work, and when women are employed in paid work, they are overrepresented in the informal sector and among the poor. They also face significant wage differentials vis-à-vis their male colleagues. In many countries discrimination in the labor market restrict women's options for paid work, and female representation in senior positions and entrepreneurship remains low.

Women's participation in the labor market varies greatly across countries, reflecting differences in economic development, social norms, education levels, fertility rates, and access to resources, childcare and other supportive services. A famous hypothesis known as U-Shaped Hypothesis speaks about the relationship between female labour force participation rate and economic development.

What is the U-shaped hypothesis?

The U-shaped hypothesis describes the correlation of the female labor force participation rate with economic development (structural shifts in economic activity and changes to household labor supply and attitudes about women working outside the home). In its basic form, the hypothesis posits that female participation rates are highest in poor countries, where women are engaged in subsistence activities, and fall in middle-income countries because of the transition of (mainly) men to industrial jobs. As education levels improve and fertility rates fall, women are able to join the labor force in response to growing demand in the services sector.

This is a stylized fact, but it is not robust to different data sets and econometric methodologies.

This paper revisits the relationship between female labour force participation rate and economic growth in the context of the Indian economy taking 2001 and 2011 census data on various states and UTs.

1.2 Theoretical background

Given the complexity of the factors driving female labour force participation (namely growth, education, fertility, and the cultural and normative context of society), an expansive literature has grown around the nature of female labour force participation and its connection with development and economic growth. Among the most discussed phenomena is the U-shaped relationship between economic development and women's labour force participation rates (Boserup, 1970; Fatima and Sultana, 2009; Goldin, 1994; Mammen and Paxson, 2000; Pampel and Tanaka, 1986; Schultz, 1990; Tansel, 2001). However, the evidence for such a relationship has been widely debated (see, for example, Gaddis and Klasen, 2014) and the finding is more robust for cross-country (static) comparisons, while individual countries display great heterogeneity in how

female labour force participation rates change over time, in response to both short and long-term movements in economic growth and other factors.

Claudia Goldin (1994) had stated that economic development leads to U – shaped female labour participation rate curve in which it has been hypothesized that FWPR decline initially with economic development, and then plateau before rising again giving it the U shape. This is argued as being reflective of the structural shifts in the economy, changing influence of income and substitution effects, and an increase in education levels of women in the population.

A large number of empirical studies based on the historical experiences of developed countries and other multiple country studies (including Boserup, 1970; Durand, 1975; Goldin, 1990; Mammen and Paxson, 2000; Mincer, 1985; Pampel and Tanaka, 1986; Schultz, 1991; Tam, 2011) document the much-discussed U-shaped relationship (although the U-shape is not a necessary outcome of the basic static labour supply model) between female labour force participation and economic development.

Empirical studies at the individual level show that in the case of India the U-shaped relationship is not (yet) evident (Bhalla and Kaur, 2011; Lahoti and Swaminathan, 2013; Rao et al., 2010), while others find such a relationship in the case of Pakistan (Mujahid et al., 2013). Though the fall in participation rates in India is puzzling, such trends have been witnessed elsewhere too, notably in Turkey, which experienced declining participation rates among women, from 36.1 per cent in 1989 to 23.3 per cent in 2005. This downward trend has been explained by the process of urbanization and structural transformation: as households moved to urban areas and husbands shifted out of agriculture, resulting in a withdrawal of women from the labour force (reflecting an increased engagement in domestic duties) (World Bank, 2009).

With this background and an aim to check the U shape relationship between FLPR and economic development the present paper looks in to the relationship between FLPR and Per capita GSDP for India taking the data from 2001 and 2011 census.

1.3 Objective

The objective of this paper is to examine the relationship between Female Labour Force Participation Rate (FLFPR) and per capita GSDP for different states in India.

These are the following research questions:

- (a) Is there any relationship between the Female Labour Force Participation Rate (FLFPR) and per capita GSDP of the different states in India?
- (b) Is there any relationship between the female literacy rate and per capita GSDP of the different states in India?

1.4 Hypothesis

The following hypothesis emerges from the objective:

Null Hypothesis: There is no significant relationship between Female Labour Force Participation Rate (FLFPR) and per capita GSDP for different states in India.

1.5 Methodology

This paper is based on secondary data collected from the 2001 and 2011 Census, Ministry of Statistics and Programme Implementation, CSO and NITI aayog. The sample consists of the various States and Union Territories of India. The variables are female labour force participation rate(FLFPR), GSDP and Female Literacy Rate (FLR).

For the 2001 census data, 1993-94 constant prices are taken and for 2011 census data, 2004-05 constant prices are taken for GSDP. 4 UTs are omitted while running the regression due to lack of data.

The regression function is of the form:

$$FLFPR = f(GSDP, FLR)$$

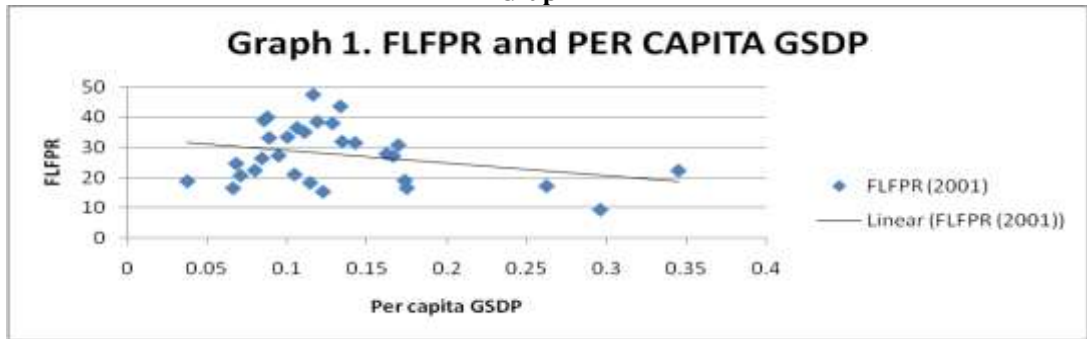
The regression equation is:

$$FLFPR_{it} = \alpha LNGSDP_{it} + \beta FLR_{it} + \gamma$$

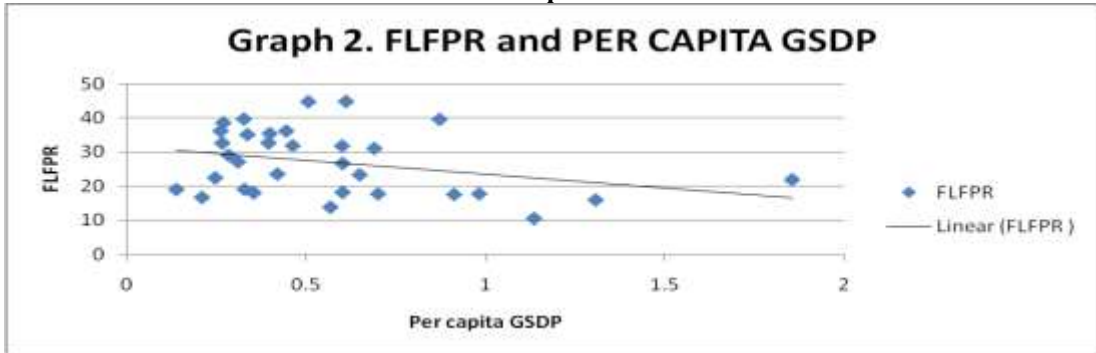
1.6 Findings

From both graph 1 and graph 2 it is clear that there is a inverse relationship between FLFPR and per capita GSDP.

Graph 1



Graph 2



Results of the regression model (for 2001):

| SUMMARY OUTPUT | |
|------------------------------|-------------|
| <i>Regression Statistics</i> | |
| Multiple R | 0.387680857 |
| R Square | 0.150296447 |
| Adjusted R Square | 0.087355443 |
| Standard Error | 9.117309914 |
| Observations | 30 |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
|-----------------|---------------------|-----------------------|---------------|----------------|
| Intercept | 23.2444076 | 7.891984806 | 2.945318 | 0.006567 |
| per capita GDSP | -66.23114669 | 30.44855897 | -2.17518 | 0.038545 |
| FLR (2001) | 0.224626635 | 0.158204277 | 1.419852 | 0.167095 |

Here the intercept and coefficient of per capita GSDP both are significant. The coefficient of per capita GSDP is negative stating the inverse relationship between FLFPR and per capita GSDP.

Results of the regression model (for 2011):

| SUMMARY OUTPUT | |
|------------------------------|-------------|
| <i>Regression Statistics</i> | |
| Multiple R | 0.354056652 |
| R Square | 0.125356113 |
| Adjusted R Square | 0.065035844 |
| Standard Error | 9.186220454 |
| Observations | 32 |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
|-----------|---------------------|-----------------------|---------------|----------------|
| Intercept | 78.00996051 | 25.05270968 | 3.11383325 | 0.004131 |
| LN GSDP | -2.120819557 | 1.127008948 | -1.88181253 | 0.069933 |
| FLR | -0.249505491 | 0.172055967 | -1.45014146 | 0.157749 |

Here the intercept and coefficient of per capita GSDP both are significant. The coefficient of per capita GSDP is negative stating the inverse relationship between FLFPR and per capita GSDP.

1.7 Conclusion

In both the cases, data from 2001 and 2011 census it is clear there is a significant and negative or inverse relationship between FLFPR and per capita GSDP for different states in India.

However there is no significant relationship between the female literacy rate and FLFPR of the different states in India. The above findings lead to the conclusion that U-shape hypothesis is not valid for the Indian economy as on date.

Women's labour force participation and access to decent work are important and necessary elements of an inclusive and sustainable development process. Gender inequalities are not only rooted in the socio cultural norms of countries, they are also entrenched in the policy and institutional frameworks that shape the employment opportunities of female labour force.

In terms of the female labour force participation rates across states in India there is a decline and hence policy-makers should be more concerned about whether women are able to access better jobs or start a business, and take advantage of new labour market opportunities as a country grows (and hence contribute to the development process itself).

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