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GOLDIN'S 'U'- SHAPED CURVE HYPOTHESIS ON FEMALE LABOUR PARTICIPATION RATE: A CASE STUDY OF UTTARAKHAND

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ABSTRACT

Claudia Goldin gave the 'U' shaped female labour force function curve and she related it to the level of education and the emergence of the white collar sector jobs. The downward trend in the 'U' was due to rise in incomes because of expansion of markets and shift from farm activities to factory work; this she has denoted as the income effect on the female participation rate. However, when educational level rises and as the value of women's time in the market increases still further, they move back into the paid labour force, which is reflected in the rising portion of the U-shaped curve; this she has stated as the substitution effect. This paper is an attempt to study this income and substitution effect on female participation rates in Uttarakhand state. Uttarakhand is 13 years old and has seven districts out of thirteen with more women than men. This paper will make a comparative study of the rural and urban female labour participation rates of the state and correlate it to the level of education. There will be an attempt to conclude whether the state's women are at the declining portion of the U-curve or on the rising portion of the curve.

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INTRODUCTION

Investment in human beings is considered synonymous with economic growth of a family, society and nation. T.W. Schultz and Gary Becker pioneered on the importance of investment in humans through investment in education and health, which transforms humans into human capital. It has been proved in many studies that differences in educational attainment bring income differentials. T.W. Schultz has written "the beauty of accounting and discounting is that we can take the cost of education or we can transform the earnings from education and call it human capital". Investment in education of women is supposed to have longer and wider effects as women not only enhance their own earnings through educational attainments but also of their children as women are considered responsible for bearing and rearing of the children. Thus the educational attainments of women will increase the female participation rate in economic activities of the family and the nation. This paper has made an attempt to study the impact of educational attainments of females of Uttarakhand assessed in the form of literacy rate on the female work participation rate.

Theoretical Background

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, 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. Several studies have been conducted to study this U – shaped female labour participation curve. In an analysis of 1999-2000 NSSO data, U curve was found between employment and female educational status (Olsen and Mehta, 2006). This study showed illiterate and poorly educated women as well as with university degrees more likely to work than middle educated women. They have suggested that women of poor families work both at home and out of home. But when their income levels improve they leave their outside work and concentrate on their household activities. On the other hand the women of higher income groups with higher educational levels employ domestic help and concentrate more on their economic activities out of their homes. Similarly, on analysing NSSO data for 1993-94, it was found that educated women in India are less likely to be employed, which is attributed to a lack of employment

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opportunities rather than social norms restricting their movement (Das and Desai, 2003). Several researchers have found that a U-shaped relationship exists between educational status and women's labour force participation at any given point of time. It has been argued that women with low-levels of education are forced to work to contribute towards household income; while women with very high levels of education are attracted towards the labour market due to high wages (Klasen and Pieters, 2012). Women between the two groups face social stigmas associated with female employment without the economic need for their income. However, it has also been stated that in India this U – shaped curve of women's economic activity does not exist (Lahoti and Swaminathan, 2013). They have argued that U – shaped hypothesis is based on the argument that there is shift from agrarian society to manufacturing society in the first phase which leads to a fall in the female participation in the labour market and in the second phase the society moves to service sector which brings about re-entry of women in the workforce.

India has witnessed a different trend in the last decade as the society shifted from that of agricultural to a service oriented one. Lahoti and Swaminathan suggest that sometimes an inverted U – shaped curve may be observed for female participation rate but it also ceases to exist under controlled conditions. This paper is an attempt to study the impact of educational level on the female labour participation rate in the state of Uttarakhand formed on 09 Nov 2000 from Uttar Pradesh. According to the Census 2011, there has been an increase of around 16 lakh persons in Uttarakhand during 2001-2011. Increase among males has been around 8.12 lakh while among females it has been 7.85 lakh. The growth rate of females (18.9 per cent) is higher than that of males (18.8 per cent).

The rural population has seen an increase of 11.5 per cent, while the urban population has registered a growth of 39.9 per cent. 74.4 percent of Uttarakhand population lives in its villages. Of this 50.2 percent are women. Of the total female population 76.1 percent are rural women. In rural Uttarakhand, women are contributing up to 90 per cent of the total work in agriculture and animal care. The participation rate of women in the economy of the state is much higher than several states and also the national average.

Analysis

Attempt has been made in this paper to analyze the differences in the literacy rates in the 13 districts and their respective female work participation rates. Rural and urban female participation differences have also been analysed along 2001 and 2011 census. Uttarakhand is considered as female economy because whether be it the Separate State movement or the famous Chipkko movement the women of Uttarakhand have been the forerunners in them. In the overall ranking among all the states for female work participation rate, the rank of Uttarakhand was 11th in 1991 which fell to 17th in 2001 even though there has been remarkable improvement in the literacy rate of women of Uttarakhand, both at rural and urban levels. Given below in Table 1 is the percentage of total female workers, female main, marginal and non workers to total female population in Uttarakhand according to 2001 and 2011 census. The data in the above table shows that even though there has been a remarkable improvement in the literacy rate of females in Uttarakhand between 2001 – 2011 period, yet there has been a fall in the percentage of total female workers. In rural areas too, the same trend can be noticed.

Table 1. Female literacy Rate and Percentage of Female Total, Main, Marginal and Non – Workers according to 2001 and 2011 Census of Uttarakhand

Total/Rural/ Urban	Female Literacy Rate	Percentage of Total Female workers	Female Main Workers	Female Marginal Workers	Female Non - Workers
Total	70.70 (59.63)	26.88 (27.33)	16.16 (16.41)	10.5 (10.92)	73.32 (72.67)
Rural	66.79 (54.7)	32.94 (33.55)	19.18 (19.64)	13.76 (13.91)	67.06 (66.45)
Urban	80.02 (74.77)	11.29 (7.59)	8.7 (6.16)	2.5 (1.43)	88.71 (92.41)

Note: The figures in brackets show the 2001 census data.

Source: 1) 2001 data – Statistical Profile on Women Labour (2007-08) by Labour Bureau, Ministry of Labour and Employment, GOI.
2) 2011 data – Census 2011 (Provisional Data) and the compiled data provided by DES, Uttarakhand Government, Dehradun.

Table 2. District – wise Female literacy rate and the Percentage of Total Female Workers in Uttarakhand according to 2001 and 2011 census

Districts	Female Literacy Rate	Change in Literacy Rate	Percentage of Total Female Workers	Change in percentage of Total Female Workers
	2011 (2001)		2011 (2001)	
Uttarkashi	62 (47)	15	45.2 (45.94)	-0.72
Haridwar	66 (53)	13	9 (13.26)	-4.26
Udham S. Nagar	66 (54)	12	18.6 (19.9)	-1.3
Tehri Garhwal	62 (50)	12	43.5 (49.76)	-6.26
Champawat	69 (55)	14	30.5 (46.44)	-15.94
Bageshwar	70 (57)	13	47.9 (55.07)	-7.17
Almora	70 (61)	9	47 (55.25)	-8.25
Rudraprayag	61 (60)	1	47.5 (52.67)	-5.17
Pittoragarh	73 (63)	10	42.2 (50.25)	-8.05
Chamoli	73 (63)	10	44 (50.44)	-6.44
Pauri Garhwal	73 (66)	7	35 (49.99)	-14.99
Nainital	78 (71)	7	25.9 (30.72)	-4.82
Dehradun	80 (71)	9	15.4 (18.46)	-3.06

Note: The figures in brackets show the 2001 census data.

Source: 1) Census 2001 quoted in Uttarakhand Development Report 2009.

2) 2011 data – Census 2011 (Provisional Data) and the compiled data provided by DES, Uttarakhand Government, Dehradun.

Table 3. Female Literacy Rate and Percentage of Total Female Workers in Rural Areas of 13 districts of Uttarakhand for 2001 and 2011 census

Districts	Rural Female Literacy Rate	Change in Rural Literacy Rate	Percentage of Total Rural Female Workers	Change in Percentage of Total Rural Female Workers
	2011 (2001)		2011 (2001)	
Haridwar	59 (44)	15	9 (14.84)	-5.84
Uttarkashi	61 (45)	16	47.3 (47.53)	-0.2
Udham S. Nagar	63 (50)	13	23 (24.07)	-1.07
Tehri Garhwal	60 (47)	17	47 (53.62)	-6.62
Champawat	67 (52)	15	33.9 (52.7)	-18.8
Almora	68 (59)	9	50.3 (57.95)	-7.65
Bageshwar	69 (57)	12	49 (55.88)	-6.88
Chamoli	71 (61)	10	47.7 (53.96)	-6.26
Pittoragarh	70 (60)	10	46.7 (52.7)	-6
Rudraprayag	70(60)	10	48.3 (53.35)	-5.05
Dehradun	73 (62)	11	18.5 (24.92)	-6.42
Pauri Garhwal	71 (64)	13	39.5 (53.86)	-14.36
Nainital	77 (68)	9	35.5 (37.68)	-2.18

Note: The figures in brackets show the 2001 census data.

Source: 1) Census 2001.

2) 2011 data – Census 2011(Provisional Data) and the compiled data provided by DES, Uttarakhand Government, Dehradun.

Table 4. Female Literacy Rate and Percentage of Total Female Workers in Urban Areas of 13 districts of Uttarakhand for 2001 and 2011 census

Districts	Literacy Rate of Urban Female	Change in Literacy Rate	Percentage of Total Urban Female Workers	Change in Work Participation
	2011 (2001)		2011 (2001)	
Udham S. Nagar	70 (63)	7	10.5 (9.73)	0.77
Haridwar	76 (71)	5	8.2 (9.5)	-1.3
Champawat	77 (73)	4	9.1 (16.66)	-7.56
Nainital	82 (77)	5	10.4 (11.14)	-0.74
Uttarkashi	82 (78)	4	17.5 (19.42)	-1.92
Tehri Garhwal	82 (80)	2	10.9 (9.01)	1.89
Rudraprayag	84 (81)	3	23.4 (4.54)	18.86
Dehradun	85 (80)	5	12.9 (11.84)	1.06
Chamoli	89 (82)	7	19.5 (21.6)	-2.1
Bageshwar	87 (82)	5	12.2 (12.03)	0.17
Pauri Garhwal	86 (83)	3	10.6 (12.72)	-2.12
Pittoragarh	89 (84)	5	13.6 (21.4)	-7.8
Almora	92 (89)	3	12.4 (12.93)	-0.53

Note: The figures in brackets show the 2001 census data.

Source: 1) Census 2001 quoted in Uttarakhand Development Report 2009.

2) 2011 data – Census 2011(Provisional Data) and the compiled data provided by DES, Uttarakhand Government, Dehradun.

However, in urban areas there has been an increase in total, main and marginal female workers, though the upward shift has not been large as compared to the literacy rate of females in urban areas.

In Table 2 the overall female literacy rate and the percentage of total female workers of all the 13 districts of the state is given.

From the above table it can be seen that the overall literacy rate of the females in Uttarakhand has improved remarkably between 2001 and 2011. Except for the district of Rudraprayag where there has been only 1% increase in the literacy rate, all the other districts have shown an increase of more than 7%. The district with the highest increase in the literacy rate i.e. Uttarkashi has also shown the least reduction in the percentage of total female workers. On the contrary, district Champawat which has shown 14% increase in the literacy rate has also shown the maximum reduction in the percentage of total female workers in its district area. On the whole there is increase in the literacy rate in all the districts but there is also reduction in the percentage of female workers.

Table 3 depicts the female literacy rate and the percentage of total female workers in rural areas of all the 13 districts of Uttarakhand for 2001 and 2011 census.

It can be concluded from the above table that even in the rural areas of Uttarakhand, a reducing trend has been seen in female workers though the literacy rate of the rural females is increasing substantially.

Table 4 will depict the trend in the urban females for their literacy rate and the percentage of total workers for all the 13 districts of the state.

From the above table also it can be noted that the higher literacy rate has not shown any significant improvement in the percentage of female workers in urban areas also. District Rudraprayag which showed the highest fall in the percentage of overall and rural female workers is depicting the highest rise in female workers in urban areas even though the rise in literacy rate has been small. Only the urban areas of four districts Rudraprayag, Tehri Garhwal, Dehradun and Bageshwar show rise in the female workers percentage.

All the rest have shown a fall in the female workers in the urban areas. The point to be noted here is that urbanized districts like Dehradun, Udham Singh Nagar, Haridwar, Nainital have also not shown any remarkable improvement in the female work participation rate.

RESULTS AND CONCLUSIONS

The table above and the Figures 1-6 in Appendix are depicting that in Uttarakhand the relationship between literacy rate and female participation rate gives an inverted U – shaped curve.

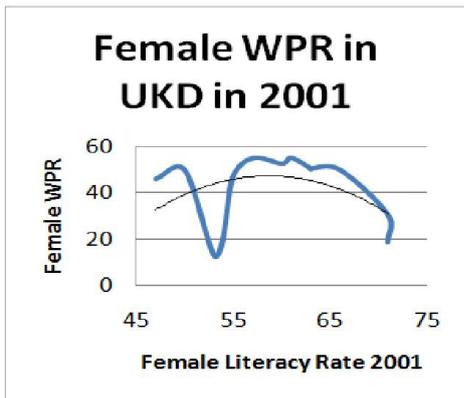


Figure 1

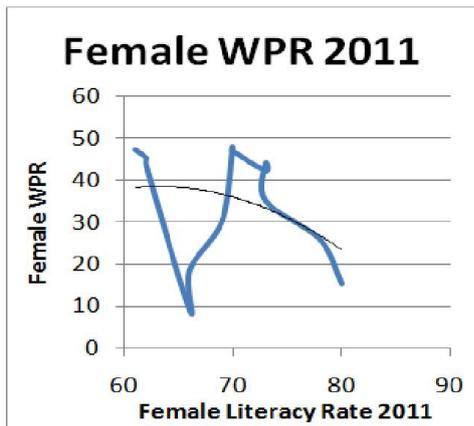


Figure 2

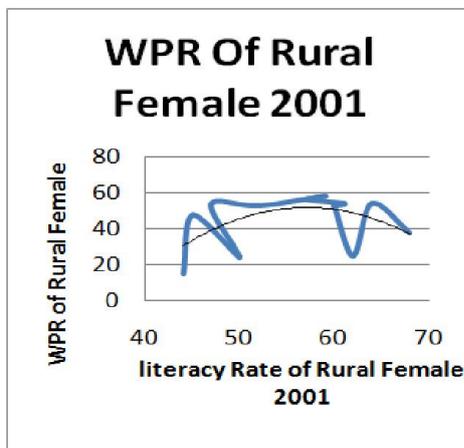


Figure 3

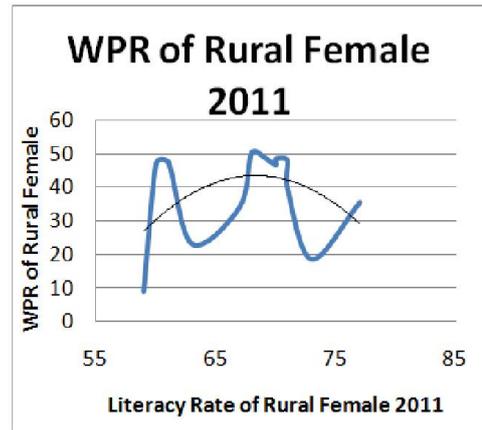


Figure 4

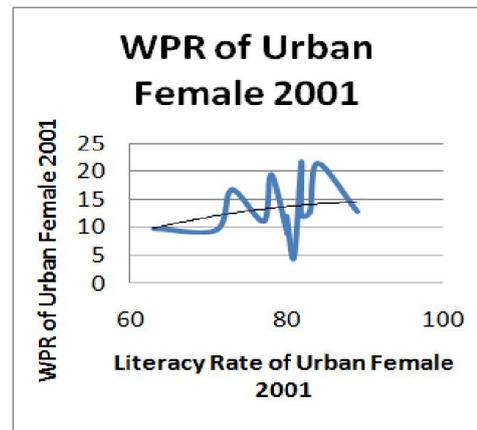


Figure 5

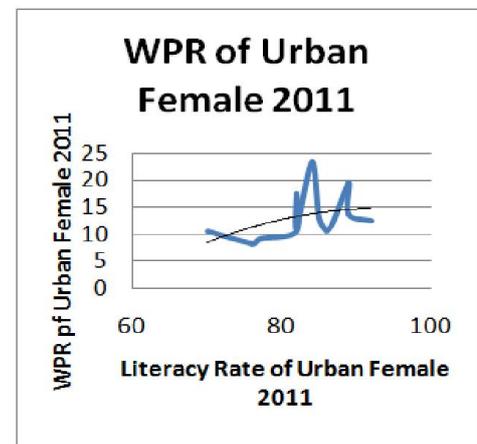


Figure 6

The Goldin hypothesis does not hold true in this case. In rural areas there is a falling trend and in urban areas there is a negligible improvement. Even in District Almora which has the credit of highest sex ratio (1139) and highest urban literacy to its name, does not show an improvement in the female WPR. Districts like Udham S. Nagar, Dehradun, Haridwar and Nainital were the high scorers in adding population to Uttarakhand, however, they failed to add female to the economic activities of the districts (These districts are also considered the urban districts of the state). If the absolute

numbers are considered, then the rural female outstand the urban female in work participation. The major reason is that, Uttarakhand is a hill state and most of the districts are situated in the hilly terrains. The males migrate to plain areas in search of jobs or they rely on the tourists for their livelihood visiting the religious places of the State. The females are left to manage the domestic work and farm work. Lack of industrialization does not provide job opportunities in the secondary sector for both the males and the females. The females do not move to other places in search of jobs and there are very less job opportunities in their native areas. Higher literacy rates along with improvement in per capita income have not improved the female participation rate in the state. This study will bring to light that even though the steps taken by the Government of Uttarakhand have drastically improved the female literacy level in the state, but the lack of efforts by the Government to create employment opportunities for the educated females will lead to more and more numbers of unemployed females both in the rural and urban areas. The limitation of this study has been its' being a bivariate analysis. This area of study should be taken into as a multi-variate analysis, to give a more precise and reliable picture for the low female WPR in a state which has higher growth rate in female population than the male population.

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