

Income Effect Hypothesis: A Re-Examination

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Abstract: It has been known for the evidences from trends of work participation rate that the female work participation rate is declining over a long period of time. The scholars have attributed this decline to increase in family income. Therefore, the argument is that since the family income is sufficient, the women need not work anymore. This paper tries to analyse this argument with the help of employment and unemployment data from NSSO's Quinquennial surveys. Women are not a homogenous category. Their participation in work is determined by caste, class, culture and geography. Therefore, decline in women's work participation rate can not be explained as a result of the, merely, improvement in the economic status of their household. There are also the indications of existence of economic distress among women and the indications for existence of economic distress exceeds the indications for existence of economic prosperity in poor regions of India by a huge margin. Gender norms become very complex when various factors like geography, caste, class, urbanism etc. overlap each other, increasing the complexity in the relationship between women's work participation and their economic status. For instance, the poor women are not likely to quit work if the aggregate benefits of working exceed the value of their domestic responsibilities and fulfil their working aspirations including good quality work. There are several such possibilities that are likely to emerge in diverse socio-economic and cultural settings. Therefore, there is an ample need of region specific studies to account the disappearance of women workers from labour market.

Keywords: female work participation rate, employment, unemployment, wpr in India, women's work participation

I. Introduction

The declining trend of the women's work and labour force participation in India over last decade is a matter of serious investigation for social scientist and has attracted a lot of academic limelight [Chowdhury (2011), Kannan and Raveendran (2012), Neff et al. (2012), Mathew (2012), Hirway (2012) and Abraham (2013)] to explore the reasons of such trends.

The debate on post reform decline in WPR has been explained very well in one of the celebrated papers of Chadha and Sahu (2002) which drew the trends of WPR between 1993-94 and 1999-2000 based on NSS unit level data. Chadha and Sahu (2002) observe that the WPR has declined between 1993-94 and 1999-2000 for both male and female. The decline has been greater in rural than the urban areas and greater in female than the male WPR. While looking at the trends of WPR by age group, they found that the decline in WPR has been greater among the children and younger population than the older ones. This denotes that the older generations are taking over the jobs previously acquired by the youth and the children leading to

ageing of work force. To explain these trends, they give two main hypotheses. First, the younger generation females are withdrawing from work force in favour of attending educational institutes and second, in favour of doing domestic duties. The underlying argument to support both hypothesis are, that the economic prosperity in the households have increased due to increase in income, so, poorer households' women are not obliged anymore to work. Therefore, the poorer younger population, which was previously unable to attend educational institutes, is attending educational institutes. Owing to the same reason, older women could withdraw from the work force to attend to domestic duties. The 'school hypothesis' can also be accepted because the increase in people attending educational institutes is synchronized with decline in female WPR, as noticed in their study.

Chowdhury (2011) while doing the analysis of employment and unemployment (2004-05 and 2009-10) in various sectors of economy provides us with a different explanation than his predecessors, "the entire decrease in proportion of employment in the agriculture as well as the manufacturing sector has been compensated by an increase in employment in the construction sector both in rural and urban areas (pp 25)." He also finds that 100% of the decline in proportion of worker in agriculture as well as manufacturing sector is explained by rise in the proportion of workers involved in construction (MNREGA in rural areas) in rural as well as urban areas. He rejects "school hypothesis" as an explanation for decline in rural female LFPR because he observes that the decline has not been limited to only school/college going age groups but omnipresent among all the age groups. He, while supporting the jobless growth paradox, asserts that the decline in WPR of women might be due to decline in availability of employment opportunities to them.

Kannan and Raveendran (2012) argue that educational effect does not seem to be explaining the drop in rural female WPR, completely. The additional enrolment for education between 2004-05 and 2009-10, explains only 27% of the 38.83 million women who dropped out of the workforce. They also point that the 72% of the women who dropped out of work force lie in the age group of 25 and above and this age groups is very less likely to attend to educational institutes. This 72% of the reduction has been compensated by the increase in the proportion of women attending "domestic duties only" and "domestic duties and was engaged in free collection of goods". They also find that the greater number of women who dropped out of labour force, are from the poorer households which makes them think that withdrawal of women could not be due to improved economic status.

Neff et al. (2012) have tried to explain this phenomenon of falling rural female labour force participation rates in rural area; and finds that the decline in female WPR from 2004-05 to 2009-10 can be largely explained by the income effect and little by educational effect¹ rather than by any socio-cultural effect. Income effect refers to the decline in female WPR with increasing income of household and educational effect expresses that presence of women in the educational institutes is most likely to reduce their labour force participation rates. To establish his conceptual framework, he analyses changes in female LFPR in projection of the quintiles of mean male wages of the household and finds that due to an increase in the

¹ Income effect refers to the decline in female WPR with increasing income; and educational effect expresses that presence of women in the educational institutes that leads to the reduction of their labour force participation rates.

mean male wages, the female LFPR of the households in the same quintiles declined. He also analysed the male wages and female LFPR across households at a single time period and finds the negative sloping curve. Supporting the views of Neff et al. (2012), Mathew, 2012 (cit. Lundberg, 1981, 1985; Maloney, 1987) divides household workers into primary and secondary workers. Primary workers are male adults and women and children are taken as secondary workers. He argues that when the income of primary worker is not adequate to meet the subsistence needs of family, the secondary workers enter the labour force and vice-versa. He finds that there has been an increase in the work participation rate of women in Kasargod district of Kerala due to pauperization of people which in turn has led to feminisation of labour force in that district.

Chowdhury (2011), Kannan and Raveendran (2012), Neff et al. (2012) and Mathew (2012) try to explain the various dimensions of income and educational effect in their studies but all of them based their analysis in year 2004-05 to 2009-10 and 2004-05 was an economically distressed year (Himanshu, 2011), therefore, their results may not be in conformity with normal time period.

Abraham (2013) undertook the study of trends of LFPR since 1972-73 and observed that the de-feminization i.e. decline in rural female LFPR and share in labour market, has been taking place for last quarter of a century. Subsequently, there is also a rise in the proportion of women engaged in domestic duties only. Based on evidence from NSS unit records, he attributes these patterns of distribution of women in different status categories to the increase in the household income level but finds that “female education is becoming universal in nature and independent of their income levels”. Therefore, income effect might lead to reduction in female LFPR but is unlikely to affect the educational status of women.

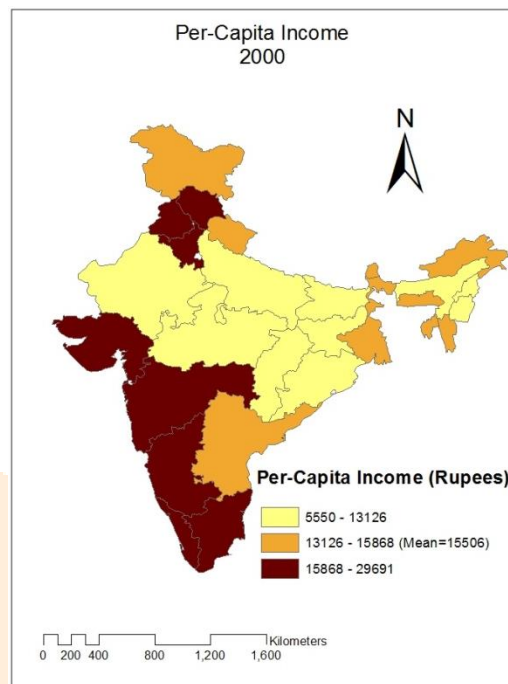
It is evident in these studies that jobs that can take in unemployed women, especially from more deprived sections have not been created by the dynamics of the rural areas, particularly in the post reform period. Keeping in the view the trends of women employment in economy, this paper tries to survey the debate regarding the causes of decline in rural female’s WPR. Subsequently, this study attempts to substantiate the shortcomings of most accepted explanations i.e. income effect hypothesis, based on the Employment and Unemployment unit records of 1999-2000, 2004-05 and 20011-12. The paper also exposes the limitations of using a geographically insensitive approach for explaining such a major change in economic space.

Ia. Framework of Analysis

It is assumed that the income effect i.e. withdrawal of women from workforce, exists if the proportion of women in NSS usual status categories ‘attending educational institutes (coded 91)’ and doing ‘domestic duties only (coded 92)’, increases; whereas, the women doing ‘domestic duties with free collection activities (coded 93) signifies existence of economic distress among households because doing collection activities along with domestic duties imply that all the household needs can not be met from the income, it is earning, forcing women out to collect and produce those unaffordable goods.

The regionalization of India into poor, mediocre and rich, as required in section II and III, has been done according to the Net State Domestic Product (NSDP) in the year 2000 that is also the base year for the analysis of work participation rate in this paper.

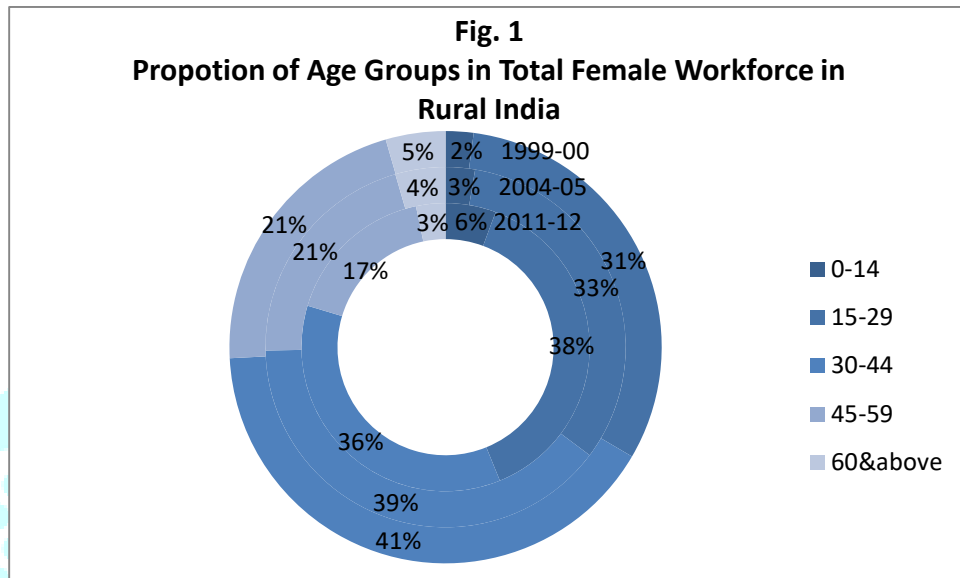
Map. 1



II. Trajectory of Women's Work: De-feminization and Ageing of Workforce (Principal+Subsidiary)

It is evident from the Table.1 that the female WPR has declined continuously since 1999-00 except 2004-05 which is considered an economically distressed year and lead to higher participation of secondary workforce in the economy. The proportion of women in total rural workforce i.e. feminization of workforce also showed negative trend. It declined from 35.45% to 30.82% between 1999-00 and 2011-12. Disaggregated analysis of farm and non-farm sector also shows a decline in the proportion of women in both these sector. The share of women in agricultural employment declined from 40.21% to 36.86% whereas it experienced a minor decline of around 1% in non-agricultural sector between 1999-00 and 2011-12. Hence, one does not detect transfer of workforce from agricultural to non-agricultural sector or vice-versa in form of either the much hyped feminization of agriculture or feminization of non-agricultural sector. Abraham (2013) observes that this trend is continuation of de-feminization of labour force since 1972-73. If feminization of agriculture did not exist, then why was the issue so hyped! In fact, feminization of agriculture, between 1999-2000 and 2011-12, is primarily a phenomenon found in the few mountainous states of India i.e. Sikkim (17.69%), Jammu & Kashmir (8.39%), Tripura (7.08%), Himachal Pradesh (2.20%), Meghalaya (2.07%). States of Andhra Pradesh (0.53%) and Uttar Pradesh (0.20%) also experienced negligible amount of feminization of agriculture in this time period. It should be noted here that this time period is also a period of decline in women's work participation rates in India, hence, the feminization of agriculture is not necessarily due to women's increased participation in work in these states but also due to greater transfer of male workforce to other sectors.

One can observe that the proportion of women in agricultural as well as non-agricultural sector increased when the economy came under distress in 2004-05. This means that women, a part of secondary workforce, have to participate in economically paid activities to support the household during distress economic situation. Hence, the scholars who observed feminization of agriculture either studied a region which is economically distressed or studied it between an economically neutral and economically distressed period. The Indian labour economists except Abraham (2013) also failed to define the concept of feminization of workforce. Thus, feminization of workforce and agriculture is just a myth at the national level.



The other important development in the rural female's labour market is the increase in the proportion of old aged workers in the total workforce. Figure 1 presents a clear picture of such trends. It can be witnessed that the proportion of younger age groups in total workforce incessantly declined whereas it rose in the 30-44, 45-59 and 60 & above age groups between 1999-00 and 2011-12. It clearly points towards increased participation of older age groups in workforce, which has ultimately led to ageing of rural female workforce.

It is also noticeable that the decline in the female WPR in rural India is greater at the lower rungs of economic strata than the higher ones. In urban India, the female WPR rose around 5% points between 1999-00 and 2011-12 among the poorest, whereas, it declined for other categories except the richest where it increased. In totality, the female WPR increased marginally in urban India.

Appendix 1 shows the proportion of farm and non-farm employment to total female employment in rural India. It shows that women's proportion in non-farm employment to their total employment has increased from 14.76% to 25.39% between 1999-00 and 2011-12. This means that women's proportion in different sectors of economy is changing according to already established economic theories which state that as the economy develops, the labour moves from agricultural to non-agricultural sectors, but, this shift is taking place at a higher pace at the upper end of the economic strata than the lower one.

Table 1 Female Work Participation Rate (15-59) in India						
	Rural			Urban		
MPCE	1999-00	2004-05	2011-12	1999-00	2004-05	2011-12
Poorest	57.84	63.61	44.60	32.96	44.42	37.85
Poorer	51.67	55.91	39.30	29.98	35.42	28.14
Medium	48.71	52.71	39.70	26.75	31.04	23.57
Rich	47.36	46.62	35.71	23.00	24.77	22.07
Richest	40.71	42.75	31.80	18.11	19.27	18.32
Total	48.79	52.42	38.15	21.39	24.71	21.43

III. Income Effect Hypothesis

There are three major conclusions which can be drawn from the analysis of female workforce in above sections. First, there is clear trend of de-feminization of workforce i.e. fall in female WPR accompanied by decline in their proportion in total rural workforce. Second, the female workforce is experiencing ageing of workforce which means that young females have withdrawn from workforce at a faster rate than the older females. Third, the female at the lower end of economic strata have gone out of employment at a faster rate than the richer ones and their proportion in non-farm employment, too, has increased slower than their richer counterparts.

The proponents of the income effect hypothesis argue that women go out of employment owing to improvement in the economic status of their households, therefore, poorer women in rural India have left employment at a faster pace. If we accept this argument, then, why has there been an increment in the work participation rate of urban women in the poorest MPCE quintile? Have they not benefited from employment of the male member of their household or from the prosperity of economy? To answer these questions, one must analyse the situation of male employment by MPCE categories.

IIIa. Situation of Male Employment

One of the major reasons of improvement in economic status of the rural households is employment of men in non-farm sector which is considered paid higher than the farm sector. Therefore, the proportion of men in non-farm employment in those MPCE categories which has witnessed fastest decline in female WPR, should record fastest increment, but there is no such correspondence (Table 1 & Appendix 1). Additionally, there is a clear pattern of casualization of male workforce in rural non-farm sector where the increase in proportion of men in casual labour force is higher among the poorer than the richer (Table 3). This suggests that poor households have not withdrawn female workers from labour market as a consequence of employment of male members of household in non-farm sector or subsequent improvement in economic status. In agricultural sector (Table 3), the proportion of men in self employed category has increased, in unpaid family workers, stagnated and in casual worker's category, decreased. Although the prospects of male employment in agricultural sector seem brighter than the non-farm sector, but this bubble of myth bursts when we analyse them by MPCE categories. It is noteworthy, here that the 'poorest' category is a net loser, which experienced a casualization of its labour force and decline in their proportion in self

employed category. The proportion of unpaid family worker in agricultural sector also increased among the poorer households whereas it decreased for other categories. In summary, it can be argued that the female WPR has not declined due to improvement in the situation of male employment.

		Self-employed			Unpaid Family Worker			Regular salaried			Casual		
		55th	61st	68 th	55th	61st	68th	55th	61st	68th	55th	61st	68th
Agriculture & Allied Act.	Poorest	36.33	30.28	33.89	20.19	6.82	20.13	1.88	1.75	0.93	41.60	61.15	45.05
	Poorer	24.55	37.55	39.07	13.43	15.18	20.37	1.78	1.73	0.45	60.24	45.55	40.11
	Medium	33.58	45.85	46.03	18.54	24.78	19.49	1.63	0.99	0.78	46.25	28.38	33.69
	Rich	42.21	46.18	55.22	23.21	35.07	18.73	1.54	0.84	1.28	33.03	17.91	24.76
	Richest	52.51	41.59	61.20	25.07	49.47	20.86	2.83	1.39	0.93	19.59	7.55	17.01
	Total	36.64	39.23	44.11	19.76	22.25	19.86	1.84	1.39	0.84	41.75	37.13	35.19
Non-Agricultural Act.	Poorest	37.79	38.93	28.00	6.90	3.20	5.73	27.60	16.52	10.04	27.71	41.34	56.23
	Poorer	40.33	40.19	31.97	7.85	5.60	5.35	12.60	17.42	15.91	39.21	36.80	46.77
	Medium	41.70	40.55	33.95	7.71	7.15	5.28	17.55	22.70	22.41	33.03	29.60	38.36
	Rich	37.82	37.00	34.43	6.81	9.49	4.76	26.51	30.92	31.18	28.86	22.59	29.64
	Richest	32.29	37.69	31.30	4.86	9.45	3.37	44.93	39.91	47.29	17.92	12.95	18.04
	Total	37.65	38.97	32.08	6.70	6.88	4.98	27.45	24.72	24.32	28.20	29.43	38.62

IIIb. Changes in Usual Status of Women

The proponents of income effect hypothesis argue that improvement in economic status have expanded the women's choices to either work or attend educational institutes or do domestic duties. Abraham (2013) observed that women have gone out of work in favour of attending domestic duties only, which is a strategy to cope up with the double-day's burden. Table 4 shows the proportion of women in different usual status categories across economically poor, mediocre and rich regions of India. Apparently, the proportion of women in workers category has declined between 1999-00 and 2011-12 in all the regions of India. In poor region, this decline is accompanied by an increase in women attending educational institutes (+4.21%), decline in women doing domestic duties only (-8.18%) and abrupt rise in women doing domestic duties & collection activities (+15.82%). These trends have three nuances regarding income effect hypothesis which are contradictory to each other.

First, the rise in the proportion of women in 'attending educational institutes' category supports income effect hypothesis. Second, the decline in proportion of women performing 'domestic duties only' and corresponding increase in women performing 'domestic duties and collection activities' suggests the existence of economic distress among women. It means that women are not able to avoid the double-day burden and they have to perform domestic duties along with those activities which economically support the household. Such collection activities also carry economic value. If the economic situation of women would have improved, they would have just performed domestic duties or attended educational institutes instead of getting engaged in 'free collection of goods'. Therefore, the abrupt rise in proportion of women doing 'domestic duties and collection activities' suggests their inability to avoid burden of double-day. It is

also evident from Figure 1 that the proportion of older women, which is part of secondary workforce, in workers category has increased. This, too, suggests that the existence of economic distress among rural household. Third, the increment in proportion of women doing 'domestic duties & collection activities' exceeds increment in the proportion of women 'attending educational institutes' by huge margin and these trends contradict each other in support of income effect hypothesis, as explained in point first and second.

In mediocre region i.e. primarily mountainous states with smaller size of population, the trends are similar to the poor region but women 'attending educational institutes' marginally exceeds women doing 'domestic duties & collection activities', whereas proportion of women doing 'domestic duties only' declined. Therefore, above nuances about poor region except the third one are also true about this region.

Regions	Poor			Mediocre			Rich		
	1999-2000	2004-05	20011-12	1999-2000	2004-05	20011-12	1999-2000	2004-05	20011-12
Workers	43.16	47.12	31.55	47.56	48.78	44.93	58.22	62.89	45.27
Attending Edu. Insti.	2.83	3.43	7.04	2.87	3.97	7.07	4.03	4.84	7.94
Domestic Duties Only	29.79	24.12	21.61	24.88	21.76	21.48	25.24	20.17	29.82
Domestic Duties & Collection acts.	22.22	23.38	38.04	21.99	23.00	24.36	9.94	8.97	14.49
Others	1.99	1.94	1.76	2.70	2.49	2.16	2.56	3.13	2.48

In the rich region, this decline in female WPR (-12.95%) is accompanied by an increase in women attending educational institutes (+3.90%), increase in women doing domestic duties only (+4.58%) and increase in women doing domestic duties & collection activities (+4.55%). Here, unlike the other regions, the proportion of women doing 'domestic duties only' has risen. The combined increase in proportion of women 'attending educational institutes' and women doing 'domestic duties only' (8.48%) is quite higher than women involved in 'domestic duties & collection activities' (4.55%).

Taking these changes in different usual categories' status across different regions of India between 1999-2000 and 2001-12 in consideration, it is certain that the income effect explains the drop in the female WPR, partially. Its operation in the poor region is much weaker than the rich region. These trends also imply that the prosperity and distress can exist, increase or diminish with varying or constant rates in same or opposite direction in same space or time. It is also argued that all the women do not work due to economic obligations but also for various other reasons.

IV. Conclusion

Women are not a homogenous category. Their participation in work is determined by caste, class, culture and geography. Therefore, decline in women's work participation rate can not be explained as a result of the, merely, improvement in the economic status of their household. The evidence from NSS employment and unemployment rounds proves that the income effect hypothesis do not operate and explain the withdrawal of all the women workers from labour market. There are also the indications of existence of economic distress among women and the indications for existence of economic distress exceeds the

indications for existence of economic prosperity in poor regions of India by a huge margin, whereas the vice-versa exist in rich regions but the gap between these indications is nominal. Gender norms become very complex when various factors like geography, caste, class, urbanism etc. overlap each other, increasing the complexity in the relationship between women's work participation and their economic status. For instance, the poor women are not likely to quit work if the aggregate benefits of working exceed the value of their domestic responsibilities and fulfil their working aspirations including good quality work. There are several such possibilities that are likely to emerge in diverse socio-economic and cultural settings. Therefore, there is an ample need of region specific studies to account the disappearance of women workers from labour market. Hence, one single reason to explain such a substantial change in women's work participation across such a widely differentiated space as India will always be inadequate.

Appendix

Appendix 1						
Proportion of Rural Female's Farm and Non-farm Employment to Total Rural Employment (15-59 age)						
	Farm			Non-Farm		
MPCE quintiles	1999-00	2004-05	2011-12	1999-00	2004-05	2011-12
Poorest	84.10	83.26	78.40	15.90	16.74	21.60
Poorer	87.53	82.71	75.45	12.47	17.29	24.55
Medium	86.30	82.46	75.25	13.70	17.54	24.75
Rich	86.06	83.86	73.24	13.94	16.14	26.76
Richest	80.65	83.39	66.29	19.35	16.61	33.71
Total	85.24	83.08	74.61	14.76	16.92	25.39
Proportion of Rural Male's Farm and Non-farm Employment to Total Rural Employment (15-59 age)						
	Farm			Non-Farm		
MPCE quintiles	1999-00	2004-05	2011-12	1999-00	2004-05	2011-12
Poorest	70.02	71.39	63.60	29.98	28.61	36.40
Poorer	78.31	66.14	60.61	21.69	33.86	39.39
Medium	73.60	62.51	58.20	26.40	37.49	41.80
Rich	68.36	59.86	51.40	31.64	40.14	48.60
Richest	54.99	57.14	42.98	45.01	42.86	57.02
Total	69.60	64.33	56.93	30.40	35.67	43.07

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