

# Women, Work, and Employment Outcomes in Rural India

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Large-scale surveys show that while rural women's employment has grown over the decades, women are still largely self-employed or employed as casual labour in agriculture. They face various forms of discrimination, including job-typing that pushes them into low-paying jobs. Higher work participation per se does not lead to better outcomes unless accompanied by higher education, and/or assets. Education may not positively influence a woman's participation in work, but for women who are in the workforce, education is the most important determinant of better quality non-agricultural work. Women's autonomy, measured in terms of control over land, mobility, and a willingness to join self-help groups, enables them to move into non-agricultural jobs. The paper argues for policy interventions to increase work opportunities and enhance wages for rural women workers.

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Employment is critical for poverty reduction and for enhancing women's status. However, it is potentially empowering and liberating only if it provides women an opportunity to improve their well-being and enhance their capabilities. On the other hand, if it is driven by distress and is low-paying, then it may only increase a woman's drudgery. To understand women's work status in India's rural areas and to examine the trends and nature of women's employment, this paper analyses data from large-scale national surveys. It draws on data from the National Sample Surveys (NSS), the National Family Health Surveys (NFHS), and the agricultural census conducted by the ministry of agriculture, as well as other sources of information such as national income data from the Central Statistical Organisation (CSO).

The paper is organised into five sections. Section 1 analyses work participation rates for women by socio-economic characteristics such as caste, religion, education, and economic status. Section 2 discusses the participation of women in the agricultural and non-agricultural sectors and their categorisation by employment status. Section 3 examines some of the correlates of workforce participation including education and poverty. The determinants of women's work participation and the factors that influence their participation in different kinds of employment are explored by means of regression analysis in Section 4. The last section concludes with an overview and suggestions for improving the position of women workers in rural areas.

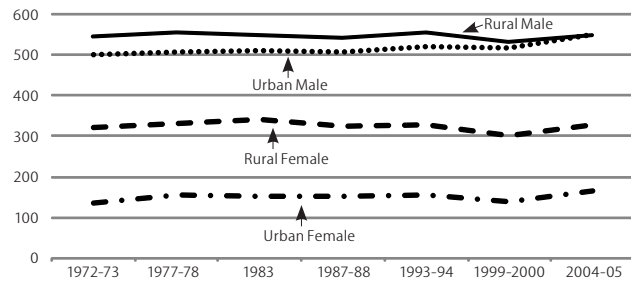
## 1 Workforce Participation by Socio-economic Characteristics

The notion of work and employment, especially for women, is complex. The reasons why women work (or do not work) in gainful activity, and whether they work part time or full time, can be diverse and may be rooted in a complex interplay of economic, cultural, social, and personal factors. In developing economies, workers combine multiple activities over different parts of the year. The National Sample Survey Organisation (NSSO) defines a person who is employed (in gainful activity) for a major part of the year as being "principal status" employed. If gainfully employed only for a part of the year, she is described as being employed in the "subsidiary status". A person employed either in "usual principal status" (UPS) or "usual subsidiary status" (SS) is enumerated as being employed in the "usual status" (also UPSS). Unless otherwise stated, the reference is to UPSS employment throughout this paper. The associated industry is the one with which she is associated for a major

part of the employment.<sup>1</sup> We focus for the most part on rural employment, but also provide data on urban employment in order to highlight the contrasts.

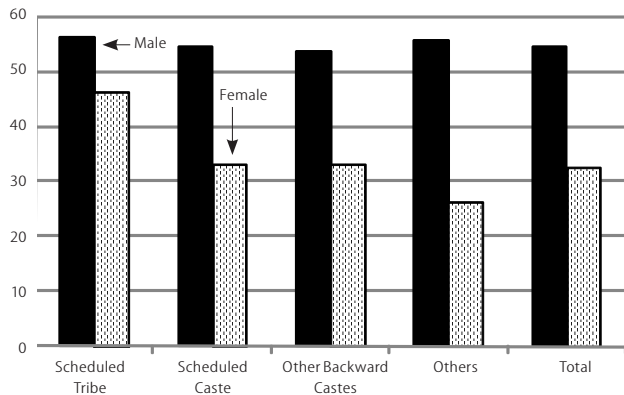
As in most other parts of the world, fewer women participate in employment in India compared to men. In 2004-05, while in urban areas, 16.6% women and 54.9% men (of all ages) were employed, in rural areas, these percentages were 32.7 and 54.6, respectively (Table 1). More women proportionately than men

**Figure 1: Workers Per Thousand Persons by Sex and Residence (1972-73 to 2004-05)**



Source: NSSO (1997, 2001a, 2006).

**Figure 2: Rural Workforce Participation Rate by Social Group and Sex (2004-05, in %)**



Source: Computed from NSSO (2006).

are employed only in the subsidiary status, especially in rural areas. This can be explained by factors from the supply side as well as the demand side.

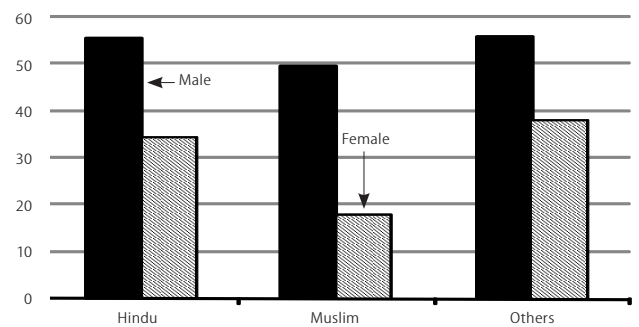
Taking the former first, the rural economy has been largely stagnant over the years and employment opportunities have not grown. Most women, therefore, are able to get work for only a few months in the year. This keeps them employed only in the “subsidiary status”. On the supply side, women’s primary duties are supposed to be in the household. For economic reasons they have to work, but must do so in addition to their domestic responsibilities, and therefore, may be able to enter the labour force only as subsidiary workers.

Over a 32-year span (1972-73 to 2004-05), the workforce participation rate (WPR) of males and females shows no systematic variation (Figure 1), despite a larger percentage of persons in the younger age groups entering education. The only notable change is that urban females recorded a higher employment rate in 2004-05 over all preceding rounds of the survey. This also shows that recent economic changes appear to have enlarged work opportunities for women in urban areas, but have had a limited impact in rural areas. Yet, there are large variations in women’s

participation in work across socio-economic groups and across regions and states in India, as we shall presently discuss.

While economic factors principally determine a man’s participation in employment, the forces that influence a woman’s participation in work are diverse and include demographic, reproductive, social, religious and cultural factors. Figure 2 shows that WPR is the highest for scheduled tribe (ST) and scheduled caste (SC) women and the lowest for women from “other” castes. The SCs and STs are the most marginalised sections in the economy and the most impoverished. Women from these groups have higher WPRs because extreme poverty leaves them with little choice but to work, and because they do not face social taboos that disapprove of work. The converse is true for women from “other” castes.

**Figure 3: Rural Workforce Participation Rate by Religion and Sex (2004-05, in %)**



Source: Computed from NSSO (2006).

When religious background is considered, Muslim women in rural areas have a significantly low WPR – nearly half the national rate for women of all religions (Figure 3). Once again, social norms that restrict women’s mobility and entry into the workforce keep more Muslim women tied to hearth and home.

Does education propel women into employment? The gender

differences in this respect are interesting and stark. For male workers, higher levels of education are indeed associated with higher WPR, both in rural and urban areas. But for women, WPR is higher for illiterate women than for women with higher levels of school education – a trend which reverses itself only for women with technical/vocational education or graduates. This pattern is manifest both in rural and urban areas. Thus, 51% of rural illiterate men are employed, but this percentage goes up to 71% among rural men who

**Table 1: Workforce Participation Rates by Sex, Sector and Employment Status (2004-05)**

Employment Status	Rural		Urban	
	Male	Female	Male	Female
All ages				
Usual principal status	53.5	24.2	54.1	13.5
Subsidiary status only	1.2	8.5	0.8	3.1
Usual principal and subsidiary status	54.6	32.7	54.9	16.6
15-59 Years only				
Usual principal status	85.6	38	79.2	19.7
Subsidiary status only	1.6	13.5	1	4.5
Usual principal and subsidiary status	87.1	51.5	80.2	24.2

Source: Computed from NSSO (2006), unit-level data.

**Table 2: Workforce Participation Rate by Level of Education (2004-05)**

Educational Attainment	Rural		Urban	
	Male	Female	Male	Female
Illiterate	50.8	39.2	37.6	20.1
Literate and up to primary	44.9	21.3	42	12
Middle	70.3	31.8	66	13.6
Secondary	72.6	30.3	67	12.2
Higher secondary	70.8	25.1	60.8	12.9
Diploma/certificate course	81.5	52.2	79.6	48.4
Graduates and above	85	34.3	79.5	28.9
All	54.6	32.7	54.9	16.6

Source: Computed from NSSO (2006), unit-level data.

have passed their higher secondary (Table 2, p 50). On the other hand, 39% of illiterate rural women are employed, but this percentage declines to just 25% among rural women who have passed higher secondary.

Why? Multiple factors such as the compulsion for men to earn, the greater availability of jobs for men, and the restrictive social norms operating for women, appear to explain this pattern. It is interesting that in urban areas by contrast, women's employment goes up at higher educational levels and shows a pattern similar to that for men, showing the narrowing of gender gaps in urban areas.

How does the economic status of women influence their participation in work? Indeed, the relationship between workforce

**Table 3: Percentage Distribution of Workers by Employment Status, Sector and Sex (2004-05)**

Employment Status / Sector	Rural			Urban		
	Male	Female	Persons	Male	Female	Persons
<b>Agriculture</b>						
Self-employed	63.8	64.5	64.1	70	62.8	66.9
Regular/salaried	1.3	0.5	1	5.3	1.9	3.8
Casual labour	34.9	35	34.9	24.7	35.3	29.4
<b>Non-agriculture</b>						
Self-employed	47	59.6	49.7	43.1	44.4	43.4
Regular/salaried	24.2	19.8	23.2	42.9	43	43
Casual labour	28.9	20.6	27.1	13.9	12.6	13.7
<b>All workers</b>						
Self-employed	58.1	63.7	60.1	44.8	47.7	45.4
Regular/salaried	9	3.7	7.1	40.6	35.6	39.6
Casual labour	32.9	32.6	32.8	14.6	16.7	15
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Computed from NSSO (2006), unit-level data.

**Table 4: Wages and Percentage Distribution of Workers by Agriculture and Non-Agriculture and by Employment Status (2004-05)**

Casual Labour Industry	% Distribution		Wages (Rs Per Day)			
	Male	Female	Male	Female	Persons	Female/Male Wages
Agriculture	70.6	89.5	47.9	33.2	42.5	0.69
Non-agriculture	29.4	10.5	67.5	44	63.8	0.65
<b>Total</b>	<b>100</b>	<b>100</b>	<b>54.6</b>	<b>34.7</b>	<b>48.5</b>	<b>0.64</b>
Regular workers Industry	% Distribution		Wages (Rs per day)			
	Male	Female	Male	Female	Persons	Female/Male Wages
Agriculture	9.9	11	68.1	53.7	65.2	0.79
Non-agriculture	90.1	89	151.1	86.3	139.1	0.57
<b>Total</b>	<b>100</b>	<b>100</b>	<b>143</b>	<b>82.9</b>	<b>131.8</b>	<b>0.58</b>

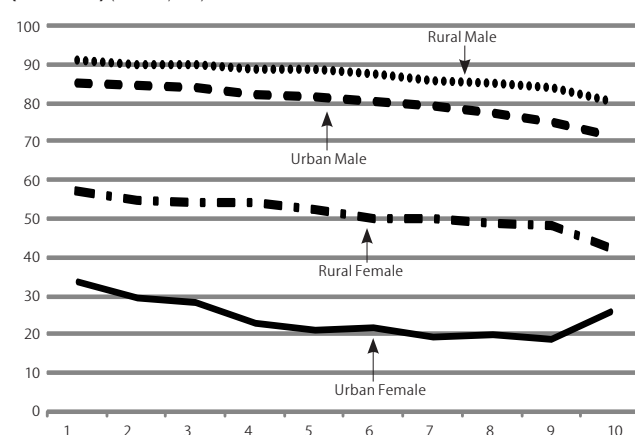
Source: Computed from NSSO (2006), unit-level data.

participation and economic status of the household is critical for policy and programme interventions. The relationship between monthly per capita consumption expenditure (MPCE) and WPR for the working age population (15 to 59 years) is presented in Figure 4. Workforce participation shows a consistently declining trend with rising economic status for rural women, reflecting that economic distress is a factor that compels poor rural women to work. In contrast, for urban women, work participation shows a broad v shape, declining as economic status improves, but rising again with the highest consumption decile. The latter reflects the higher educational attainments of women associated with higher incomes, and the greater availability of employment opportunities in urban areas.

To conclude, women's participation in gainful work is lower compared to men. It is higher for SC and ST women who are less

restricted by social norms. Among religious groups, work participation is lowest for Muslim women. The effects of education differ for men and women, with level of participation increasing with educational levels for men, but declining for rural women. As economic status improves, work participation declines for rural women, suggesting that when there are no compelling economic reasons to earn, social taboos on women's mobility and participation in work exercise a strong influence. In general, while the gaps in work participation between men and women are clear and well recognised, the gaps between different classes

**Figure 4: Workforce Participation Rate across MPCE Deciles by Sector and Sex (15-59 Years) (2004-05, in %)**



Source: Computed from NSSO (2006), unit-level data.

of women hailing from different social and economic backgrounds are less well known and need to be understood for effective policy measures.

## 2 Women's Employment in the Agricultural and Non-Agricultural Sectors by Employment Status

Within rural areas, work may be classified along two dimensions: (1) by sector, viz, agriculture or non-agriculture, and (2) by employment status, that is whether a person is in regular employment, is self-employed or is casually employed. An analysis of women's employment by sector and employment status can tell us a great deal about the outcomes for women and if the work they do promotes their well-being or is low-end, low-paying and driven by distress. Table 3 shows the distribution of workers by these cross-cutting categories.

What is the significance of this classification and what does it tell us about the nature of and disparities in women's employment? Table 4 provides the percentage distribution of male and female workers in agriculture and non-agriculture, by employment status as well as wages per day. It illustrates vividly the more disadvantaged position of women in the rural labour market.

First, wages are higher for men in all categories of employment. The disparity is highest for regular workers in non-agriculture (where the ratio of female to male wages is 0.57). Second,

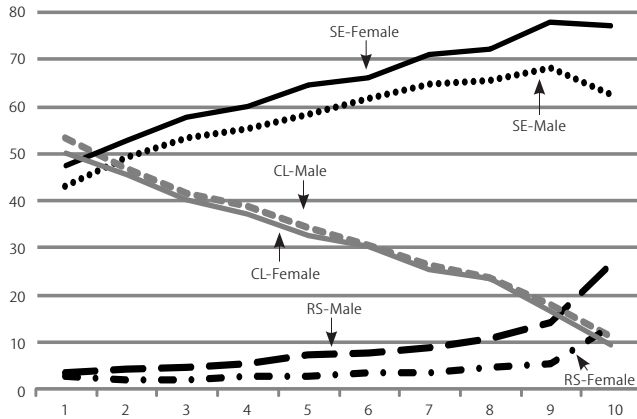
**Table 5: Percentage of Rural Male and Female Workers in Agriculture for Different Years**

	1972-73	1977-78	1983	1987-88	1993-94	1999-2000	2004-05
Male	83.2	80.7	77.8	74.6	74.1	71.3	66.5
Female	89.7	88.2	87.8	84.8	86.1	85.2	83.2

Source: NSSO (1997, 2001a, 2006).

women labourers are concentrated in agriculture where the wages are lowest. Thus, among casual labourers, 90% women are in agriculture and only 10% are in non-agriculture (compared to 71% and 29% for men). Third, a very low proportion of women are in regular work where, on average, wage rates are the highest, employment is more secure and working conditions are relatively better. This is the case both in agriculture and in non-agriculture (Table 3).

**Figure 5: Percentage Distribution of Male and Female Workers by Employment Status across Consumption Deciles (2004-05)**



SE – Self-employed; RS – Regular/salaried; CL – Casual labour.  
Source: Computed from NSSO (2006), unit-level data.

How does economic status relate to the nature of work that men and women do? Figure 5 makes this very clear. Along expected lines, the percentage of casual labourers among both male and female workers declines sharply with rising household MPCE deciles. The percentage of the self-employed among workers shows an increasing trend with MPCE deciles, except for the highest deciles, where it dips. The share of regular workers is low throughout, showing the scarcity of regular work; it is negligible in the lower consumption deciles but rises in the highest deciles. For rural female workers, the share of the self-employed remains higher for each MPCE decile compared to male workers. On the other hand, women remain disadvantaged when it comes to regular work and as Figure 5 shows, their access to regular work

**Table 6: Percentage Distribution of Male and Female Workers in Rural Areas by Activity (1999-2000)**

Operation	Male	Female	Total	Male	Female
Ploughing	91.5	8.5	100	9.4	1.8
Sowing	64.5	35.5	100	3.4	3.8
Transplanting	56.4	43.6	100	3.2	5
Weeding	51.7	48.3	100	7.2	13.7
Harvesting	64.5	35.5	100	16.1	18.2
Other cultivation activities	70.5	29.5	100	36.8	31.5
Forestry	58.7	41.3	100	0.6	0.8
Plantation	69.1	30.9	100	1.7	1.6
Animal husbandry	49.6	50.4	100	5.9	12.3
Fisheries	88.8	11.2	100	0.5	0.1
Other agricultural activities	71.7	28.3	100	12.9	10.4
Non-manual labour in cultivation	84.8	15.2		2.4	0.9
Total	67	33	100	100	100

Source: Computed from NSSO (2001a), unit-level data.

remains lower even as the economic status of households improves.

Although the structure of employment by employment status has been remarkably constant across the years, previous NSS surveys (till 1999-2000) showed some increase in casual labour among the rural male and female workforce and a decline in the share of the self-employed. But from 1999-2000 to 2004-05, there was a change in the

**Table 7: Number and Percentage of Farmers among Agricultural Workers**

	1983	1987-88	1993-94	1999-2000	2004-05
Number of farmers (millions)					
Male	79.5	83.4	88	85.3	96.8
Female	52	54.7	55.2	51.9	69.4
Persons	131.5	138	143.2	137.3	166.2
Percentage to total farmers					
Male	60.5	60.4	61.5	62.1	58.2
Female	39.5	39.6	38.5	37.8	41.8
Persons	100	100	100	100	100
Percentage of farmers to total agricultural workers in each sex category					
Male	64.2	65.6	61.1	58.6	64
Female	62.6	66.4	58.6	56.4	64.4
Persons	63.5	65.9	60.1	57.8	64.2

Source: Computed from NSSO (2006), unit-level data.

trend; the share of self-employed workers increased among both female and male workers, while the share of casual work declined. Why this has happened is difficult to say, but it is likely that the overall stagnation in agriculture and the rural economy may have led to this shift. The growth rate in agriculture and allied sectors was only a little more than 2% per annum in this period, registering a negative growth in some years. This may have led to shrinking availability of wage work and compelled workers to eke out subsistence from self-employment.

The next section discusses women’s employment in agriculture, while the subsequent section takes up women’s employment in non-agriculture. In each, the three broad statuses of employment are analysed.

**Table 8: Percentage Distribution of Rural Male and Female Casual Workers and Wages by Industry Divisions (2004-05)**

Industry	% Distribution		Wages (Rs per day)			
	Male	Female	Male	Female	Persons	Female/Male Wages
Agriculture, forestry and fishing	70.6	89.5	47.9	33.2	42.5	0.69
Mining and quarrying	1.4	0.8	68.6	45.7	63.9	0.67
Manufacturing	5.8	3.8	63.8	37.6	57.6	0.59
Electricity, gas and water	0	0	77.4	26.4	74.2	0.34
Construction	16.7	4.4	69.5	49.8	66.9	0.72
Wholesale and retail trade	1.3	0.1	57.6	36.3	57	0.63
Hotels and restaurant	0.4	0	65.1	46.7	64.4	0.72
Transport storage and communication	2.5	0.1	70	41.6	69.3	0.59
Financial Intermediation	0	0	144.5	–	144.5	
Real estate, renting, business	0.1	0	90.2	139.5	90.8	1.55
Public administration	0.1	0.1	61.3	40.5	56.3	0.66
Education	0	0.1	56.5	48.6	52.5	0.86
Health and social work	0	0.1	86.7	52.8	68.5	0.61
Community social and personal service	0.5	0.2	56.6	34.9	53.3	0.62
Private households	0.5	0.9	61.7	40.4	51.3	0.66
Extra territorial			42.9	–	42.9	
Non-agriculture	29.4	10.5	67.5	44	63.8	0.65
Total	100	100	54.6	34.7	48.5	0.64

Source: Computed from NSSO (2006), unit-level data.

**Agriculture**

In rural areas, about 83% women workers were engaged in agriculture in 2004-05, either as cultivators or labourers, as compared to 67% male workers, as Table 5 (p 51) shows. Table 5 also shows the decline in the proportion of men as well as women in agriculture over the years, but the decline is much sharper for men.

There has been a kind of “creeping feminisation” of agriculture. Male workers have steadily moved out of agriculture (and also out of rural areas) while for women workers, this movement

has been extremely tardy. Men have entered into more diversified occupations in non-agriculture, while women have tended to remain in the largely stagnant agriculture. In 1972-93, 83.2% male workers and 89.7% female workers were engaged in agriculture. By 2004-05, only 66.5% of male workers were in agriculture, compared to 83.3% of female workers. This has to be seen in the context of the fact that returns to labour are, on average, higher in non-agriculture than in agriculture, although the size of assets operated and type of employment, among other factors, are also relevant.

**Table 9: Characteristics of Informal Sector Proprietary Enterprises by Sex of Proprietor (1999-2000)**

	Rural				Urban			
	Own Account Enterprises		Establishments		Own Account Enterprises		Establishments	
	Male	Female	Male	Female	Male	Female	Male	Female
% of enterprises	81.5	5.4	12.9	0.2	70	19.1	9.7	1.2
% of Workers	76.8	11.5	11.2	0.5	53.7	36.6	7.3	2.4
Fixed asset per enterprise (Rs)	21,344	7,930	1,24,055	1,23,786	71,862	30,945	3,37,449	3,31,730
Gross value added/enterprise (Rs)	15,372	6,996	26,194	18,115	27,416	12,287	41,137	40,211

Source: Computed using unit-level data from NSO (2001b).

One implication of this slow change is that a significant proportion of the incremental female workforce gets engaged in agriculture. Between 1983 and 2004-05, nearly 72% of the incremental rural female workforce was absorbed in agriculture, compared to 40% for the male workforce.

### Agriculture: Casual Workers

From Tables 3 and 5, we can infer that compared to 23.2% male rural workers, 29.2% female rural workers were engaged as casual agricultural labourers in 2004-05. There is a disproportionate concentration of the most deprived social groups in this form of labour. Half of the female casual labourers and 43% of male casual labourers in India belong to scs and sts, nearly twice their share in the population.

Women agricultural casual workers form a distinct category – they are disadvantaged in many ways. As Table 6 (p 52) shows, there is significant gender segmentation of operations in agriculture.

**Table 10: Gross Value Added Per Worker and Fixed Assets Per Enterprise in Home-based Enterprises (1999-2000)**

	Gross Value Added Per Worker (Rs)		Fixed Assets Per Enterprise (Rs)	
	Male Proprietary	Female Proprietary	Male Proprietary	Female Proprietary
Rural	8,826	5,270	13,917	3,800
Urban	13,409	6,343	39,131	13,914
Total	10,435	5,544	22,341	6,229

Source: Based on NCEUS (2007).

While men predominate in activities such as ploughing and harvesting, women's share is much higher in operations like weeding and transplanting. The wages are uniformly lower in all female dominant operations. Overall, women's wages are estimated at 69% of male wages in 2004-05 (Table 4). Women also get fewer days of work. Further, women workers rarely get the minimum wages stipulated by the government.

The National Commission for Enterprises in the Unorganised Sector (NCEUS) has shown that more than 95% of female agricultural wage workers received wages lower than the minimum wage

(NCEUS 2007). The deprivation of casual workers is aggravated by the fact that not only are their wages lower than wages in non-agriculture (about two-thirds of that level), they have also grown at a lower rate in the recent period, thereby increasing the gap.

Moreover, as already pointed out, women workers who work as casual labourers are able to get work for only part of the year. Their estimated employment days were only 184 (compared to an already low 227 for male agricultural labourers). Women agricultural labourers are also unemployed for more days a year than their male counterparts. The unemployment rate for agricultural labourers is quite high in rural areas by any standard – 16% for men and 17% for women for 2004-05 by the current daily status criterion. This increased over 1993-94 to 2004-05 (NCEUS 2007).

### Agriculture: Self-employed Workers (Farmers)

As noted earlier, women workers in agriculture are increasingly self-employed (since the self-employed in agriculture are mostly

**Table 11: Percentage Distribution of Regular Workers by Industry and Wages Per Day (2004-05)**

Industry	% Share in Employment		Wages (Rs) Per Day			Female/Male Wages
	Male	Female	Male	Female	Persons	
Agriculture, forestry and fishing	9.9	11	68.1	53.7	65.2	0.79
Mining and quarrying	1.4	0.5	246.1	74.6	230.9	0.3
Manufacturing	20.6	18	118.4	40.8	105.4	0.35
Electricity, gas and water	2.4	0.3	242.4	253.9	242.6	1.05
Construction	2.1	0.3	106	92.5	105.6	0.87
Wholesale and retail trade	10.7	1.8	72.3	55.6	71.7	0.77
Hotels and restaurant	1.7	1.1	85.2	41.4	79.3	0.49
Transport, storage and communications	14.5	1.8	126.5	127.5	126.5	1.01
Financial intermediation	2.2	0.9	257.1	138.2	246.6	0.54
Real estate, renting, business	1.2	0.6	101.9	133.7	105.1	1.31
Public administration	12.6	5.9	199.6	81.3	187.4	0.41
Education	15.4	37.8	222.4	115.4	183.8	0.52
Health and social work	2.5	8.9	178.5	123	154.7	0.69
Community social and personal service	1.8	0.9	80.8	53.6	78.1	0.66
Private households	1	10.3	64	29.6	39.5	0.46
Extra-territorial			250	–	250	–
Non-agriculture	90.1	89	151.1	86.3	139.1	0.57
Total	100	100	143	82.9	131.8	0.58

Source: Computed from NSSO (2006), unit-level data.

farmers, we use the word “farmer” instead of “self-employed”). There has been a steady increase in the numbers of both women and men farmers over all years since 1983 except 1999-2000. The sharpest increase has taken place in the recent quinquennium when the share of women farmers increased to 41.8% (Table 7, p 52), the highest in 32 years. These results attest to the large role played by women farmers although they do not confirm a systematic trend towards feminisation.

Such a large presence of women farmers requires systematic public support, which is lacking mainly because women are not seen as principal producers in agriculture and because they do not have ownership or control over the assets on which they work. The poor support to women farmers has been highlighted in several studies and reports, notably Planning Commission (2007 and 2008) and NCEUS (2008). Srivastava et al (2008) have shown that despite legislative changes, few women have control over land. However, the agricultural census provides information

on operational holdings, that is, agricultural holdings operated and controlled by men and women, whether or not they are owned by them.

According to the Agricultural Census 2000-01 (the latest year for which data is available), only 11.6% of cultivated agricultural landholdings, covering 9.1% area, were operated by women. There is a systematic decline in the percentage of landholdings and area controlled by women as the size of holding increases. In the smallest size class (below 0.5 hectares), the percentage of landholdings operated by women was 13.4 whereas the area operated by them was 12%. In large holdings (greater than 10 hectares), the corresponding percentages declined to 5.7 and 5.6, respectively. These figures could partly be explained by the pattern of out-migration since it is in smaller holdings where male

**Table 12: Percentage Distribution of Women Workers by Poverty and Other Correlates (2004-05)**

	Economic Category							
	Extremely Poor Poor		Marginal Vulnerable		Middle		Higher Income	
<b>Activity Status</b>								
Self-employed	45.3	50.2	57.0	67.3	76.9	71.0	63.1	
Regular wage employee	2.5	2.1	2.0	3.4	6.6	22.2	3.8	
Casual worker	52.1	47.7	40.9	29.3	16.5	6.7	33.1	
Total	100	100	100	100	100	100	100	
<b>Industry</b>								
Agriculture	84.5	85.0	84.9	83.7	80.2	63.5	83.2	
Mining, manufacturing and electricity	9.8	9.2	8.7	9.2	7.9	7.2	8.9	
Construction	1.9	2.0	1.8	1.4	1.0	0.3	1.5	
Trade, hotels and transport	1.8	1.6	1.8	2.6	4.1	5.7	2.6	
Finance and real estate	0.0	0.0	0.0	0.0	0.2	1.6	0.1	
Administration	0.0	0.1	0.1	0.2	0.5	1.6	0.3	
Education	0.2	0.5	0.7	1.3	3.9	15.2	1.7	
Health	0.1	0.0	0.2	0.3	1.0	3.3	0.4	
Community, household and extra	1.7	1.5	1.8	1.3	0.9	1.8	1.4	
Total	100	100	100	100	100	100	100	
<b>Education</b>								
Illiterate	81.2	77.5	71.7	62.9	47.5	24.8	64.5	
Primary and below primary	13.7	15.6	17.7	21.5	23.3	22.6	19.7	
Middle	3.9	4.8	7.6	9.9	14.0	16.6	9.2	
Secondary and above but below graduate	1.2	1.9	2.7	5.2	12.8	23.5	5.7	
Graduate and above	0.0	0.1	0.2	0.5	2.4	12.5	0.9	
Total	100	100	100	100	100	100	100	

Source: Computed From NSSO (2006), unit-level data.

outmigration is also likely to be higher. However, cultural and social factors are also very important in explaining the fact that a minuscule proportion of women have control on this critical resource.

This is brought out by the regional pattern of women's control over landholdings. The percentage of such holdings was much higher in the more progressive southern states and in some of the north-eastern states. In Kerala, women operated 21% of landholdings and 18% of area. In Andhra Pradesh, the corresponding figures were 20% and 17% respectively while in Tamil Nadu, they were 18.1% and 15.1 respectively. In the absence of land titles, women farmers have much smaller access to institutional credit compared to male farmers, and receive a much lower degree of institutional support.

### Non-Agriculture: Casual Workers

Wages of casual workers estimated from the 2004-05 NSSO Survey show that female wages are lower than male wages across all industry groups. The relative male-female wage gap is larger in non-agriculture where female casual workers earn 65% of male wages. In manufacturing, female wages are only 59% of male wages (Table 8, p 52).

The low wages of female workers are principally due to the undervaluation of work and skills in activities in which women predominate. Thus, the segmentation of women workers into certain types of activities largely determines the gender gap. A number of national and international studies have documented the sex-typing of occupations (for example, Anker 1998). In India, this phenomenon has been noted in a number of industries such as knitwear and garments (Vijayabhaskar 2002; Singh and Sapra 2007). These jobs provided limited opportunity for upward mobility (Neetha 2002).

Such segregation can also be found in the services sector. In the health and education sectors (which also involve regular workers, as discussed separately below), women are concentrated at the lower end as paramedics, teachers in lower grades, or support staff (NCEUS 2007). The hierarchy of jobs within manufacturing or services is then used to value the jobs where women are concentrated as low-skilled workers, even if it involves exceptional talent and years of informal training.

### Non-Agriculture: Self-employed Workers

As we have noted earlier, the self-employed workers are not a homogeneous group. They fall into three subgroups. The first are the "employers". The second are the "own account workers", and the third group is constituted by the "helpers" who assist the main family workers in an unpaid capacity. A significant percentage of self-employed women workers (49.1%) are classified as helpers, i.e., they are recognised only as auxiliary workers. This percentage is much larger than among male self-employed workers among whom 15.2% are classified as unpaid workers. Further, while one of the stated advantages of self-employment for women is that this work can be done based at home, and women can work at their pace and convenience, this results in multiple disadvantages in the form of limited opportunities, seclusion, and lower earnings.

### Female Proprietary Enterprises

The informal sector enterprises survey (NSSO 2001b) provides a profile of female and male proprietary enterprises. The survey found that about 5.4% of proprietary enterprises in rural areas were operated by women and these were mainly own account enterprises (OAES) (Table 9, p 53).<sup>2</sup> Approximately 12% of the workers in proprietary enterprises were engaged in the female proprietary enterprises.

In general, urban enterprises are larger in size, and for the same category, female proprietary enterprises are smaller than male proprietary enterprises. In rural areas, female proprietary OAES are very small in size, with an average fixed investment of less than Rs 8,000, or a little more than one-third that of male proprietary OAES. Female establishments (informal enterprises

hiring one or more workers) in rural areas had a total fixed asset base of Rs 1,23,786, more or less similar to rural male proprietary establishments. The gross value added per worker in female proprietary OAES was less than Rs 7,000 per annum, while in male proprietary OAES, it was more than twice as high. NCEUS (2007) shows that among rural female OAES, about 34% have a value of fixed assets of less than Rs 1,000, while only 7% had value of assets greater than Rs 25,000. Not only are few women involved in running non-agricultural enterprises of any kind, the scale of operation of women operated units is distinctly very tiny, particularly in rural areas. Compared to the national minimum wage, 89% of female OAES and 42% of male OAES gave lower imputed daily returns, using unit-level data from NSSO (2001b).

### Home Workers

Nearly 81% of rural female enterprises and 39.5% of male enterprises operated from their homes in 1999-2000, i.e., they were home-based enterprises. About 40% of these enterprises in rural areas worked on a sub-contracted basis, i.e., their workers were

**Table 13: Percentage Distribution of Rural Agricultural Workers by Educational Attainment (2004-05)**

Education Level	Agricultural Labourers			Farmers		
	Male	Female	Total	Male	Female	Total
Illiterate and below primary	65.9	85.5	74.1	45.7	74	57.5
Primary	15.7	7.5	12.3	16.2	10.8	14
Middle	13.3	5.3	10	18.9	9.5	15
Secondary	3.7	1.2	2.6	10.3	3.9	7.6
Higher secondary and above	1.5	0.4	1	8.9	1.9	6
Total	100	100	100	100	100	100

Source: Computed from NSSO (2006), Unit-level data.

home workers as defined by the International Labour Organisation (ILO). Home workers work at the lowest end of a value chain, usually dealing with petty contractors, on whom they depend for supply of work, raw material and sale of finished goods. This dependence on the contractor, together with the isolation undermines their ability to bargain for higher piece-rates, timely payments or overtime pay. The annual gross value addition of the rural female home workers is, on average, Rs 5,270 (Table 10, p 53), much lower than even the Rs 6,996 that accrues to female OAES. The average value of fixed assets engaged by them is also very low at Rs 3,800.

About 79% of the women and 63% of the male home workers were paid on a piece-rate basis (NSSO 2001c). This wage has many hidden costs, including use of the house and electricity, delayed payments, and arbitrary cuts in wages on the pretext of poor quality (HomeNet South Asia and Institute for Social Studies Trust 2006).

### Non-Agriculture: Regular Workers

Female regular workers in rural areas form a very small part of the female workforce as also of the total proportion of regular workers in rural areas. Table 11 (p 53) shows that outside of agriculture, they are mainly concentrated in education (37.8%), manufacturing (18%), private households (10.3%), health and social work (8.9%) and public administration (5.9%). Work in private households (mainly as domestic help) earns women the lowest wages of Rs 30 per day, followed by employment in hotels and

restaurants, manufacturing, and agriculture. Sectors with the highest daily remuneration, such as electricity, gas and water, transport; financial intermediation; and real estate employ very few women on a regular basis. Among the sectors where a larger proportion of women take up employment, education and health sectors afford reasonable daily earnings.

As noted in Table 4 earlier, the daily earnings of women regular/salaried workers are more than twice as high as women casual workers. However, within regular work, as with casual work, there is a large gap in male-female earnings across most sectors (with the exception of electricity and transport), ranging from a female-male earnings ratio of 0.3 in mining to 0.87 in construction. Even in the social sectors, there is a large gap in earnings, with this ratio being as low as 0.52 in education and 0.69 in health and social work (Table 11). Women workers in these sectors tend to be concentrated in the lower segments, as paramedics, support staff, contract teachers or teachers in low grades.

### 3 Correlates of Poverty and Vulnerability for Women Workers

So far, this paper has discussed various dimensions of employment of rural women without relating them to the poverty status of the women workers. We now briefly draw attention to the characteristics of women workers and poverty levels in rural India. Following the methodology adopted by NCEUS (2007), we have used the official poverty line (PL) as a benchmark to categorise the population into six groups.<sup>3</sup>

Table 12 (p 54) shows that while the percentage of casual workers declines rapidly with improving economic status, the percentage of regular workers is only high in the last category. The self-employed have a presence in all economic categories, but are more predominant as economic well-being improves. In terms of industrial composition, it can be seen that while agricultural workers are present in all categories in large proportions, their weight declines in the highest category while that of tertiary sector workers increases. It can also be seen that workers with higher levels of education are almost entirely present in the higher economic categories. Education, analysed in greater detail below, plays a critical role.

One of the major attributes of women engaged in agriculture is their low level of educational attainment. With the ongoing commercialisation of agriculture, crop diversification, introduction of new technologies and the imperative for better information processing, education has to be reckoned as a key input in any attempt at overall development and modernisation of agriculture. However, the grim picture is that about 86% of female agricultural labourers and 74% of female farmers are either illiterate or have education below the primary level (Table 13). Shocking as it may seem, the average education of a female agricultural labourer was less than one year in 2004-05.

### 4 Determinants of Women's Workforce Participation

In this section, the determinants of participation of rural women in employment are analysed through use of regression analysis. In the absence of a single data set containing all the relevant variables, this paper first conducts a logistic regression based on unit

records of the NSS Employment-Unemployment Survey of 2004-05; this is followed by a similar analysis using the unit data records of the NFHS 2005-06, which also has information on women's autonomy using certain indicators. As both these analyses confirm significant differences across states/regions, an analysis using state-level variables is also carried out.

### Determinants of Participation in Employment Using NSS Data (2004-05)

The analysis attempts an explanation not only of why women participate in the workforce, but also why they participate in specific types of employment, as cultivators, casual workers in agriculture, and in various types of employment in non-agriculture. The independent variables used are age group, marital status, education status, caste group, religion, presence of children under five years, landholding size category, MPCE quintile, and region.

As mentioned earlier, logistic regression is used since the model does not make distributional assumptions on the predictors, which can be both continuous and discrete. The results are presented in Appendix Table 1 (p 61) in the form of odds ratios and their significance level, and are briefly discussed here:

#### Agriculture: Determinants of Work Participation

Among the individual characteristics, it is seen that compared to women in the age group 15-29, older women have a higher probability

**Table 14: List of Variables and Description**

Variable	Description	Source
WPR_total	Workforce participation rate – rural women 15-59 years	NSSO, 2004-05
WPR_nag	Workforce participation rate – non-agriculture rural women workers	Same as above
WPR_naglab	Workforce participation rate – non-agricultural female labour (regular + casual)	Same as above
WPR_RS	Workforce participation rate of regular/salaried rural female workers	Same as above
WPR_SE	Workforce participation rate of self-employed non-agricultural rural female workers	Same as above
MYrSch_all	Mean years of schooling of all rural women	Same as above
FCwage_nag	Wage rate of rural female non-agriculture casual labour	Same as above
Fwage_nag	Wage rate of rural female non-agriculture labour (regular + casual)	Same as above
avg mpce	Average rural MPCE expenditure	Same as above
Sh_R_ST/SC	Share of rural ST/SC population	Population Census 2001
Per_any_mob	Percentage share of women 15-49 years who can go alone to one of the following three places – market, health facility, outside village	NFHS 2005-06
Sh_Fholdarea	Share of area in female holdings to total area of holdings	Agriculture Census 2000-01
SHG_RuHh	Total self-help groups per 100 rural households	NABARD
RD_exp_cap	Revenue expenditure on rural development per capita (Rs)	RBI State Finance
SGDP_cap	State gross domestic product per capita (Rs)	CSO

Based on computations carried out by the authors.

of participating in work, and women in the age group 30-44 have the highest odds ratio (2.23). Compared to never-married women, married, divorced and separated women have a higher probability of participating in work, with divorced or separated women having the highest odds ratio (3.39). Compared to illiterate women, women with higher levels of education have a lower probability of being in the workforce. The odds ratio declines with rising levels of education, recouping somewhat only for women who are diploma holders or graduates. Compared to STs, all other caste groups have a lower probability of participating in work, with higher castes having the lowest probability. Muslim women have a much lower probability of being in the workforce compared to Hindu women.

As one would expect, possession of land has a very important influence on a woman's participation in employment. Overall, a woman is more likely to be in the workforce if the household has some land and this likelihood goes up with the size of land. Controlling for land, the household's consumption level has a negative influence. Finally compared to women in the eastern region, women in all other regions have significantly higher probability of being in the workforce.

#### Agriculture: Casual Workers

In this case, younger women workers have the highest probability of working as casual agricultural labourers. The marital status variable is not significant. SC women workers have a significantly higher odds ratio of being an agricultural labourer and this probability declines steeply with rising levels of education, for Muslims and for women workers with young children. Casual agriculture wage status for workers is much less probable for women workers possessing larger holdings and in higher consumption quintiles.

#### Agriculture: Self-employed Workers

The highest proportion of women workers are engaged as self-employed in agriculture. The probability of a woman worker being self-employed in agriculture is the highest for the high age group (45-59) and for currently married women. The odds ratio are lower for divorced or separated women indicating that these women no longer have access to land. The odds ratio declines with increasing levels for education and is the lowest for women workers who are graduates or diploma holders. SC women workers who have the lowest access to land also have the lowest probability of being self-employed in agriculture. Muslim women workers again are less likely to be engaged in farming. As one may expect, the probability of engaging in agriculture increases sharply with bigger landholdings and also with higher levels of household consumption. Women workers in the northern region

have the highest probability of being engaged in agriculture as self-employed (relative to those in the east), while women workers in the southern region have the lowest probability of being so engaged.

#### Non-Agriculture: Determinants of Work Participation

Since female workers have largely remained confined to agriculture, the characteristics of workers who have moved out of agriculture are of great interest. Any type of worker in non-agriculture is taken up first. The probability of being a non-agricultural worker is higher for women in the age group 30-44 (odds ratio: 1.135) than for workers in the youngest age group and is lower for currently married women. It rises sharply with increasing levels of education.



Compared to illiterate women workers, those with secondary education have an odds ratio of 4.787 while those with graduate or vocational education have an odds ratio exceeding 30. Compared to ST women workers, all other social groups have significantly higher odds ratios, the highest being for “other” caste women. Muslim workers are more than twice as likely to participate in non-agricultural work. The odds ratio declines with increasing size of landholding and is significantly higher than one for women workers belonging to the highest consumption quintile.

### Non-Agriculture: Wage Workers

Non-agricultural wage workers are younger and either unmarried or divorced women. The odds ratio is 0.58 for the highest age group and 0.61 for currently married women workers. The odds ratio steadily declines with higher levels of education. While there is no significant difference across social groups, Muslims have a significantly lower than one odds ratio. These ratios also decline dramatically with higher landholdings. The consumption level has a smaller influence on this variable but the odds ratio is significantly lower than one (0.73) for the highest quintile. Compared to the reference region, the west and the north both have significantly lower odds ratios.

### Non-Agriculture: Self-employed Workers

The probability of being self-employed is higher among young women workers and those who have never married. The odds ratio is significantly lower among currently married and widowed women workers. Education increases the probability of taking up self-employment, but the highest odds ratios are for those with secondary or higher secondary levels of education. All social groups have higher odds ratios compared to the reference group (ST). For the Muslim women workers, the odds ratio is more than twice as high as Hindu workers. This is principally due to the hereditary involvement of these workers’ households in artisanal activities. The odds ratio declines steadily with increasing possession of land and is significantly higher than one only for the second quintile in terms of household MPE. Women workers in the eastern region (the reference group) have the highest probability of being so employed.

### Non-Agriculture: Regular Workers

This is the smallest segment of workers among rural women. Compared to the reference groups, the odds ratio is higher for older women and for widowed/separated women. (It is lower than one for currently married women). It increases dramatically with increasing levels of education. Among social groups, it is significantly lower than one for OBC and upper caste women workers. The odds ratio falls with increasing size of holding (it is 0.166 for medium-large holdings) and is significantly higher than one (1.88) for the highest quintile.

### Discussion

The regressions bring out a number of interesting relationships between individual, household and regional characteristics in rural India. First, possession of land is naturally a very strong determinant of the participation of women in work and particularly

their employment as women farmers. Controlling for land, the household’s consumption status raises the possibility of a woman worker being self-employed, either in agriculture or non-agriculture, but reduces this possibility in all other cases. It may be noted that these cases would require the worker to be employed outside the home where cultural and social norms begin to play a bigger role. Muslim women not only have an odds ratio significantly lower than one overall, this also holds for all types of employment except non-agricultural self-employment (which then gets reflected in their participation in overall non-agricultural employment). As far as social/caste groups are concerned, our reference group is ST. Among this group, access to land and common property resources is much higher than that for SCs (who have the least access to land). This accounts for their high WPR. The odds ratio for this is the lowest among upper castes.

**Table 15: Estimated Regression Equations for State-level Determinants of Workforce Participation of Rural Women**

Independent Variable	Dependent Variable				
	WPR_Total	WPR_nag	WPR_SE	WPR_naglab	WPR_RS
MYrSch_all	2.299	1.135*	0.106	0.815**	0.823***
Sh_R_STSC	0.841*				
Sh_Fholdarea	1.436*			0.215**	0.086*
GDP_cap	0.001				
SHG_RuHh		1.854***	1.268***		
Constant	3.848	0.519	1.214	-0.469	-1.124
R-squared	0.495	0.494	0.461	0.515	0.686
Adjusted R-squared	0.36	0.431	0.394	0.458	0.649
F	3.671**	7.811***	3.847***	9.037***	18.604***

\* Significance at 1% level.

\*\* Significance at 5% level.

\*\*\* Significance at 10% level.

For the same reason, SCs have the highest odds ratio for participating in agricultural wage employment, as one might expect. In non-agriculture, overall, STs have the lowest probability of participation, followed by SCs, OBCs and upper castes. The surprising result is that among workers, upper castes and OBCs have a lower likelihood of participation in regular work than SC/ST, controlling for all other factors.

Considering the three demographic variables (age, marital status and presence of young children), the last has the smallest influence of participation in any/all type of work. Currently, married women have a lower likelihood of working outside their homes, while single women are more likely to participate in self-employment. Other than this, widowed and separated women have a higher likelihood of participating in most types of work. Other than land, education appears to be the most important determinant of employment status. Participation in the workforce as well as in wage employment (both agricultural and non-agricultural) declines with level of education, while the likelihood of participation in non-agricultural work as a whole, as well in self-employment or regular work increases with rising levels of education. From these regressions, it is apparent that while the level of education may not positively influence a woman’s participation in work, for women who are in the workforce, education is indicated as the most important determinant of better quality non-agricultural work.

It must be emphasised again that we are examining the outcome of social, cultural and economic processes. The potential

availability of work is highest in rural areas for women whose households possess a measure of adequate landholdings. But even here, actual participation may be determined by sociocultural factors, as is evident from our results. The absence of education relegates women workers to wage work, whereas having education improves their chances of being in non-agricultural self-employment or regular work, with the latter mainly requiring higher education qualifications. Participation in wage work or non-agriculture also requires a greater measure of autonomy for women, confining the rest principally to self-employment in agriculture.

### Determinants of Participation using NFHS Data

The main distinguishing feature of the NFHS, because of which this data set has been analysed in this paper, is that it collects information on women's autonomy using a number of indicators. Among these indicators, a set of three indicators to capture women's freedom of mobility are in our view central to their participation in the labour market (International Institute for Population Sciences 2007). The three indicators of women's mobility are whether they are allowed to go alone to the market/health facility/or outside the village or community.

The other variables are similar to those used in earlier analysis, but with the following significant differences. First, this data has a younger age cohort of women (15 to 49 years only). Second, employment has been measured differently in this survey. While the employment characteristics of these women are captured in the survey, this is not done in the same manner or depth as the NSS. The survey enquires whether women are currently working (in the last seven days) or have worked in the last year. It also asks whether they work for family production or in paid employment. The women workers are then classified as per their occupational categories.

It should be noted that the NFHS does not distinguish between paid casual and regular/salaried employment, which are clubbed together. Third, the NSS does not provide information on how many children a woman has (though it does give the number of children in a household). With NFHS data it is possible to identify the mothers with young children. Finally, the NFHS does not allow us to estimate consumption expenditure as in the case of the NSSO and hence this variable has been dropped from the analysis. But the NFHS gives a synthetic wealth indicator, used in the present analysis, which is built on a factor analytic score based on 33 assets.

As before, logistic regression is used to estimate the influence of several variables on participation in employment, by status (self-employment or paid) and industry (agriculture or non-agriculture), so that the types of employment participation considered are similar to those in the NSS analysis.

The results of the logit analysis are summarised in Appendix Table 2 (p 61). These results are similar to the earlier results in many basic ways and are not discussed here. Attention is drawn only to fresh findings. Three main conclusions emerge sharply from the above analysis.

First, the role of education is delineated more sharply among this (younger) age cohort of women. Increasing levels of education increases the possibility of women being in non-agricultural vocations. This result holds separately, both for self-employment

(where, however, a secondary or higher-secondary level of education leads to modal participation rates) as well as for paid work.

Second, women's autonomy, proxied here by their ability to make mobility decisions autonomously, significantly increases the probability of their participation in all types of employment, except agricultural self-employment. The reason for this is that whether it is in low-paid work as casual labour or better-paid work as regular workers, both take women out of the confines of the house and therefore require women to have freedom of movement. However, where women do not have this freedom and are constrained by social norms to the home, but still need to work, self-employment provides the answer.

Third, women with young children are most likely to be working as self-employed in agriculture and least likely to be employed as paid workers or in non-agriculture. This suggests the urgent need to provide early childcare and crèche facilities for rural women.

### Determinants of State-Level Variations in Employment

The large state-wise and regional difference in rural female employment participation in India has been alluded to earlier. The logit regressions in Section 5 confirm these differences but the NSSO data set gives very limited measures of sociocultural differences. We therefore explore the impact of additional variables, gleaned from other data sources such as the NFHS, the agricultural census, the CSO, and the National Bank for Rural Development (NABARD) on state-level variations in female employment. A list of the variables considered for this analysis is given in Table 14 (p 56).

Appendix Table 3 (p 62) presents the total and sectoral work-force participation rates across 20 states in 2004-05. The WPRS by employment status and sector are also presented. Total WPRS are high in some of the southern (Andhra Pradesh, Tamil Nadu, Karnataka), western (Maharashtra, Gujarat, Rajasthan) and hill (Himachal, Uttarakhand) states. They are the lowest in the eastern states (West Bengal, Assam, Bihar). There are important sectoral differences. For example, states such as Kerala, West Bengal and Orissa which have low total WPRS show a high participation of women in non-agriculture. The highest participation rate of women in regular work is in Kerala. The state-level values of the other variables, as well the correlation between the variables is given in Appendix Tables 4 and 5 (p 63) respectively.

It is anticipated that these differences could be a result of supply-related characteristics such as (1) the percentage of SC/ST households in a state, (2) mean years of education of women, (3) variables which could proxy women's autonomy to undertake economic activity (independent mobility; control of landholdings, participation in self-help groups), and (4) rural wages; or (5) employment demand (mean rural income proxied by per capita consumption expenditure, per capita state domestic product, or expenditure on rural development programmes).

Since our objective is to understand not only total WPRS, but also women's participation in specific types of work, especially in non-agriculture, these rates are regressed for 20 states across the above-mentioned variables, selecting only one variable in (3) and (5) above. The "best" fits are presented below. Some of the independent variables that were considered were found to be highly

correlated, in particular with mean years of education, and were dropped from the analysis. Fewer numbers of variables have therefore been tested and used in the regression analysis.

The results of the regression are presented in Table 15 (p 57). These are briefly discussed below.

*Total WPR:* The share of sc/st in the total population is highly significant variable. A 1% increase in the share of sc/st in the population would increase total WPR by 1%. The share of women operated holdings in total is also marginally significant (at the 6% level). The mean years of education for the population are not significant.

*WPR in Non-Agriculture:* The mean years of education of the female population and the density of self-help groups (per 100 population) are both significant variables. Increase in mean years of education by one year would increase the WPR of women in non-agricultural vocations by 1.35%.

*WPR in Non-farm Self-employment.* The only variable significant in this case is the state density of self-help groups. The mean educational attainment of women in a state is not a significant determinant of state-level variation of WPR in non-farm self-employment.

*WPR in Non-agricultural Wage Work:* Mean years of education and share of area operated by women are both significant variables (at 5% level). A one year increase in education would increase the WPR in non-agricultural wage work by 0.81%. The coefficient of share of area operated by women is 0.21.

*WPR in Non-agricultural Regular/Salaried Work:* Mean years of education is a highly significant variable; one year increase in education would increase the WPR in regular/salaried work by 0.82%. The share of area in holdings operated by women is also significant but only at 10% level of significance. The coefficient of this variable is quite low (0.09).

*Discussion:* The share of sc/st in the population emerges as the only significant variable in explaining interstate variation in total rural female WPR. However, interstate variations in WPR in non-agriculture as a whole, as well as participation in non-agricultural wage labour are determined by the average educational level of the female population and by variables which reflect women's economic autonomy and control over resources (density of self-help groups or control over landholdings). However, education is not a significant variable in explaining the interstate variations in participation by women in non-agricultural self-employment, but here also their autonomous participation in self-help groups is an important determinant. It has already been noted that the above regression analysis has been able to incorporate demand-side factors to a very limited extent. This probably accounts for the fact that the adjusted coefficients of determination are on the low side. Nevertheless, these results, which focus on state-level variation, reinforce the results in previous sections and bring out the role of education and women's autonomy in promoting women's employment outside agriculture.

## 5 Conclusions

While women workers in general constitute a marginalised category within the class of workers, rural women workers occupy a lower position compared to their urban counterparts, and the lowest layer among them is constituted by those belonging to the bottom strata of the society, i.e., the scs and sts.

Women have lower work participation rates in activities which are included in the System of National Accounts (SNA). But while women's time use in economic activities that give them a return is limited, their participation in household activities that indirectly contribute to the economic output of the household (called extended SNA) far exceeds that of men. For rural women, women's participation in SNA activities is higher than urban women but also closer to men. These rates are also higher for women belonging to scs/sts than other women. A significant percentage of rural women workers are engaged in subsidiary status work.

An important argument in this paper is that higher WPRs per se do not indicate a higher level of welfare. Only when higher WPRs are accompanied by higher educational capabilities and/or asset and income, do they become meaningful from a welfare and, especially, income point of view. We show that rural women workers are concentrated in agriculture to a much larger extent than men. On the other hand, a much smaller proportion works in non-agricultural jobs, particularly the more valued regular/salaried jobs. The conditions of work, especially for women wage worker, are quite dismal. Women workers are also subjected to various forms of discrimination including job-typing, which gives them a lower wage compared to men. Among the women wage workers, a proportion of those who report regular employment also work in poor conditions, receiving low wages with long hours of work, no social security and very few holidays. The position of self-employed women in non-agriculture is also poor. Their capital base is low and consequently their value addition is also low. One-third operate from their own homes.

The overall picture that emerges is one of greater disadvantage for women workers in general and those belonging to rural areas as well as scs/sts in particular. Apart from inherited social disadvantages in a patriarchal structure, the other important contributory factors are limited access to assets and other resources, and low levels of education and skills. We show that women with low levels of education and autonomous mobility, whose households operate land, are concentrated in agriculture as self-employed. Poorer women who lack land but have some degree of mobility are concentrated in agricultural wage work, which pays most poorly. All types of non-agricultural work require, on average, relatively more education and some degree of autonomy. The more valued jobs require a greater quantum of these. We show that these variables also determine variations in women's participation in the more valued jobs outside agriculture. The poor status of rural women in terms of their autonomy and control over assets – this picture is regionally somewhat differentiated – and low levels of education and employable skills calls for interventions of a promotional nature from different entry points. In this concluding section we draw attention to some of the major issues which emerge from our analysis.

First, a higher level of education and employable skills for women workers is a sine qua non for improving their levels of productivity and enabling them to move into non-agricultural vocations. The emphasis on universalising elementary education has undoubtedly narrowed the enrolment gap between men and women, but given the low levels of education and employable skills and the gap between men and women workers, initiatives should also focus on the exiting workforce. Further, as the results of this paper and evidence from other studies shows, a break point occurs when women and men acquire a higher secondary level of education, enabling them to enter higher quality jobs (Srivastava 2008).

Second, women's autonomy, measured here in terms of access to land and control over its operation, as well as mobility and the willingness to join self-help groups, affects their ability to access resources and improve productivity, and also to move into non-agricultural vocations. Such autonomy responds to a complex set of social factors. But policy initiatives can move the frontier outwards and can improve women's access to knowledge, technology and resources, empowering them as economic agents. Fostering a group approach, drawing upon some of the existing experiences documented by Food and Agriculture Organisation (FAO) and Indian experiences can help to overcome many of the existing asymmetries (Rouse 1996; NCEUS 2008).

Further, the bulk of women workers remain in agriculture as farmers and the most recent figures indicate an increase in their proportion among farmers. As shown by a Planning Commission sub-group (Planning Commission 2007) and by NCEUS (2008), they are regarded as peripheral producers and are marginal

recipients of benefits of government programmes and from development and credit institutions. There is a strong need for a gender-sensitive agricultural strategy which strengthens the role of women workers in all aspects of agriculture.

Labour market segmentation and discrimination has kept the returns to women workers low, in most cases well below the legal minimum. The analysis in this paper supports the creation of a body, which can examine the issue of valuation of women's work in those activities in which women predominate in fixing minimum wages in casual wage work as well as home-based work. This is in line with a recent proposal made by the NCEUS which has asked for the creation of a skill certification council (NCEUS 2007). The commission has also recommended a tripartite dispute settlement framework, which can help to enforce non-discriminatory practices in the informal labour market in India.

Finally, rural women workers, especially agricultural labourers, have high rates of unemployment and underemployment. These workers also receive abysmally low wages for a variety of reasons. The National Rural Employment Guarantee Programme which has been initiated in 2006 and which has now been extended to all rural areas can play a major role in improving demand for women's labour, increasing reservation wages, and setting labour standards in rural areas. Some impact has already been felt in a number of areas, but much more needs to be done to implement this scheme effectively and to increase opportunities for quality and decent work in rural areas. In our view, this programme constitutes the axis around which the employment conditions of the poorest women workers can improve in rural India.

## NOTES

- 1 If a person is not in the labour force (neither employed nor unemployed), she could be engaged in other types of activities including domestic duties. The CSO provided official visibility to the double burden of work through a pilot study of utilisation of time by men and women in six states in 1998 (CSO 2000). The report classified the activities based on the 1993 System of National Accounts (SNA) into three categories: (i) Economic activities that are included in the SNA; (ii) Activities not currently included in the SNA but are characterised as 'extended SNA', which include household maintenance and care for the children, old and the sick in the household; and (iii) Non-SNA consisting of the social and cultural activities, leisure and personal care. The study confirmed that women spend a disproportionate amount of time in what is called "extended SNA". On the other hand, men spend a much greater time in SNA activities than women. As for non-SNA activities, the difference was not as striking. In short, women spent 17% more time in SNA plus extended SNA activities compared to men.
- 2 For definitions of these terms, see NCEUS (2007: 51-52).
- 3 Households have been divided as follows: (1) Extremely poor: up to 0.75 PL; (2) Poor: between 0.75 PL and PL; (3) Marginal poor: between PL and 1.25 PL; (4) Vulnerable: between 1.25 PL and 2 PL; (5) Middle: between 2 PL and 4 PL; (6) Higher income: above 4 PL. The four lower categories have together been characterised as "poor and vulnerable".

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## Appendix Tables

Table 1: Results (Odds Ratios) of Logistic Regression for Women/Women Workers, 15-59 Years, 2004-05 (NSSO)

	1 = Employed; 0 = Unemployed/ Not in Labour Force	1 = Agriculture Self-employed; 0 = Other Workers	1 = Agriculture Wage Workers; 0 = Other Workers	1 = Non-agriculture; 0 = Other Workers	1 = Non-agriculture: Self-employed; 0 = Other Workers	1 = Non-agriculture: Regular Workers; 0 = Other Workers	1 = Non-agriculture: Wage Workers; 0 = Other Workers
	1	2	3	4	5	6	7
Age (Ref: 15-29)							
30 – 44	1.806*	0.985	0.870*	1.135*	0.965	1.959*	0.873
45 – 59	1.194*	1.340*	0.744*	0.91	0.806*	2.102*	0.581*
Marital status (Ref: never married)							
Currently married	1.479*	1.585*	0.913	0.643*	0.688*	0.730*	0.607*
Widowed	2.233*	0.807*	1.184	1.061	0.739*	2.280*	1.174
Divorced/separated	3.387*	0.554*	1.28	1.308	0.771	2.740*	1.394
Education (Ref: Illiterate)							
Below primary	0.707*	0.861*	0.908	1.377*	1.338*	2.203*	0.891
Primary and middle	0.514*	0.951	0.517*	1.850*	1.637*	4.703*	0.791*
Secondary and higher secondary	0.341*	0.430*	0.225*	4.787*	1.740*	32.724*	0.436*
Graduate and above (diploma)	0.588*	0.053*	0.054*	30.184*	1.480*	178.236*	0.279*
Social group (Ref: ST)							
SC	0.419*	0.516*	1.575*	1.429*	1.529*	1.269	1.167
OBC	0.425*	0.925	0.849*	1.442*	2.116*	0.677*	0.835
Others	0.335*	0.987	0.660*	1.503*	2.152*	0.741*	0.886
Religion (Ref: Hindu)							
Muslims	0.443*	0.689*	0.608*	2.074*	2.065*	1.198	1.318
Other religions	1.259*	1.365*	0.739*	0.933	1.063	0.862	0.642*
Households with children aged <= 5 (Ref: No)							
Yes	0.955	1.123*	0.867*	0.983	1.012	1.031	0.871
Land possessed (Ref: landless)							
Sub-marginal and marginal	1.288*	9.366*	0.402*	0.500*	0.634*	0.450*	0.595*
Small	1.764*	44.659*	0.105*	0.154*	0.226*	0.220*	0.154*
Medium-large	1.761*	106.512*	0.025*	0.091*	0.127*	0.166*	0.092*
MPCE quintile (Ref: lowest quintile)							
Fourth quintile	0.864*	1.542*	0.697*	0.941	0.939	0.938	0.987
Third quintile	0.759*	1.937*	0.548*	0.936	0.941	1.206	0.842
Second quintile	0.724*	2.262*	0.369*	1.092	1.176*	1.264	0.773
First/highest quintile	0.646*	2.327*	0.226*	1.299*	1.17	1.881*	0.735*
State (Ref: eastern)							
Western	4.576*	1.079	2.282*	0.397*	0.333*	0.508*	1.179
Central	1.845*	1.530*	1.07	0.551*	0.520*	0.979	0.679*
North-east	1.610*	1.510*	0.755*	0.577*	0.586*	0.638*	0.999
North	4.786*	8.740*	0.239*	0.120*	0.117*	0.309*	0.300*
South	3.904*	0.429*	2.962*	0.878*	0.785*	1.002	1.213

\* Denotes Significance at 0.001%.

Total number of observations (women): 113,877. Total number of women workers in sample: 55,234.

Ref: stands for reference group.

Source: Computed from NSSO (2006), unit-level data.

Table 2: Results (Odds Ratios) of Logistic Regression for Rural Women Workers, 15-49 Years, 2005-06 (NFHS)

	0 = Unemployed/ Not in Labour Force; 1 = Employed	1 = Other Workers; 2 = Self-Employed in Agriculture	1 = Other Workers; 2 = Employed in Agriculture Wage Workers	1 = Other Workers; 2 = Employed in Non-Agriculture	1 = Other Workers; 2 = Self-Employed in Non-Agriculture	1 = Other Workers; 2 = Employed as Paid Non-Agriculture Wage Workers
	1	2	3	4	5	6
Constant	5.179*	0.456	0.866	0.286	0.061	0.201
Age (Ref: 15-29)						
30 – 44	1.646*	1.039	0.906	1.031	1.057	0.984
45 – 59	1.422*	1.294*	0.703*	0.981	1.092	0.893
Marital status (Ref: Never married)						
Currently married	0.750*	1.355*	1.045	0.671*	0.712*	0.798*
Widowed	1.318*	0.681*	1.111	1.357*	1.049	1.545*
Divorced/separated	1.798*	0.557*	1.383	1.295	1.013	1.483*
Education (Ref: Illiterate)						
Below primary	0.789*	0.922	0.934	1.227*	1.163	1.259*
Primary and middle	0.562*	0.938	0.673*	1.489*	1.451*	1.381*

(Contd)

**Table 2:** (Continued)

	0 = Unemployed/ Not in Labour Force; 1 = Employed 1	1 = Other Workers; 2 = Self-Employed in Agriculture 2	1 = Other Workers; 2 = Employed in Agriculture Wage Workers 3	1 = Other Workers; 2 = Employed in Non-Agriculture 4	1 = Other Workers; 2 = Self-Employed in Non-Agriculture 5	1 = Other Workers; 2 = Employed as Paid Non-Agriculture Wage Workers 6
Secondary and higher secondary	0.508*	0.485*	0.312*	3.463*	2.543*	2.301*
Graduate and above (diploma)	1.287*	0.100*	0.098*	15.870*	2.502*	4.832*
Social group (Ref: ST)						
SC	0.448*	0.339*	2.201*	1.822*	1.684*	1.540*
BC	0.541*	0.893	1.193*	1.044	1.363*	0.841*
Others	0.397*	0.647*	1.087	1.597*	1.662*	1.279*
Religion (Ref: Hindu)						
Muslims	0.468*	0.537*	0.780*	2.413*	1.580*	2.318*
Other religions	0.960	1.465*	0.842	0.736*	0.850	0.871
Women with children aged <= 5 (Ref: No)						
Yes	0.880*	1.317*	0.843*	0.812*	0.912	0.806*
Mobility of women (Ref: None of the three types)						
At least one of three types	1.505*	0.648*	1.248*	1.442*	1.323*	1.350*
Wealth index (Ref: Poorest)						
Poorer	0.741*	1.447*	0.725*	0.850*	0.968	0.820*
Middle	0.556*	1.644*	0.498*	1.022	1.324*	0.833*
Richer	0.364*	1.409*	0.270*	1.644*	2.076*	1.058
Richest	0.214*	0.719*	0.073*	3.763*	3.521*	1.470*
State (Ref: East)						
North	1.200*	1.747*	1.229*	0.410*	0.414*	0.675*
West	3.024*	1.364*	1.338*	0.493*	0.490*	0.670*
Central	1.454*	1.132	1.136*	0.750*	0.472*	1.193
North-east	1.194	0.621*	0.881*	1.545*	1.591*	0.951
South	2.000*	0.368*	3.484*	0.995	0.589*	1.534*

\* Denotes significance at 0.001%.

Total number of observations (rural women, aged 15-49); 63,896. Total number of women workers: 31,044

Ref: stands for reference group.

Source: Computed from International Institute for Population Sciences (2007), unit-level records.

**Appendix Table 3: Rural Female Workforce Participation Rate (UPSS), 15-59 Years, 2004-05**

State	In Agriculture				In Non-agriculture				Total
	Total WPR	Self-employed	Regular/Salaried	Casual Labour	Total	Self-employed	Regular/Salaried	Casual Labour	
Andhra Pradesh	70.5	23.0	0.0	32.3	55.3	10.3	2.8	2.0	15.2
Assam	33.1	21.7	2.0	5.6	29.3	1.4	0.9	1.5	3.8
Bihar	23.8	9.5	0.1	10.9	20.5	2.8	0.3	0.2	3.3
Chhattisgarh	75.2	38.5	0.1	31.7	70.2	2.2	1.0	1.8	5.1
Gujarat	67.0	36.7	0.0	22.8	59.5	3.1	1.8	2.6	7.4
Haryana	52.2	41.7	0.1	5.6	47.4	2.4	1.2	1.2	4.8
Himachal Pradesh	73.5	65.9	0.0	0.6	66.4	2.0	4.2	0.9	7.1
Jammu and Kashmir	40.8	35.3	0.0	0.1	35.3	3.2	1.4	1.0	5.5
Jharkhand	51.2	36.7	0.1	7.0	43.7	3.4	0.9	3.1	7.4
Karnataka	65.9	25.7	0.1	30.6	56.3	6.1	2.0	1.4	9.5
Kerala	36.0	11.8	0.5	5.5	17.8	6.3	7.0	4.8	18.1
Madhya Pradesh	60.9	32.1	0.2	21.4	53.6	3.1	1.9	2.3	7.3
Maharashtra	70.7	32.8	0.1	30.9	63.9	3.5	1.8	1.5	6.8
Orissa	48.3	21.0	0.0	15.3	36.3	8.5	1.1	2.5	12.1
Punjab	48.5	40.8	0.1	2.6	43.5	2.3	2.3	0.5	5.0
Rajasthan	67.7	55.8	0.1	4.6	60.4	2.9	0.9	3.5	7.3
Tamil Nadu	66.6	20.5	0.1	28.2	48.8	9.8	4.5	3.6	17.8
Uttarakhand	67.3	60.8	0.0	3.5	64.3	0.9	1.3	0.7	3.0
Uttar Pradesh	40.5	30.2	0.1	4.9	35.2	4.0	0.7	0.7	5.3
West Bengal	27.7	8.7	0.9	7.0	16.5	8.2	1.5	1.5	11.1
Total	51.1	27.3	0.2	15.0	42.6	5.0	1.7	1.8	8.5

Source: Computed from NSSO (2006), unit-level data.

**Table 4: Indicators of Socio-economic Characteristics and Women's Autonomy across States, 2004-05 to 2005-06**

State	MYrSch_all	FCwage_nag	Fwage_nag	Sh_R_ST/SC	Per_any_mob	Sh_Fholdarea	SHG_RuHh	avgmpce	Rd_exp_cap	SGDP_cap
Andhra Pradesh	2.20	41.0	50.6	27.4	51.8	16.6	6.74	587	309.7	29368.7
Assam	3.48	49.7	81.0	28.2	68.9	1.8	2.92	551	285.7	20186.2
Bihar	1.64	33.6	84.1	24.3	41.7	8.9	0.75	432	185.4	8837.6
Chhattisgarh	2.10	40.6	51.7	52.1	47.5	8.0	1.85	435	433.2	20627.3
Gujarat	3.08	55.0	82.2	33.7	63.2	10.4	1.67	621	201.0	39649.2
Haryana	3.65	61.6	84.9	27.3	50.1	9.3	0.39	860	245.4	45976.6
Himachal Pradesh	5.24	60.1	139.8	33.6	80.7	4.8	1.91	777	150.1	38404.1
Jammu and Kashmir	3.18	53.4	89.1	14.4	67.3	5.8	-	723	118.6	21813.2
Jharkhand	1.49	42.9	61.3	42.6	49.7	8.9	1	444	265.8	21620.5
Karnataka	3.05	35.6	57.2	30.3	48.7	13.2	2.73	517	185.2	30493.7
Kerala	7.44	58.6	100.8	13.6	62.0	16.2	2.05	926	79.6	35601.6
Madhya Pradesh	1.69	41.5	37.2	43.0	43.5	5.1	3.2	446	310.7	17648.6
Maharashtra	4.14	35.5	78.9	26.9	62.2	13.6	1.46	569	143.4	41514.3
Orissa	2.86	35.2	57.4	44.7	29.2	2.8	3.47	393	239.0	20250.4
Punjab	4.72	48.7	117.8	41.7	54.0	0.6	0.2	834	94.7	41420.2
Rajasthan	1.38	51.7	60.4	37.8	45.7	3.4	1.07	583	237.1	20095.1
Tamil Nadu	3.56	46.0	63.0	27.1	84.6	15.1	4.72	563	116.9	34424.5
Uttarakhand	3.96	82.2	128.2	27.1	55.8	6.4	2.58	611	410.2	28140.2
Uttar Pradesh	2.29	44.6	74.8	26.1	39.1	4.7	1.96	506	159.4	15382.7
West Bengal	2.85	37.2	49.3	35.3	48.4	2.1	1.67	537	217.6	27822.2

Refer Table 14 for Variable Details and Sources.

**Table 5: Correlation Matrix**

Variables	WPR_tot	WPR_nag	WPR_naglab	WPR_RS	WPR_SE	MYrSch_all	FCwage_nag	Fwage_nag	Sh_R_ST/SC	Per_any_mob	Sh_Fholdarea	SHG_RuHh	avgmpce	Rdexp_cap	GDP_cap
WPR_tot	1	0.07	0.16	-0.01	-0.03	-0.05	0.18	-0.01	0.35	0.24	0.33	0.29	-0.04	0.32	0.38
WPR_nag	0.07	1	.83(**)	.70(**)	.87(**)	0.31	-0.20	-0.30	-0.19	0.20	.57(**)	.60(**)	0.12	-0.32	0.23
WPR_naglab	0.16	.83(**)	1	.88(**)	.45(*)	.58(**)	0.15	0.03	-0.23	0.43	.54(*)	0.31	0.41	-0.35	0.37
WPR_RS	-0.01	.70(**)	.88(**)	1	0.35	.79(**)	0.22	0.27	-0.39	.60(**)	0.42	0.29	.56(**)	-0.43	0.44
WPR_SE	-0.03	.87(**)	.45(*)	0.35	1	-0.01	-0.44	-.50(*)	-0.10	-0.05	0.44	.68(**)	-0.16	-0.22	0.05
MYrSch_all	-0.05	0.31	.58(**)	.79(**)	-0.01	1	.46(*)	.67(**)	-.46(*)	.53(*)	0.21	-0.09	.78(**)	-.49(*)	.65(**)
FCwage_nag	0.18	-0.20	0.15	0.22	-0.44	.46(*)	1	.70(**)	-0.31	0.39	-0.07	-0.13	.61(**)	0.13	0.36
Fwage_nag	-0.01	-0.30	0.03	0.27	-.50(*)	.67(**)	.70(**)	1	-0.36	.46(*)	-0.15	-0.35	.66(**)	-0.29	0.42
Sh_R_ST/SC	0.35	-0.19	-0.23	-0.39	-0.10	-.46(*)	-0.31	-0.36	1	-0.40	-0.43	-0.13	-.49(*)	.50(*)	-0.15
Per_any_mob	0.24	0.20	0.43	.60(**)	-0.05	.53(*)	0.39	.46(*)	-0.40	1	0.28	0.16	.48(*)	-0.35	.50(*)
Sh_Fholdarea	0.33	.57(**)	.54(*)	0.42	0.44	0.21	-0.07	-0.15	-0.43	0.28	1	0.41	0.12	-0.14	0.33
SHG_RuHh	0.29	.60(**)	0.31	0.29	.68(**)	-0.09	-0.13	-0.35	-0.13	0.16	0.41	1	-0.25	0.22	-0.11
avgmpce	-0.04	0.12	0.41	.56(**)	-0.16	.78(**)	.61(**)	.66(**)	-.49(*)	.48(*)	0.12	-0.25	1	-.48(*)	.71(**)
Rdexp_cap	0.32	-0.32	-0.35	-0.43	-0.22	-.49(*)	0.13	-0.29	.50(*)	-0.35	-0.14	0.22	-.48(*)	1	-0.34
GDP_cap	0.38	0.23	0.37	0.44	0.05	.65(**)	0.36	0.42	-0.15	.50(*)	0.33	-0.11	.71(**)	-0.34	1

\*\* Correlation is significant at the 0.01 level (2-tailed). \* Correlation is significant at the 0.05 level (2-tailed). Refer Table 14 for Variable Details and Sources.

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