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**Female Employment in India:
Trends and Underlying Processes
in the Era of Reforms**

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Abbreviations

BPO	Business Process Outsourcing
CSO	Central Statistical Organization
FPR	Female Participation Rate
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
IT	Information Technology
ITES	IT Enabled Services
LFPR	Labour Force Participation Rate
MPCE	Monthly Per Capita Expenditure Class
NASSCOM	National Association of Software and Services Companies
NSSO	National Sample Survey Organization
NIA	Net Irrigated Area
SEWA	Self Employed Women's Association
UN	United Nations
UPSS	Usual Status (Principal and Subsidiary status)
WPR	Worker Participation Rate

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Niti Mehta*

Abstract

The paper deals with different aspects of female employment and compares the pre – and post- reforms situation. It looks at the structure of sectoral output and productivity differentials between the broad sectors to contextualize women's employment in India. Whether the macro level output growth pattern and development aspects such as poverty, illiteracy, asset ownership have a bearing on female employment in rural areas is tested at the state level. The paper also explores whether the services sector and its growth has had a favourable impact on female employment in urban India. Analysis reveals that employment structure in India has led to polarization of skills such that women predominate in low paid, low skill work. While there is persistence of anomalous relationship of female workforce participation rates as also female employment in primary sector in terms of underlying factors, agriculture is a last resort option for a majority of the women workers in rural India. Women form substantial proportion of service sector, but their concentration in personal services in urban areas points towards distress driven employment growth. Higher concentration of female workforce in low productivity industries negates the premise that economic reforms would create more employment opportunities in modern sectors. In this context, the most important policy intervention has to be in the realm of strengthening the human capital base of women workers. Spread of education and skill development can empower women workers in the country to reap the benefits of growth. Direct employment generation and fiscal incentives for expansion of activities that use female labour are also desired.

JEL Classification : J2, J21, J82.
Key Words : Female labour force participation,
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1. Introduction

The issue of female employment continues to be much debated showing contradicting experiences and trends across different regions, sectors and also across various time periods within a given economic sector. India is predominantly an agricultural economy, yet it has a highly developed urban sector. While the data on female participation rates in urban areas is more reliable, the issue of women's work and employment in rural areas cannot be ignored.

It has been asserted that export-led growth, facilitated by trade liberalization, increases the demand for female labour faster than for male labour. As a consequence female wages rise and ultimately converge with male wages, thereby eliminating labour market rigidities and gender biased discriminations. Globalization is thus supposed to improve the condition of women workers. It is also been contended (United Nations, 1999) that in the developing world export-oriented industries are more feminized. With deceleration in export-led industrialization, the recent evidence, at least in East Asian countries, shows that female employment in manufacturing appears to have declined (Sundaram, 2009).

The paper primarily deals with the different aspects of female employment and compares the pre-reform situation with that after the economic reforms. The introductory section is followed by a discussion on the structure of sectoral output and employment at the all India level and their growth rates. This section also looks at issues related to productivity differentials between the broad sectors. It is expected that such an analysis would enable us to situate and contextualize women's employment in India. Section three deals with the female employment specifically. It discusses the structure of female employment and industry wise distribution of female workers. Whether the macro level output growth pattern and development aspects, such as, poverty, illiteracy, asset ownership have a bearing on female employment in rural areas are tested at the state level. Aspects of urban female employment are discussed. Whether the services sector and its growth has had a favourable impact on female employment in urban India is examined. The last section spells out some concerns emerging from the juxtaposition of output structure with female employment.

The data for the analysis has been sourced from the large scale Employment – Unemployment surveys (National Sample Survey Organisation) and the National Accounts Statistics (Central Statistical Organization). Published books, articles and reports form other important sources of information.

2. Output Structure and Growth

2.1 Output Growth and Sectoral Labour Productivities

The sectoral incomes are sourced from National Accounts Statistics, Central Statistical Organization (with base of 1993-94). The analysis of sectoral composition of gross domestic product (GDP) for the pre and post reforms phases at the all India level brings out the fact that there has occurred the dramatic 'tertiarization' of the structure of output (Table 1):

Table 1: Sectoral Composition of GDP and Growth Rates (per cent)

Period	Primary Sector		Secondary Sector		Tertiary Sector	
	Share in GDP	Growth Rate (per annum)	Share in GDP	Growth Rate (per annum)	Share in GDP	Growth Rate (per annum)
<i>Pre-reform period</i>						
1970-71 to 1979-80	42.68	1.78	22.88	4.50	34.56	4.61
1980-81 to 1989-90	36.06	2.91	25.13	6.46	38.80	6.63
<i>Post-reform period</i>						
1990-91 to 1999-00	28.66	3.18	27.12	6.21	44.22	7.71
2000-01 to 2003-04	25.10	3.00	24.70	5.56	50.25	7.91

Source : Central Statistical Organization, National Accounts Statistics, various years.

In the 1950s the share of agriculture sector in GDP was around 50 per cent and that of industries and services was 16 and 28 per cent respectively. The whole scenario changed substantially especially in the eighties. At the end of 1990, the share of primary sector was 36.1 per cent, while that of industries and service sectors became 25 and

39 per cent respectively. The service sector output increased from 6.6 percent per annum during the eighties to 7.7 per cent per annum in the period of reforms. The pace of growth of tertiary sector in the first half of the current decade quickened further to 7.9 per cent per annum, with the sector accounting for nearly 50 per cent of GDP by 2003-04. Tertiary sector thus has emerged as the major sector of economy both in terms of growth rates and the share in GDP in the post reforms phase spanning early 1990s and the current decade. Both manufacturing and primary sectors now comprise about a quarter of the share of GDP each, with their growth rates decelerating from 6.2 to 5.6 per cent and 3.2 to 3 per cent per annum respectively between nineties and beginning of 2000 decades.

In fact the recent years' experience shows "the growth of services sector has imparted resilience to the economy, particularly in times of adverse agricultural shocks as also during cyclical downturn in industry" (Joshi, 2004:4175). India has many of the key ingredients for exploiting the "knowledge revolution": large pool of skilled workers, english speaking knowledge workers, macro-economic stability, well developed financial sector and a diversified science and technology infrastructure.

Whether the growth in tertiary sector is driven by high demand for labour or is it that labour being pushed into this sector due to lack of productive jobs in other sectors can be ascertained from examination of productivity variations across sectors (Table 2). A semblance of labour productivities (GSDP per worker) for different sectors have been arrived at by dividing sectoral incomes (rural and urban combined) with the workforce in each industry (Usual Status, Principal and Subsidiary activity or UPSS estimates) from 1993-94 to 2004-05.

Table 2: Sectoral Labour Productivities

NIC Classification	Labour Productivity (Rs.)			Labour Productivity Relatives (taking Agriculture as base)		
	1993-94	1999-00	2004-05	1993-94	1999-00	2004-05
Agriculture, Forestry & Fishing	11419	12727	13127	100	100	100
Mining & Quarrying	85017	132162	151138	745	1038	1151
Manufacturing	36899	49080	55251	323	386	421
Construction	38811	37263	34683	340	293	264
Electricity, Gas & Water Supply	159507	252427	275158	1397	1983	2096
Secondary Sector	40533	49839	52611	355	392	401
Trade, Hotels & Restaurants	41095	46943	58644	360	369	447
Transport, Storage etc	57227	68025	103520	501	534	789
Fin, Ins, Business Services	294438	356290	308604	2578	2799	2351
Commun, Social, Per. Services	30540	52135	63342	267	410	483
Tertiary sector	50007	67506	84416	438	530	643
All Sectors	23908	31434	37453	209	247	285

Source : Central Statistical Organization, National Accounts Statistics, various years.

Note : For number of workers, estimates are based on NSSO, UPSS workers data, and population is derived from those estimated by the NSSO for the survey years.

It can be seen that the tertiary sector has substantial productivity advantage over primary and even some secondary segments. Some of these sectors enjoy very high capital intensity, though most workers in activities such as transport, communications, social, personal services do not enjoy this advantage. Furthermore, "There is indeed some evidence to support the general perception that some groups like the consumer services... have had a relatively large influx of labour pushing down the relative productivity to some extent, while others like business services have improved their position due to demand factors," (Mazumdar and Sarkar,

2006:298). Also “..the distribution of incomes in the sector might have deteriorated, particularly in the urban areas, with the incomes of the low earners falling relative to the high earners.” (*Ibid*: 300). There is also evidence to suggest during that 1994 to 2005 the share of tertiary sector in household employment has increased with successive NSSO rounds (Table 3). In the pre-reforms phase more jobs in the tertiary sector were created in the higher expenditure quintiles. During the period coinciding with onset of reforms (1993-94), in the rural and urban areas, relatively more jobs were created in the fourth and fifth quintiles at the cost of the lower and middle quintiles of MPCE, suggesting that the distribution of incomes in the sector might have deteriorated (*Ibid*.).

Notwithstanding that overall relative importance of tertiary sector in higher expenditure quintiles of MPCE classes is increasing, evidently women workers are still languishing in the lower expenditure classes. It is questionable whether high economic growth, as is driven by growth of service sector is sustainable in the long run (Mehta, 2009).

2.2 Trends in Sectoral Distribution of Workforce

Compared to most East Asian countries, changes in the employment shares in India have been quite modest (ADB.org). In the 1980s, tertiary sector employment in all the newly industrialised countries grew quite rapidly, but the magnitude of rise relative to manufacturing was not as high as that in India. In fact in the initial period of growth in the 1970s, all these countries had their share in manufacturing increasing faster than the tertiary sector. By contrast, even in the 70s decade, India followed a path of high growth in tertiary sector vis-à-vis manufacturing. The 1980s and 1990s decades have seen a virtual stagnation in the share of employment in manufacturing, with the tertiary sector absorbing nearly the entire loss of employment share by agriculture. There has been a modest gain in the share of industry in the recent period (0.9 per cent) in India.

Only in the first half of current decade, that some Asian countries like Malaysia, Thailand and Korea, are depicting growth pattern similar to that of India. The contrast is particularly strong with China, which continues to show a very robust industrial growth and declining employment shares in tertiary sector.

Table 3 examines the sectoral distribution of workforce in India during the pre-reform (1983-94) and post reforms periods (1994-2000 and 2000-05). Unlike output, the structural changes in terms of employment have been rather muted. Primary sector still absorbs around 59 per cent of the total workforce (2004-05), followed by tertiary and industry sectors at 23.2 and 17.6 per cent respectively. During the onset of reform period (1994 to 2000) primary and tertiary sectors witnessed deceleration in growth rates of employment. A sharp decline in employment growth of community, social and personal services (from 2.9 to 0.6 per cent per annum) led to the overall deceleration in tertiary sector. The rate of growth of employment was particularly sharp for transport, communications and also trade. Tremendous improvement in growth of the construction sector combined with that of manufacturing sector caused the overall growth rate of secondary sector to improve substantially (3 per cent per annum) immediately after the onset of reforms.

Table 3 : Growth of Employment by Sectors

Industry	Annual Growth Rates		
	1983-94	1994-00	2004-05
Primary	1.60 [50.5]	-0.34 [-23.6]	1.19 [14.2]
1. Agriculture	1.51	-0.34	1.18
2. Mining & Quarrying	4.16	-2.85	2.31
Secondary	2.90 [19.3]	3.14 [50.4]	5.18 [45.5]
3. Manufacturing	2.14	2.05	4.18
4. Electricity, Gas & Water	4.5	-0.88	2.43
5. Construction	5.32	7.09	7.67
Tertiary	3.53 [30.2]	2.42 [73.2]	3.01 [40.3]
6. Trade etc	3.57	5.04	3.09
7. Transport, Storage, Communication	3.24	6.04	4.07
8. Financial services	7.18	6.20	9.27
9. Community, personal services	2.90	0.55	1.38
Total Employment	2.04	0.98	2.25

Source : Computed from NSSO (2001 & 2006a).

Note : Figures in parentheses below growth rates refer to the share in additional employment generated.

In the eighties decade, primary sector was the recipient of 50.5 per cent of additional employment generation, followed by tertiary sector (30.2 per cent) and secondary sector (19.3 per cent). Later it was the tertiary sector which accounted for 73 per cent of the additional employment generation, followed by the secondary sector. The 2000s decade has witnessed reversal on several counts, notably:

- The secondary sector entered a higher growth trajectory effectively led by growth acceleration in the utilities (electricity, gas and water)

segment and doubling of growth in manufacturing (from 2.1 to 4.2 per cent per annum).

- Within tertiary sector, financial services as well as community, social and personal services were the leading employers, recording growth acceleration. Trade, transport and communications reported a slowdown.
- Unlike the earlier period, between 2000 and 2005 the primary sector contributed to 14.2 per cent of the additional employment generated. However, share of secondary sector in additional employment was the largest (45.5 per cent) followed by the tertiary sector (40.3 per cent). Apparently, India is now treading the path of other Asian countries, with the manufacturing sector absorbing the largest share of additional employment generated. Tertiary sector though continues to be the leading sector in terms of output share and its growth.

Female employment can be contextualised in the light of overall trends and the next section dwells on aspects of female employment. Before proceeding further a look at women's education status shows that half of the females in the country (15 years and above) are not literate. This share is even higher in rural areas (58.5 per cent). Of those who are literate, around 20 per cent have received primary education only. Even lesser share, 12.8 percent have received education up to middle and secondary levels. Only a tiny share of females 4.8 per cent, have diploma, certificate, graduate and post graduation degrees, severely limiting their labour market opportunities. Differences in working decisions and labour market gains become significant only for those who pursue education above graduation. For genuine labour market returns to accrue, significantly within the urban context, greater stress on females' access to higher education is desired.

The picture of technical education is also not very encouraging. Overall 2.2 per cent of population above 15 years in the country is technically educated. Females with technical education comprise a miniscule 1.3 per cent. In the urban areas while 7.3 per cent of the males are technically

educated, for females this share is less than half (3.1 per cent). The redeeming feature is that when we observe the break up by nature of technical education, the picture is more or less uniform for males and females. Clearly for those females who aspire for technical degrees, there is no discrimination in access to such opportunities. Nonetheless interventions in human capital development of females are desired on an urgent basis as their poor education status is an impediment.

3. Extent and Structure of Female Employment

The under estimation of female participation in productive work is due to definitional issues and also their absence in conventionally recognised categories of work. The under-enumeration of female workers in the large scale surveys and census is well known and has also been revealed by several micro studies. The under-estimation of women's work to a large extent could be on account of the nature of their participation, as they are concentrated in home based activity, such as, own farms and/or help in a part of the production process that leads to final output. Women's work is also embedded in domestic activity which is often not perceived as 'work' and goes unrecorded. This is because women perform household work and productive work simultaneously and hence the two portions are indivisible. It has also been argued that in South Asia, particularly in India, that has a large proportion of the female workforce in the rural areas, women participation fluctuates during the drought and normal agricultural years. The seasonality factor affects female participation rates more than male participation rates, as during slack season women are first to withdraw from the labour market. Moreover of the female workers, the unpaid family workers withdraw totally, while wage workers join the ranks of self employed or unemployed. Thus large sections of women are rendered invisible and are not accounted in the calculations of labour force participation.

On the supply side, weak female workforce participation relative to men could be attributed to absence of preferred job opportunities due to gender biases. Rural labour markets are highly segmented and despite lower wages for women workers, employers have greater preference for male workers,

stemming from social prejudices and social sanctions imposed on women, preventing their participation in productive work. Migration and women's work choices may also be linked, as many sources of employment such as domestic work are based mainly on migrant stream of workers.

In this section we confine our discussion to some of the issues related to participation rates in rural and urban areas. We also make an attempt to analyze the inter-state differences in female participation rates and to identify the possible causal factors underlying these differences. Earlier analysis has highlighted that for the period of 1960s, the female rural participation rates did not change much, increasing from 26 per cent (1960-61) to 27.3 in 1966-67. Based on usual status of NSS participation rates were 28.8 per cent in 1977-78 and 28.4 per cent in 1983 (Nayyar, 1987).

Table 4: Labour force Participation Rates, (UPSS) 1987-88 to 2004-05
(percent)

	Rural		Urban	
	Male	Female	Male	Female
<i>Pre-Reform period</i>				
1987-88	54.9	33.1	53.4	16.2
1993-94	56.1	33.0	54.3	16.5
<i>Post-Reform period</i>				
1999-00	54.0	30.2	54.2	14.7
2004-05	55.5	33.3	57.0	17.8

Source : NSSO, Various Rounds

Table 4 shows all India picture on the level and changes in the labour participation rates¹ of females and males spanning 1987-88 to 2004-05 period based on UPSS status of NSSO². The female participation rates in rural and urban areas continue to be substantially lower than their male counterpart. It can be seen that in rural areas participation rates of males rose by close to one percentage point while for females it remained nearly constant in the pre-reform period (1987-88 to 1993-94). Immediately following the reforms, i.e., between 1993-94 and 1999-2000, there was a

decline in the participation rates for males and females ranging between 2-3 percentage points across rural and urban areas. The decline was sharper for females than for males. Initial period of reforms resulted in a decline in employment levels. By 2004-05, however female participation rates rose to 33.3 and 17.8 per cent in urban and rural areas respectively- a rise by 3 percentage points. The rise was much sharper for the females than for males. For urban female workers particularly, participation rates in 2005 have increased not only in comparison with 1999-00, when they had fallen sharply, but also in comparison to a decade earlier. Of course, these participation rates are still low by international standards and also reflect substantial variations across states.

Table 5: Female Participation Rates, All India and States, 1993-94 to 2004-05 (UPSS)

State	Rural			Urban		
	1993-94	1999-00	2004-05	1993-94	1999-00	2004-05
Andhra Pradesh	52.1	47.8	48.3	19.9	17.8	22.4
Arunachal Pradesh	40.9	31.0	41.0	10.1	10.0	14.8
Assam	15.9	15.1	20.9	9.2	11.2	10.9
Bihar	17.2	17.3	13.8	6.9	7.5	6.5
Gujarat	39.6	41.3	42.7	14.2	13.5	15.1
Haryana	27.1	20.2	31.7	15.2	9.8	13.2
Himachal Pradesh	52.0	47.1	50.6	20.1	13.0	24.1
Jammu & Kashmir	39.1	32.7	26.7	13.0	6.2	11.2
Karnataka	43.0	38.0	45.9	18.1	17.8	18.1
Kerala	23.8	23.8	25.6	20.3	20.3	20.0
Madhya Pradesh	41.0	38.2	36.6	14.2	13.4	15.4
Maharashtra	47.7	43.4	47.4	16.9	13.7	19.0
Orissa	31.7	29.9	32.2	15.1	14.5	14.8
Punjab	22.0	28.0	32.2	9.3	12.5	13.3
Rajasthan	45.7	38.8	40.7	16.3	13.8	18.2
Tamil Nadu	47.8	43.0	46.1	23.0	21.5	24.1
Uttar Pradesh	21.9	20.1	24.0	10.2	9.4	11.7
West Bengal	18.5	16.0	17.8	14.3	11.7	15.5
India	32.8	29.9	32.7	15.5	13.9	16.6

Source :NSSO, Employment-Unemployment Surveys, Various years.

An examination of Table 5 reveals that considerable differences in the female participation rates persist between the states. The female participation rates increase in the country as we move from north to south and from east to west.

Women's labour force participation recently has been increasing in many developing countries. This could have occurred due to increasing education levels of women, new opportunities of employment in the industrial sector or increasing migration to urban areas. Falling household real incomes and income insecurity boosting the "additional worker" effects, may have also forced the women to enter the labour market. Other contextual development that may have influenced or shaped the gender division of labour could be growth in the international trade in goods and services. Participation of women in economic activity has also been positively related to opening up of economies and the expansion of women oriented sectors or through cost-differential dimension. Standing (1989) argued that the informalization of labour markets, necessitated by global production systems favour women due to cost-effectiveness, resulting in feminization of jobs. Trade and investments have been directed increasingly to economies in which labour costs are relatively low and towards sections of workers prepared to take low-wage jobs (Standing, 1999). The technological revolution of the past decade has permitted a wider range of options in working arrangements, affecting patterns of employments. Informalization of work has stimulated growth of female employment across the countries (as casual, contract worker, outsourcing, home-working). The drop in female unemployment rates relative to men has also been noted by scholars (a recent phenomenon).

A comparison of workforce participation rates across principal and usual status has shown that increased participation of women both in rural and urban areas is largely accounted by the increase in women workers in the subsidiary capacity (Neetha, 2009). The increased number of women in subsidiary capacity in the rural areas implies that women have not much opportunities for regular employment other than the already crisis ridden agriculture. Of late there is also a general tendency for women to enter

into paid work at younger ages. The 2004-05 participation rates amongst younger women (especially urban) show increase by about 2 percentage points compared to 1993-94 and 5 percentage points compared to 1999-00. The peak work participation rate for urban women has shifted from the age group 40-44 years in 1994 to 35-39 years in 2004-05 (Chandrasekhar and Ghosh, 2007).

3.1 Structure and Sectoral Aspects of Female Employment

So what kind of employment do the female workers find? The structure of overall employment based on the distribution of usually employed by the category of employment in rural and urban areas can be seen in Table 6 for two decades (1987-88 to 2004-05) and sectoral classification of female workers is depicted in Table 7.

**Table 6: Distribution of Usually Employed in India,
1987-88 to 2004-05 (percent)**

Year	Usual Status (ps+ss) Males			Usual Status (ps+ss) Females		
	Self Employed	Regular Employed	Casual Labour	Self Employed	Regular Employed	Casual Labour
Urban						
2004-05	44.8	40.6	14.6	47.7	35.6	16.7
1999-00	41.5	41.7	16.8	45.3	33.3	21.4
1993-94	41.7	42.0	16.3	45.8	28.4	25.8
1987-88	41.7	43.7	14.6	47.1	27.5	25.4
Rural						
2004-05	58.1	9.0	32.9	63.7	3.7	32.6
1999-00	55.0	8.8	36.2	57.3	3.1	39.6
1993-94	57.7	8.5	33.8	58.6	2.7	38.7
1987-88	58.6	10.0	31.4	60.8	3.7	35.5

Source: NSSO (2006a), p. 85.

In the rural areas self employment predominated over wage employment, due to dominance of self-cultivation. Regular employment in rural areas, particularly for women, is quite insignificant. Up to 1999-2000, there was continuous decline in shares of both males and females self employed in rural areas, accompanied by an increasing proportion of casual labour. Between 1999-00 to 2004-05, a trend reversal occurred and the share of self employed rural women rose dramatically, along with decline in the share of casual labour.

In rural areas self employment accounted for 64 per cent of female workers in 2004-05. It is worth noting that in the early phase of reforms when overall proportion of self employment declined, women's labour force participation fell quite sharply. In the later period, a sharp increase in the share of self employment amongst women was accompanied by recovery of their participation rates. The increase of self and regular employment is "... certainly a phenomenon to be welcomed, especially if it does indeed indicate a shift to more productive and better remunerative activities that are to be found with casual contracts." (Neetha, 2009:2). Undoubtedly self employment³ signifies micro-entrepreneurship and is considered important for poverty reduction and employment generation, but self employed workers can not always be seen as positive risk taking entrepreneurs. The liberalized regime created conditions for pauperization of self employed. Self employment has increased in recent years, but it largely comprises of a high share of unpaid work by women.

We discuss the nature of jobs available to women. Considerable importance has been placed on prospects of service sector jobs in terms of growth in GDP and employment. Table 7 gives the sectoral classification of employment for females separated by rural and urban areas (UPSS). Over the 11 years period, (1993-94 to 2004-05) and with liberalization, employment of rural females in services and secondary sectors at best showed marginal increase. Rural females continue to crowd the agriculture sector for livelihoods. Though in terms of share in sectoral employment there is seen a decline from 86 to 83.3 per cent, but the sector shows an increase in the share of female workers in total primary employment by nearly two percentage points. In urban areas in initial period of reforms female share in primary sector declined sharply, but has remained stagnant later on.

Table 7: Distribution of Females employed by Broad Industry Categories (UPSS), 1993-94 to 2004-05

Industry Category	Rural			Urban			Total		
	1993-94	1999-00	2004-05	1993-94	1999-00	2004-05	1993-94	1999-00	2004-05
Agriculture, Forestry & Fishing	86.2 (39.4)	85.4 (38.7)	83.3 (41.5)	24.7 (42.2)	17.7 (40.0)	18.1 (44.8)	77.4 (39.5)	74.9 (38.7)	72.4 (41.6)
Mining & Quarrying	0.4 (24.2)	0.3 (20.9)	0.3 (22.1)	0.6 (10.9)	0.4 (9.9)	0.2 (5.7)	0.4 (19.5)	0.3 (17.1)	0.3 (16.5)
Manufacturing & Repair services	7.0 (35.8)	7.6 (35.5)	8.4 (37.6)	24.1 (22.7)	24.0 (20.8)	28.2 (24.6)	9.9 (29.1)	10.1 (28.2)	11.7 (31.1)
Electricity, Gas & Water	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.3 (6.3)	0.2 (5.8)	0.2 (6.4)	0.0 (3.7)	0.0 (3.6)	0.0 (4.1)
Construction	0.9 (13.6)	1.1 (11.4)	1.5 (11.1)	4.1 (13.7)	4.8 (11.9)	3.8 (10.1)	1.4 (13.6)	1.7 (11.7)	1.9 (10.8)
Trade, hotels and Restaurants	2.1 (17.6)	2.0 (13.5)	2.5 (14.6)	10.0 (9.6)	16.9 (12.4)	12.2 (10.6)	3.2 (12.8)	4.3 (12.8)	4.1 (12.3)
Transport, storage and communication	0.1 (2.5)	0.1 (1.6)	0.2 (2.9)	1.3 (3.5)	1.8 (4.1)	1.4 (3.4)	0.3 (3.1)	0.4 (3.0)	0.4 (3.2)
Finance, insurance, real estate, business services	0.1 (12.2)	0.1 (0.0)	0.1 (7.5)	1.9 (12.0)	2.5 (12.0)	3.2 (12.9)	0.4 (12.1)	0.4 (9.6)	0.6 (11.7)
Community, social and personal services	3.3 (21.8)	3.6 (25.0)	3.8 (29.3)	33.1 (30.7)	31.7 (32.1)	32.7 (37.4)	7.0 (26.4)	7.9 (28.9)	8.6 (33.9)

Source : NSSO (1997, 2001, 2006a) Employment & Unemployment Surveys, Various Rounds
 Note: Figures in brackets are female share in total employment.

Rural areas witnessed near stagnation in share of females in secondary sectors, increasing marginally from 8 to 9.8 percent. Tertiary sector female employment too rose negligibly from 6 to 7 percent. In urban India close to half the female workforce is engaged in the tertiary activities, against

nearly a third in manufacturing. Tertiary sector in rural areas offered to men nearly three times more jobs than women during 2004-05. In urban areas also the sectoral share of females employed in the tertiary sector was less than that of males. Relatively lower engagement of females in tertiary activities is indicative of discrimination in terms of access to highly productive tertiary sector jobs. The clear increase, if not dramatic, is for "other services" which is a catch all for a wide range of both public and private services, as well as both high value added, high revenue jobs to low productivity activities. It is clear that given their poor skill and human capital base, females are denied access to more specialized segments of the tertiary sector that have the largest labour productivity advantages. Labour market participation of women is hence often an outcome of poverty and precarious livelihoods, which finds reflection in their sectoral concentration.

Persistent feature of women's employment has been substantially high concentration of women in agriculture. Economic growth did not translate into expanding employment opportunities for women. The biased nature of employment shift is evident from the fact that between 1999-2000 and 2004-05, of the 2.7 million additions to women workers, 1.7 million were in agriculture. The increased shares of women in agriculture seem to be the result of the known trend of shifting burden of subsistence agriculture onto the women. Female share in total industrial employment witnessed an increase from 29.1 to 31.1 per cent. While sectoral share of construction registered stagnation, female share in construction employment showed decline, probably a result of increased mechanization. An increase by nearly 5 percentage points in the female share in community, social and personal services indicates growing feminization of this sub sector. The urban areas showed precipitous increase from 30.1 to 37.4 per cent in the female share in this sub sector in the reforms period. This sector is marked by wide variations in wages and conditions of employment.

In order to identify the possible underlying factors accounting for the variations in female participation rates across states and their concentration in primary sector, we undertook a linear regression analysis, using alternately rural female worker participation rates and rural female agriculture employment as the dependent variables in the two models formulated. The explanatory variables used were incidence of rural poverty, extent of female illiteracy, proportion of agricultural labour households, size of rural non farm sector, percent share of state domestic

product from agriculture (constant price, lagged) and growth rate of the state domestic product (preceding five years). Percentage of net irrigated area was also used as an independent variable. The model was established for 3 points of time- 1993-94, 1999-2000 and 2004-05 to observe the trends in the correlates with the progress of reforms. Some other independent variables were also tested for the two dependent variables separately, notably per capita incomes, male worker participation rate, unemployment levels (current daily status), average size of landholding, sectoral labour productivities, male casual wage rates. However, none of these variables emerged statistically significant in explaining the inter-state differences in either female participation rates or female concentration in the primary sector. It is noteworthy that such results are in congruence with earlier attempts by several researchers in the past (see for a detailed review of concerned studies Nayyar, 1987). The correlation matrix of the concerned variables is taken in Appendix 1 and results of the two models are summarized in Table 8.

Broadly speaking, the statistical exercise based on state level data did not yield satisfactory results. This may be on account of the fact that in the Indian context, both economic considerations along with socio-cultural norms are likely to determine female employment. This is corroborated by the constant value in both the models, that has remained statistically significant over time. Also notable is the fact that, in the Indian context, explanatory variables are transient in nature.

Given the low income levels particularly of landless labourers, small and marginal farmers in rural areas, women belonging to these classes are forced to seek employment. Poverty is thus the single most important factor influencing female participation rates (FPR). The inverse relation between the head count ratio of poverty and FPRs has strengthened over time, showing that FPR declines in prosperous states which are probably characterized by high male earnings. Our estimates also show that states such as Punjab, Kerala have lowest FPRs, attributable to increased prosperity in these regions. On the other hand, the presence of low FPRs in some eastern states such as West Bengal, Orissa, Assam and Bihar may be on account of social and cultural reasons that prohibit female employment in the countryside. The negative and significant relation between poverty and work participation rates clearly shows that destitution is now far more widespread than earlier. Such a situation coexists with the one where females are increasingly taking up skilled jobs in the countryside, more so in the developed states. Out migration of rural males is possibly also putting the burden of productive work on the shoulders of females.

The nature of rural jobs would also dictate the employment of women. The inclusion of extent of rural non farm sector employment variable was to test this hypothesis. The coefficient shows a statistically significant negative relation with FPRs. Women find very little employment outside agriculture. Presence of modern sector jobs may in fact discourage women from taking up active employment on account of their low human capital and skill level. Male preference of employers as pointed earlier in the discussion may also contribute to their exclusion.

Table 8: Linear Regression Estimates for Determinants of Female WPR and Female Agricultural Employment

Variables	Rural Female WPR			Female Agri. Employment		
	1993-94	1999-00	2004-05	1993-94	1999-00	2004-05
	(Beta coefficients)			(Beta coefficients)		
Constant	(5.52) *	(6.58) *	(4.29) *	(3.38) **	(5.27) **	(3.89) *
Rural Poverty (HCR)	-0.487 *	-0.419 **	-0.532 *			
	(-3.25)	(-2.33)	(-3.02)			
Rural Female Illiteracy (%)				0.708**	0.837**	0.785*
				(3.54)	(5.16)	(3.17)
Rural Non Farm Sector (%)	-0.582 *	-0.588 *	-0.559 *			
	(-3.67)	(-4.19)	(-3.18)			
Agri. Labour HHs (%)	-0.267	0.039	0.128	-0.321	-0.256	-0.268
	(-1.69)	(0.22)	(0.72)	(-1.44)	(-1.58)	(-1.13)
Lagged Agri Output (%)	-0.648 *	-0.553 *	-0.512**	-0.098	-0.409**	-0.201
	(-3.92)	(-3.57)	(-2.55)	(-0.39)	(-2.29)	(-0.84)
GSDP Growth (% per year)	0.369**	0.018	0.082			
	(2.53)	(0.11)	(0.41)			
Net Irrigated Area (%)				-0.318	-0.377**	-0.441
				(-1.59)	(-2.36)	(-1.98)
No. of observations	18	18	18	18	18	18
R-squared	0.77	0.76	0.68	0.54	0.70	0.48
Adjusted R-squared	0.68	0.67	0.56	0.40	0.62	0.33
F- statistics	8.79	8.41	5.53	4.10	8.21	3.20

* Significant at 1 %

** Significant at 5 %

Figures in brackets show t-statistics

The other factor which is expected to show inverse relation to FPRs is landlessness. Our analysis, based as it is on macro data, did not show a significant association between FPRs and magnitude of landless households. However micro level studies have been able to establish a correlation between the two. In rural areas landlessness is synonymous with poverty that induces greater female participation in productive work.

In the analysis the other variable which had significant relation with female participation rate was the structure of the economy, as seen by the sectoral share of state GDP. The dominance of agriculture sector in the output of prosperous states lead to withdrawal of female workers. In contrast under conditions where tertiary and secondary activities are dominant in the economic structure, particularly in developed states, women find more employment outside primary sector and in more skilled and remunerative jobs. The relation though significant has declined in strength over time. It is also expected that faster growth of the local economy would create more job opportunities and hence increase employment of females. In the period before reforms, the relation of gross state domestic product (GDSP) growth had a significant and positive relation with FPRs. But the model showed no significant relation emerging subsequently. Apparently at aggregate level female employment data shows no relation with the pace of growth in the economy.

The overall explanatory power of the model selected (as seen by R-squared) is declining with the progress of reforms. Possibly we need to look beyond the economic parameters to seek an explanation regarding the inter-regional disparities in female work participation in rural India. Apart from the structure of the economy, its growth and asset ownership pattern, social parameters may be playing a role.⁴

The work participation rates available from the NSSO are aggregate in the economy, i.e., the participation rates by sector are unavailable. To capture the underlying factors attempt was made to ascertain correlates of extent of female agricultural employment. We introduced female literacy and net irrigated area also as independent variables in the second model. When FPRs were regressed with female illiteracy level, the results

were insignificant. Literacy and education status had a negligible impact on FPR in rural areas. Possibly they are likely to become important determinants of FPR at higher levels of development in a society. However, the relationship of female agricultural employment and illiteracy as expected emerged statistically significant. For obvious reasons widespread illiteracy made agriculture the last resort employment option for females. This highlights that, to actively participate in the development process, the skill base of rural women needs to be enhanced.

Certain other exogenous factors are also important in determining the dominance of women employment in agriculture. Widespread and intensive use of irrigation leads to increase in crop output. Green revolution increased prosperity in rural areas and generated additional demand for labour, including female labour. However, this demand is likely for hired labour, with a relative decline in female family labour. Moreover at a later stage the income effect of irrigation leads to reduction in total female participation in agriculture. Evidence also shows both a positive and negative association between FPR and irrigation, depending on the particular stage in the process of development that a region has reached (*Ibid.*). Our analysis has revealed a negative association between the percent net irrigated area and share of females employed in agriculture. The strength of the relation is increasing with time (it was also statistically significant in 2004-05). Increase in irrigation facilitates cultivation of more remunerative crops and enhanced family earnings possibly resulted in female withdrawal from agriculture. The eastern states are characterized by lowest FPRs. Yet these are predominantly rice growing states with high incidence of rural poverty- both of which should induce greater female work participation. The argument can be summed up in terms of a backward sloping supply curve for female labour, which is a function of household income (and not female wage rates) (*Ibid.*). When household earnings rise due to agricultural prosperity induced by irrigation, some female labour withdraws from labour market. On the other hand in the eastern states while female family labour among peasantry may be on a decline, low growth in agriculture, stagnating yields and threatened ecology may be the reasons for the negative association.

This line of reasoning also holds true to explain the relationship between structure of output and female agriculture employment. The sign is negative though the relation is weak. The association became statistically significant in 1999-2000, which was also the period of decline in rate of growth of overall employment. Predictably the opportunities for employment declined even in the states where output was in favour of non primary sectors. Overall stagnation in primary sector output and lack of productive jobs in agriculture could be the reason. Negative association between landlessness and female employment in agriculture is revealed. High degree of correlation existed between landlessness and agricultural output. Agricultural output would be a function of level of production, cropping pattern and purchased inputs- all would be unfavourable in the event of widespread assetlessness and agriculture would be of subsistence nature. As with the earlier one, the explanatory power of the second model is not very high and is declining with time, indicating increasing effect of the excluded variables.

The results of the above analysis indicate persistence of anomalous relationship of female workforce participation rates as also female employment in primary sector, in terms of factors that lie outside the realm of economic reasoning. The socio-cultural considerations far outweigh economic ones and cause differences in females work participation across states. Often cultural prejudices lead to under-reporting and hence under-estimation of participation rates. Religious and caste considerations also restrict women's involvement in productive work.

In sum it is evident that poverty, landlessness and structure of the economy dictate the FPRs, but socio-cultural influences are also important. Literacy level has a negligible impact on overall FPR in rural India, though it shows a significant relation with their employment in agriculture. Literacy and education status would presumably gain importance in the urban context where the nature of jobs are different and demand alternate skill sets.

3.2 Low paid Tertiary Work

Having dealt with the rural scenario it would be pertinent to see how far the accelerated income growth in tertiary sector has been beneficial for women's employment: Table 9 gives the shares in the total tertiary workers⁵. In the non agricultural sector, in the period of onset of reforms, the largest employer of female workers was trade sector employing nearly 27.6 per cent of tertiary workers, followed by education sector (19.3 per cent), those employed in private households (16.4 per cent) and other personal services (14.2 per cent). These tabulation categories accounted for 81.3 per cent of the total female tertiary sector employment or nearly 8.2 million tertiary workers. The more sophisticated sectors such as telecommunications, financial services and business activities engaged a miniscule 3.9 percent of the total tertiary sector employment.

By 2004-05 the decline in trade was largely due to reduction in the share of retail trade, possibly due to petty trade being a financially unstable occupation. By nature petty trade requires little specialized skills or heavy capital investments. It therefore continues to be an important source of employment for poor women. Hotels and restaurants also show increase in both absolute numbers and share of women workers. In the 11 year period following reforms, tertiary sector employment for females has not undergone any sweeping upgradation in terms of nature of jobs. By 2004-05, trade, education and personal services continued to account for 81 per cent of female tertiary workers. None of these are the dynamic, fast growing or export oriented sectors (IT enabled services, IT related) or the highly skill intensive service activities (finance, business services, telecommunications, public administration). This is quite startling indeed, especially in the context of the much acclaimed high output growth rates of the tertiary sector, particularly led by high-tech services that have shaped India's (mainly urban) performance in the family of fast emerging nations. Health and social work, although engaging an increasing magnitude of female workers, seem to show decline in the share of women in total employment.

Table 9: Sub-sectoral Share to Female Employment in Tertiary Sector (UPSS), Rural + Urban, 1993-94 to 2004-05

Industry Division	1993-94		1999-00		2004-05	
Wholesale trade & commission trade	0.84	(4.40)	1.02	(4.68)	1.56	(6.05)
Retail trade, repair of per. & hh goods	26.75	(13.93)	27.21	(13.81)	22.66	(13.22)
Hotels & Restaurants	3.81	(14.54)	5.42	(18.57)	6.25	(20.48)
Transportation	0.84	(1.03)	1.25	(1.51)	0.78	(0.98)
Post & Telecommunications	0.42	(7.16)	0.79	(9.04)	1.56	(16.64)
Financial Intermediation	1.83	(11.53)	1.59	(12.77)	2.34	(16.64)
Computer related, R&D & other bus.ser.	0.84	(11.55)	1.25	(10.03)	1.56	(9.51)
Public Administration, Defence	9.43	(10.98)	7.34	(11.16)	5.47	(12.94)
Education	19.30	(36.13)	20.84	(38.94)	24.22	(42.98)
Health & Social Work	5.35	(35.49)	6.38	(37.19)	7.03	(37.43)
Other Community, Social & Personal Service Activities	14.19	(23.95)	19.57	(30.44)	10.16	(24.03)
Pvt. Households with Employed Persons	16.40	(86.05)	7.35	(65.23)	16.41	(69.87)
Tertiary workers (00)	101115	(16.85)	137371	(16.92)	173868	(18.28)
Estimated Workers (00)	1072932		1160098		1358340	

Source : NSSO (1997, 2001, 2006a) Employment & Unemployment Surveys, Various Rounds

Note: Figures in brackets are female share in total employment in each sector

Following retail trade and education sectors, the category of work that is single largest employer for women tertiary workers and showing a sharp increase, has been personal services or those employed in private households. Put it simply women working as domestic helps, cooks, tutors,

or providing other services to households now number nearly 2.9 million (from 1 million in 1999-2000) and account for 16.4 per cent of the tertiary workers. These are also more dominant in the urban areas. Add to this are the 1.8 million workers belonging to category “community, personal and social services” incorporating workers as diverse as in recreation activities, sanitation workers, and “other service activities”. The latter category constitutes those engaged in self employment services such as beauticians, tailors, launderers, tuition services etc done on own premises. In the category of ‘private households with employed persons’, data shows that women are largely employed as housemaids/ servants accounting for nearly 70 per cent of workers in this category. The females’ share is as high as 87 per cent in total employment. This category shows gender based segregation with certain activities showing complete absence of women workers. Domestic sector jobs are apparently the only available option for disadvantaged sections and growth of this is indicative of how women are affected by the development process. Overall, female workforce seems to be highly disadvantaged with signs of segregation into the lower rungs of the economy.

Personal services, notwithstanding considerable heterogeneity (whether employee status or self employed), by nature are largely less remunerative, less skilled and lacking in any social security or other benefits. These possibly offer sustenance to the poor in the urban setting to rural migrants pushed out of agriculture. “It is indeed disturbing to see that the greatest labour market dynamism has been evident in the realm of domestic service. This is well known to be poorly paid and often under harsh conditions- and certainly, it cannot be seen as a positive sign of a vibrant dynamic economy undergoing positive structural transformation.” (Chandrasekhar and Ghosh, 2007:5). The sector is also largely out of the minimum wage purview (Neetha, 2008). This kind of “vertical segregation” is quite high in other Asia and Pacific countries. Such jobs often close all doors to career advancement (UN, 1999).

3.3 Female Employment in IT Sector

The 'women friendly' aspect of IT sector has been of late a topic of much discussion. Overall, total employment in the sector rose between 1994 and 2005 from 0.24 million to more than one million, growing at compound annual growth rate of 28.5 per cent. The question of gender segregation is very relevant in this sector, with women engaged in low paid and less skilled jobs. The newer activities such as IT and financial services despite high growth, continue to absorb only a tiny proportion of the women workers. Women workers in IT related activities, including computer hardware, software and telecommunications which would include IT enabled services (ITES), Business Process Outsourcing (BPO) etc together account for only 2.4 per cent of the female tertiary workers. In "other business services" that incorporate legal, professional and consultancy activities, women workers formed only 6.6 per cent of the total employment. Women's share in overall IT sector has risen from 15.9 to 17.7 per cent between 1999-00 and 2004-05. However pattern within the sector shows elements of growing gender based segmentation (see Table 10).

Women worker's share in hardware consultancy has drastically reduced. Share of women workers on the other hand has seen substantial increase in database activities (3.6 to 23.3 per cent) and software consultancy (11.9 to 18.2 per cent). Database activities are often repetitive and monotonous, requiring little skills or knowledge. In terms of distribution of women workers across different categories, software consultancy accounts for maximum IT women workers, followed by database activities, indicating a shift towards more skilled work on the one hand and also growing concentration of women in less skilled jobs. According to the National Association of Software and Services Companies (NASSCOM), during 2003 only 21 per cent of software professionals in the software companies were females. However this percentage was expected to improve to 35 per cent by 2005. In ITES and BPO sectors where work is more routine and less technical and entry level qualifications are lower, women outnumber men by two to one.

**Table 10: Distribution of IT Industry Workers by Industry ,
1999-00 & 2004-05**

Sub-Sector	1999-00			2004-05		
	Male	Female	Total	Male	Female	Total
Hardware consultancy	5.0 (70.6)	11.0 (29.4)	6.0 (100.0)	2.3 (81.4)	0.7 (18.6)	2.0 (100.0)
Software consultancy	49.0 (88.1)	34.9 (11.9)	46.7 (100.0)	45.9 (81.8)	47.4 (18.2)	46.2 (100.0)
Data processing	21.0 (82.2)	23.6 (17.8)	21.4 (100.0)	5.6 (79.0)	6.9 (21.0)	5.8 (100.0)
Database activities	10.8 (86.4)	9.2 (13.6)	10.7 (100.0)	7.5 (86.7)	20.3 (23.3)	9.8 (100.0)
Maintenance & repairs	8.3 (86.1)	7.1 (13.9)	8.1 (100.0)	4.6 (100.0)	0.0 (0.0)	3.8 (100.0)
Other computer related	5.8 (68.7)	13.9 (31.3)	7.1 (100.0)	23.9 (86.4)	16.0 (13.6)	22.7 (100.0)
Total	100.0 (84.1)	100.0 (15.9)	100.0 (100.0)	(82.3)	(17.7)	(100.0)

Source : For 1999-00 Basant & Rani (2004), for 2004-05 Neetha, N (2009).

Note: Figures in brackets are males, females share to total

Besides gender wise patterns, the sector is marked by skewed nature of benefits across rural-urban areas. This is a “..a matter of concern in the context of employment in this sector, due to its potential to further aggravate the structural inequalities and hence gender divisions.” (Neetha, 2009:32).

4. Emerging Concerns & Policy Prescriptions

The analysis in the preceding sections reveals that employment structure in India has led to the polarization of skills such that women predominate in low paid, low skill work. Increasing feminization of workforce is accompanied by enhanced vulnerability. Vast sections of women workers are descending into a downward spiral resulting

in a deepening of gender based inequality in development. There is lack of adequate employment opportunities for female labour force. There is sectoral segregation with women concentrated in primary sectors in rural areas, unlike other liberalized economies. While women from substantial proportion of service sector, their concentration in personal services in urban areas points towards distress driven employment growth. Higher concentration of female workforce in low productivity industries negate the premise that economic reforms would create more employment opportunities in modern sectors.

The findings also indicate that there is a long way to go before the newer sectors can make a dent in transforming labour conditions for Indian women. This is also possibly why the evidence on real wage trends of women workers is rather disappointing. "Average real wages have in fact fallen between 1999-00 and 2004-05 for both regular and casual women workers, and have not increased much in relation to more than a decade earlier. For an economy that boasts one of the highest GDP growth rates in the world over this period, this is certainly an indictment." (Mukherjee, 2008:7). State intervention and a sharp focus on primary and secondary education and on English language would enhance the skill pool and impart better employment opportunities for women workers especially in the productive tertiary sector activities.

Persistence of anomalous relationship of female workforce participation rates as also female employment in primary sector could be explained in terms of factors that lie outside the realm of economic reasoning. The socio-cultural considerations far outweigh economic ones and cause differences in females work participation across states. Agriculture is a last resort option for a majority of the women workers in rural India and there is a crying need for women's employment diversification for raising their economic status. Rising feminization or increasing WPRs of women could be seen in the light of 'additional worker effect', inducing women to remain in labour market due to growth of income insecurity.

Employment of large number of female workers in non technical, or

'non knowledge based service sectors' should also be seen in this light, particularly in the Indian context. Standing (1999) puts forth the hypothesis that "...growing labour market flexibility and the diverse forms of insecurity have encouraged greater female labour force participation and employment." (P. 586). Thus sectoral and sub sectoral pattern of employment show that increase in participation rate of women is more an outcome of search for livelihood options than actual labour market expansion.

Computer and IT related revolution, together with financial and business services no doubt have served as the engines of economic growth in the recent path. It is possible that some of the optimism surrounding the knowledge sector as source of employment generation may be exaggerated, especially as far as women workers are concerned. Moreover this sector shows signs of labour market segmentation by gender, caste and class. Income differentials with other sectors possibly also suggest that its external effects on the rest of the economy and on economic welfare are not just limited, but even adverse.

The stable conditions of work by women can be ensured by certain policy prescriptions, notably, macro economic management by governments for employment generation and provision of adequate labour protection of all workers. This needs to be supplemented by increased public investments and provision of public services for direct employment generation and fiscal incentives for expansion of activities that use female labour. Lastly and most importantly the human capital base of women workers needs to be strengthened on an urgent basis. Spread of education and skill development alone can empower women workers in the country to reap the benefits of the growth.

Crucial policy concerns for women informal workers (a substantial section working as service sector workers), as spelled out by Ms. Ela Bhatt of SEWA (Self Employed Women's Association) include:

- a) Removal of statistical invisibility of informal women workers.
- b) Use of the globalization process that frequently weakened the bargaining power of workers, as an opportunity to integrate with global economic system.

- c) Access to social protection to overcome vulnerability at the time of crisis.
- d) Skill upgradation to enable women workers to face the competitive environment.
- e) Enhance the access of women workers to basic economic inputs and lastly.
- f) The need for academics and people's organizations to learn from each others' experiences and "to jointly map out a future research agenda on key issues relating to the informal sector." (Shah, 2004:7).

End Notes:

1. Labour force signifies the persons actually employed and also includes those available for work but currently unemployed.
2. According to the UPSS (usual status principal and subsidiary), workers are those who perform some work either in the principal status (major time criterion) or in the subsidiary status (pursuing economic activity for a shorter time throughout the reference year, not less than 30 days). Thus, a person who is not a worker in the usual principal status is considered a worker according to the UPSS if the person pursues some subsidiary economic activity for 30 days or more during the reference year. In other words, it includes secondary workers also, i.e., those whose main activity was non work but undertook work on a marginal basis.
3. NSSO defines self employed as those individuals who operate their own farms or non-farm enterprises or are engaged independently in a profession or trade on own-account or with one or a few partners.
4. As a proxy variable for gender empowerment and social status, we correlated the gender development index of the states with the FPRs for two points of time. The correlation coefficient was negligible.
5. The numbers of workers under different categories of tertiary sector are estimated for rural and urban areas combined. The actual numbers in various activities is based on applying the NSSO work participation rates (principal and subsidiary status) at NIC 2-digit level to the estimates of workers. The latter were arrived at by applying NSSO work participation rates to estimates of population for the survey years.

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Appendix: Correlation Matrix

1993-94	RFWPR94	R Poverty94	RF Illiteracy94	RNFS94	Ag Lab HH94	% NIA	% Ag Output91	RF Ag Emp94	GSDP86/91
RFWPR94	1.000	-0.368	0.202	-0.350	-0.150	-0.302	-0.273	0.474*	0.565*
R Poverty94		1.000	0.263	-0.328	0.049	-0.233	-0.030	0.224	-0.212
RF Illiteracy94			1.000	.725**	-0.009	0.258	0.341	.595**	0.337
RNFS94				1.000	0.059	0.192	-0.291	-.870**	-0.270
Ag Labour HH94					1.000	-0.037	-.530*	-0.263	-0.090
% NIA						1.000	0.363	-0.159	-0.091
% Ag Output91							1.000	0.198	0.135
RF Ag Emp94								1.000	0.331
GSDP86/91									1.000
1999-2000	RFWPR00	R Poverty00	RF Illiteracy00	RNFS00	Ag Lab HH00	% NIA	% Ag Output96	RF Ag Emp00	GSDP94/01
RFWPR00	1.000	-0.381	0.044	-0.434	0.14	-0.274	-0.612**	0.516*	0.327
R Poverty00		1.000	0.363	-0.529	0.384	-0.239	0.221	0.270	-0.386
RF Illiteracy00			1.000	-0.754**	0.168	0.217	0.324	0.579**	0.023
RNFS00				1.000	-0.156	0.075	-0.089	-0.826**	0.109
Ag Labour HH00					1.000	0.015	-0.301	0.002	0.222
% NIA						1.000	0.378	-0.354	0.134
% Ag Output96							1.000	-0.203	-0.366
RF Ag Emp00								1.000	0.006
GSDP94/01									1.000
2004-05	RFWPR05	R Poverty05	RF Illiteracy05	RNFS05	Ag Lab HH05	% NIA	% Ag Output01	RF Ag Emp05	GSDP01/06
RFWPR05	1.000	-0.297	-0.002	-0.322	0.222	-0.22	-0.539*	0.470*	0.395
R Poverty05		1.000	0.401	-0.394	0.259	-0.115	0.020	0.311	-0.184
RF Illiteracy05			1.000	-0.622**	0.445	0.278	0.316	0.480*	-0.278
RNFS05				1.000	-0.249	0.19	-0.104	-0.820**	0.076
Ag Labour HH05					1.000	-0.101	-0.214	0.169	-0.132
% NIA						1.000	0.477*	-0.292	-0.227
% Ag Output01							1.000	-0.105	-0.535*
RF Ag Emp05								1.000	0.156
GSDP01/06									1.000

** Significant at 0.01 level (2-tailed)

* Significant at 0.05 level (2-tailed)

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Note:

RFWPR :	Rural Female Worker Participation Rate
R Poverty :	Rural Poverty (per cent, Head Count Ratio)
RF Illiteracy :	Rural Female Illiteracy (per cent)
RNFS :	Rural Non Farm Sector (per cent)
Ag Labour HH :	Agricultural labour Households (per cent)
%NIA :	Per cent Net Irrigated Area
%AgOutput :	Percent Share of Agriculture in Gross State Domestic Product (constant price)
RFaGEmp :	Rural Female Employment in Agriculture (Percent, UPSS)
GSDP :	Growth Rate of Gross State Domestic Product (per cent per annum, constant price).

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