Female Labour Force Participation in Kerala: Problems and Prospects

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1.1 Introduction

Population, workforce and employment are closely interrelated and change in the size, composition and distribution of the population will alter the demographic structure of the labour force. In turn, a change in the size of the labour force, level of employment and job opportunities will affect components of population change, particularly fertility and migration (UN: 1976). According to recommended international definitions, unemployed persons seeking paid jobs are considered as the part of the labour force, but persons engaged in non-income producing activities, like women engaged in domestic work in own home, are excluded from it (UN: 1973). Participation in labour force varies among cultures, across age-groups and between sexes. Census or labour force surveys in different settings across the globe highlights relatively low labour force participation rate of women vis-à-vis men, and significant variation in female participation rate among countries (Jose: 1989). A number of analysis subscribe to the view that conceptual and measurement related problems, implicit in the identification of women within the labour force, serves as an explanation to the low levels of work force participation rate among women, observed particularly in most of the developing nations (Sinha: 1965,1971;Boserup: 1970;Agarwal: 1985). Again, cultural perceptions of traditional societies manifest in rigid notions about relative gender roles are found to prevail in these countries (cited in Jose: 1989). Levels of economic activity among women have been found to be concomitant with the process of economic development (Durand: 1965) and social progress. Sadie (1965) had opined about the existence of an U-shaped curve depicting the relationship between female work participation and the course of development, which he felt have four distinct stages. Accordingly, he justifies lower levels of economic activity among females, as observed in most of the transitional, developing societies in Asia and Latin America (UN: 1965). Considerable amount of literature exist regarding the various determinants and patterns of women's work in different socio-cultural settings. As such, both demographic as well as non-demographic factors have been suggested to explain and substantiate evidences of women's work based on micro as well as macro level studies.

The International Conference on Population and Development (ICPD), held in Cairo in 1994, reiterated the importance of economic activity among women, towards aiming the goal of gender equality and women empowerment. The conference noted that, the empowerment of women is anchored to their economic status in the society. Social recognition and status also hinges on economic empowerment (UN: 1994). Women's economic productivity is a critical factor, as the dependence of the family on their contribution to household resources increases with the poverty status of the household (Mahapatra: 2003). Thus, it has been maintained that making women more productive--hence more effective income earner--will reduce their dependency and enhance their status, besides helping in reducing fertility and slow down population growth, improving child health and nutrition status, bestowing greater decision making power on the women, both inside as well as outside the household

and increase aggregate labour productivity and ensure speedy growth in key economic sectors (World Bank: 1991; Gopalan: 1995).

Women are vital and productive agents in Indian economy, even as studies point towards 'statistical purdah' (World Bank: 1991) or 'economic invisibility' (Radha Devi: 1990) manifest in selective under-documentation of their endeavour, in a society with strong traits of patriarchal norms. In India the labour force is largely masculine, with only one out of every four workers being a female (RGI: 2002).

Within India, the state of Kerala has carved out a separate niche for itself in development discourse due to its impressive performance over the years in the demographic and social development front. Much has been written about Kerala's high level of female literacy, custom of matrilineal inheritance, political achievement regarding decentralized governance and commitment towards social welfare, high levels of life expectancy, low infant mortality and cohesive social structure promoting effective interpersonal channels of communication (Bhatt and Rajan: 1990; Kannan: 1990; Kumar: 1995). Such achievements in social development have led to the emergence of the so-called 'Kerala-Model' of development. However it is certainly paradoxical that, in such a society well acknowledged for according higher status and position to women, participation of the women in the labour force has been consistently on a decline. Such a paradox deserves close scrutiny.

There have been a few studies aimed at examining various dimensions of women's work in Kerala. Radha Devi (1981) studied the extent of female participation in economic activity in the state and the occupational pattern among them. She found that women in Kerala are primarily engaged in skilled or semi-skilled vocations and level of education among working-women is much higher than the rest. Again, marriage and family was found not to affect the work participation rate but family disruption due to divorce or separation did. Kumar (1994) had pointed out the nature of the economic structure in the state, which has shown reduced demand for female labour, and losses in the primary and secondary sector that has not been offset by the service sector. Another study, from the perspective of political economy of labour identified technological obsolescence, mismatch between labour demand and supply, and lack of fresh investments in the state has stood in the way of translation of social achievements into the economic sphere (Kannan: 1998). Panda studied the effects of family structure on young women's employment, and came out with significant influence of household composition, family characteristics and class status on employment. Mathew (1995) explored the problem of educated unemployment in the state and identified proliferation in general higher education, changing expectations of job, as well as a faulty educational system to be responsible for such phenomenon. In a recent study, aiming inter-censal comparison of trends and patterns of work force participation in Kerala, Rajan and others (1997) suggested that, level and nature of female workforce participation in the state has responded to census modifications over time, and although a large proportion of female workers are engaged in primary sector activities, the expansion of urban and tertiary sector activities has had a beneficial impact on the levels of female labour activity in 1981-91.

1.2 Need for the study

Kerala offers an interesting paradox of social advancement and economic stagnation. Women in the state in spite of enjoying better status and position compared to other parts of the country have low levels of participation in economic activity. Structural changes in the Indian economy, initiated under the New Economic Reforms in 1991, has set in motion a transitory force within the economic system of the country, and Kerala had not been immune to such forces. Much of these changes is believed to have profound implications for the levels and nature of employment or participation in economic activities, particularly for the women. In such a setting this paper broadly aims to take a fresh look at the current situation of women's work in Kerala, primarily on the basis of data provided in the 2001 Census of India. We aim to examine the issues and understanding the linkages underlying the recent trends in female work participation and identify the possible determinants of the observed paradox. We have mainly used Census of India 1991 and 2001 as our data source, but also drawn upon other data sources from various governmental publications, mainly from the Department of Economics and Statistics, Government of Kerala as supplementary sources.

1.3 Objectives

The main objectives of this paper are to:

1. Understand the level and nature of female labour activity at the district level in Kerala between 1991 and 2001;
2. Analyse sectoral shifts of female labour into different occupational categories, and inter-district variations of the same; and
3. Identify and explain various demographic and socio-economic factors responsible for the observed levels and changing patterns of female workforce participation rate across the state.

1.4 Female Workforce Participation in Kerala ---- Levels and Patterns

The concept of 'work', as defined in the Census of India has been broadly the same in the past five censuses, but the scope of the definition has been extended from time to time. In the 2001 Census, a set of five questions was canvassed to collect information on the details of work (or economic activity). As such, work has been defined as *participation in any economically productive activity with or without compensation, wages or profit*. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. It even includes part-time help or unpaid work on farm, family enterprise or in any other economic activity (Census of India: 2002).

The economic question of 2001 Census first divided the population into workers and non-workers on the basis of whether they have worked at all during the past one year preceding the census enumeration, which is taken as the 'reference period'. The workers are then classified into main workers

and marginal workers. The former category includes those who had worked for 6 (six) months (or 183 days) or more and the latter includes all those who worked for less than 6 months. Thus the population is categorized into three mutually exclusive groups: Main Workers, Marginal Workers and Non-workers.

There exists a general notion that women and children engaged into economic activity are grossly under enumerated, thereby affecting the census estimates. Particularly for women, most of their work are not reported under the influence of patriarchal conceptions of economic activity, and thus tends to remain 'invisible' (Agarwalla: 1985). The Census of 2001, taking due note of this limitation, laid emphasis on probing questions regarding work done at any time or any nature besides the regular household work. Furthermore, the wordings have been simplified to make these questions easy to understand. However, as we basically aim in this section to probe into the nature of levels and trends of women's economic activity between 1991 and 2001, such underestimates, if any, can be considered redundant, as such shortcomings will be common for both the periods. As the definition of economic activity and consequent classification of workers has remained more or less similar in 1991 as well as in 2001, comparisons can be safely attempted.

1.4.1 Classification of Workers

In the 1991 Census, workers were categorized into 9 (nine) occupational categories, viz.

I. Cultivators.
II. Agricultural Labourers
III. Livestock, Forestry, Fishing, Hunting, Plantation, Orchards and Allied activities
IV. Mining and Quarrying
V. Manufacturing and Repairs;
   a) Household Industries
   b) Other than Household Industries
VI. Construction
VII. Trade and Commerce
VIII. Transport, Storage and Communication.
IX. Services

However in 2001, a four-fold classification of workers has been carried out: Cultivators, Agricultural labourers, Workers in Household Industry and Other Workers. This four-fold classification involves a reorganization of definitions and concepts, which should be kept in mind while interpreting and understanding the data. According to the Census 2001, cultivators include persons engaged in cultivation of land owned or held from government or private persons or institutions for payment in money, kind or share. Cultivation involves ploughing, sowing, harvesting and production of cereals, millets and other crops, such as sugar cane, tobacco, groundnuts, fibre crops, medicinal and aromatic plants and also includes fruit growing, vegetable growing or keeping orchards. Cultivation *does not* include crops like tea, coffee, rubber, coconut and betel (areca) nuts. It should be carefully noted that in the 1991 Census, in addition to the crops excluded in 2001 from 'Cultivation', fruits, medicinal plants, flowers, vegetables, roots and tubers, and spices were also excluded, but were included in the 2001 definition. This remains a limitation in the comparison attempted.

The second category, agricultural labourers, includes persons who work in another person's land for wages, in cash or kind of share. Such a person has no risk in cultivation as well as has no right of lease or contract the land.

A household industry is defined as an industry conducted by one or more members of the household at home or within the village in rural areas and only within the precincts of the house where the household lives in urban areas. The larger proportion of workers in the household industry should consist of household members. The industry should not be run on the scale of a registered factory, which would qualify to be registered under the Indian Factories Act. All workers, other than cultivators, agricultural labourers or workers in the household industry are classified as other workers.

Due to such differences in classification of workers in 1991 and 2001, we had to rearrange the erstwhile nine categories of workers in 1991 into the four categories explained above, along the lines of the definitions provided, to facilitate comparison and analyse shifts in sectoral composition of workers.

1.4.2 Female workforce participation rate in Kerala: 1991-2001

Workforce participation rate, a useful measure of economic activity is computed as the ratio of total workers to the total population, expressed as a percentage. Census 2001 reveals that Kerala has the lowest workforce participation rate among females among all the major states in India. The total workforce in Kerala, according to the 2001 Census estimates is around 10.3 millions out of which 7.8 millions are males and only 2.5 millions are females.

Table1: Workforce in Kerala

								Exponential Growth Rate		
		No. of Workers					Population		Workers	
Area	**Year**	**Male**	**percent**	**Female**	**percent**	**Persons**	**Male**	**Female**	**Male**	**Female**
	1991	5033254	73.2	1838853	26.8	6872108				
Rural	**2001**	5750087	74.9	1925009	25.1	7675096	0.85	1.06	1.33	0.46
	1991	1765596	77.6	508415	22.4	2274011				
Urban	**2001**	2040435	78.0	575727	22.0	2616162	0.62	0.85	1.45	1.24
	1991	6798850	74.3	2347268	25.7	9146118				
Total	**2001**	7790522	75.7	2500736	24.3	10291258	0.79	1.00	1.36	0.63

Source: *Census of India*, relevant volumes

Table 1 represents the workforce in Kerala during 1991 and 2001, in rural as well as in urban areas. It is evident, that while the male population has grown at an annual rate of 0.79 percent over the last decade, and the female population at a rate of 1 percent, male labour force has grown at a rate of 1.36 percent surpassing the growth rate of the general population but the growth rate of female labour force, at 0.63 percent per annum, lags behind that of the overall female population. Again whereas in urban areas female labour force has grown at a faster rate than the urban female population, it is significantly lower in rural areas. In Kerala, the difference between the male and female participation rate has also intensified between 1991 and 2001. The Gender Gap, as the difference is commonly referred to, has

increased in rural and urban areas alike, in almost all parts of the state. On an average the gender gap for Kerala in 2001 is about 34 percentage points while it was around 32 in 1991.

In Table 2, we have the comparative estimates of Work Participation Rate (WPR) for India and Kerala in 1991 and 2001. In 2001 it can be seen that Male Workforce Participation Rate in Kerala at 50 percent is on comparable terms with the national estimates of 52 percent. However for females the Work Participation Rate of 15 percent is far below the all-India figure of 26 percent. Furthermore, while all-India Work Participation Rate for females have increased between 1991 and 2001, it has fallen marginally for Kerala during the same period.

Table 2: Work Participation Rate in 1991 and 2001

State/Country	MWPR		FWPR	
	1991	**2001**	**1991**	**2001**
India	51.6	51.9	22.3	25.7
Kerala	47.6	50.4	15.9	15.3

Source: Census of India; Provsn. Popn. Totals; Kerala: 2001

According to the 2001 census (Table 3), Mallapuram continues to be the district with the lowest female workforce participation rate in the state, in rural as well as in urban areas. On the other hand Idduki has the highest rate in rural Kerala while work participation among urban females is highest in Wayanad. Nevertheless, it is worth noting that most of the districts have witnessed a fall in the work participation rate, which is more pronounced in the rural areas. It appears that conditions determining female activity vary considerably among rural and urban areas, as well as among the districts.

Table 3: Female Workforce Participation in Kerala: 1991--2001

	Rural			Urban			Total		
Districts	**1991**	**2001**	**(percent)**	**1991**	**2001**	**(percent)**	**1991**	**2001**	**(percent)**
Kasargod	21.3	21.5	0.20	19.3	18.1	-1.20	21	20.8	-0.20
Kannur	16.1	17.8	1.70	11.7	12.7	1.00	13.8	15.2	1.40
Wayanad	23.8	22.8	-1.00	23	24.1	1.10	23.8	22.8	-1.00
Kozhikode	10.3	8.4	-1.90	7	7.7	0.70	9	8.1	-0.90
Mallapuram	9	6.6	-2.40	6.3	6.3	0.00	8.7	6.6	-2.10
Palakkad	24.4	21.8	-2.60	16.2	16.5	0.30	23.1	21.1	-2.00
Thrissur	18.9	15.4	-3.50	15.1	14.2	-0.90	17.9	15.1	-2.80
Ernakulam	18	19.3	1.30	12.7	14.7	2.00	15.5	17.1	1.60
Idduki	24.4	28.8	4.40	12.7	14.7	2.00	23.8	28.1	4.30
Kottayam	12.3	14.1	1.80	11.3	12.4	1.10	12.1	13.9	1.80
Alappuzha	22.1	20.1	-2.00	21.7	20.5	-1.20	22	20.2	-1.80
Pathanamthitta	12.6	13.4	0.80	11.8	12	0.20	12.5	13.2	0.70
Kollam	17.8	17.3	-0.50	13.8	13.6	-0.20	17	16.7	-0.30
Trivendrum	16.4	14	-2.40	14	15.1	1.10	15.6	14.4	-1.20
Kerala	**16.9**	**15.9**	**-1.00**	**13**	**13.5**	**0.50**	**15.9**	**15.3**	**-0.60**

Source: same as Table 1

Table 4 presents the figures for the main and marginal workers in Kerala at the district level, and there has been a decline in the main workers, for men and women workers alike, during the last decade. While for males it fell from 45 to 42 percent, for women it declined to 11 from 13 percent. This indicates that for males, the increase in the total work participation rate has not translated into the same for male main workers. For females the situation is acute as in all districts, except Kottayam, there has been a decline in the percentage of main workers. Similar to the ranking in terms of overall female workforce participation rate, Idduki has the highest percentage of main workers among females, while Mallapuram has the least. From the table it emerges that Seasonal employment, as captured by the percentage of marginal workers has been on the rise since 1991. Female marginal workers account for five percent of the total population in Kerala and have increased from three percent in 1991. Again such an increase was observed for all districts, except Kollam. The increase is comparatively more pronounced in the districts of Kasaragod, Wayanad, Pallakad, Ernakulam, Allappuzha and Idduki. It is interesting to note that in all of these districts, percentage of main workers among women have declined quite substantially. It thus appears that female labour has been increasingly marginalized in these districts Also the trends for the state altogether indicate that women are loosing long-term employment and casual labour among women is on the rise. Such an increase of marginal workers does not arise due to conceptual problems, as the definition of marginal workers has remained the same in 2001 as in 1991.

Table 4: Female main and marginal workers-1991-2001

	Main workers (as % of total population)			Marginal workers (as % of total population)		
Districts	**1991**	**2001**	**change**	**1991**	**2001**	**change**
Kasargod	17.7	14	-3.7	2.3	6.8	4.5
Kannur	11.2	10.5	-0.7	2.6	4.4	1.8
Wayanad	17.8	13	-4.8	6	9.8	3.8
Kozhikode	6.6	5.3	-1.3	2.4	2.8	0.4
Mallapuram	6.5	4.3	-2.2	2.2	2.3	0.1
Palakkad	20.2	15.1	-5.1	2.9	6	3.1
Thrissur	15.2	11.4	-3.8	2.7	3.7	1
Ernakulam	13	12	-1	2.5	5.1	2.6
Idduki	19.4	20.6	1.2	4.4	7.5	3.1
Kottayam	10.3	10.3	0	1.8	3.6	1.8
Allapuzha	17.5	13.3	-4.2	4.5	6.9	2.4
Pathanamthitta	9.2	9	-0.2	3.3	4.2	0.9
Kollam	12.2	12.6	0.4	4.8	4.1	-0.7
Trivendrum	12.8	10.4	-2.4	2.8	4	1.2
Kerala	**12.8**	**10.8**	**-2**	**3.1**	**4.5**	**1.4**

Source: same as Table 2

We now attempt to study the changes in the sectoral composition of women workers in Kerala between 1991 and 2001. For the purpose of comparability we have clubbed the erstwhile nine categories of 1991 into the four definitional categories of 2001. Further, we have only examined the changes among female workers in the main category. A cursory glance at the results indicates that a significant transformation and substantive reorganization among the occupational categories had taken place all over Kerala.

It is clear from the Table 5 that agriculture is no longer the surest channel of employment among the Kerallite women. Only four per cent and 18 percent of female main workers are employed as cultivators and agricultural labourers respectively. While for cultivators there is a decline of about two per cent points from 1991, in case of the latter category there is a major reduction of around 19 per cent points. It is apparent that there has been a large-scale replacement of female labour, particularly wage-labour in agriculture, by hired male workers. By all accounts, long-term employment in agriculture among women is gradually withering away. The picture is by and large the same in the districts, but is more severe in the northern and southwestern belt of the state. Only Idduki has recorded a rise in both the aforesaid categories.

Table 5: Sectoral composition of female (main) workers; Kerala, 2001

	I		**II**		**III**		**IV**	
Districts	**2001**	**change**	**2001**	**change**	**2001**	**change**	**2001**	**change**
Kasargode	2.76	-3.60	8.33	-17.07	32.10	31.32	56.81	-10.65
Kannur	4.67	-2.82	17.40	-21.60	4.34	2.24	73.59	20.08
Wayanad	10.06	2.12	29.40	-16.38	1.30	0.75	59.24	13.51
Kozhikode	2.31	-0.81	6.13	-13.27	3.53	-1.45	88.03	15.53
Mallapuram	3.92	-1.74	20.92	-31.71	3.53	-0.20	71.63	33.65
Pallakad	7.44	0.04	52.42	-17.90	3.81	0.95	36.33	16.91
Thrissur	3.41	-1.53	15.75	-21.27	8.63	-0.75	72.21	23.55
Ernakulam	3.47	-0.86	8.99	-18.81	4.24	1.33	83.30	18.34
Idduki	10.24	2.62	30.27	5.81	1.57	0.92	57.92	-9.35
Kottayam	2.05	-0.82	11.12	-21.22	5.28	-0.45	81.55	22.49
Alappuzha	1.26	-1.05	11.14	-20.19	13.30	-12.17	74.30	33.41
Pathanamthitta	4.24	-3.34	10.27	-24.54	3.09	2.01	82.40	25.87
Kollam	1.55	-2.75	4.74	-14.04	2.90	-1.26	90.82	18.06
Trivendrum	1.85	-5.45	5.42	-18.76	5.67	0.82	87.06	23.39
Kerala	**4.00**	**-1.56**	**17.27**	**-18.82**	**6.45**	**0.52**	**72.28**	**19.86**

Source; Same as Table 3; Change (in percentage points) represents during 1991--2001
I -- Cultivators, **II** -- Agricultural labourers, **III** -- Household industry, **IV** -- Other workers

The next category of household industry reveals no significant changes in employment. However, Kasargode comes out with huge increase in women's employment in this sector, on a long-term basis. The last category of 'other workers' is a heterogeneous agglomeration of diverse economic activity,

and there is little room for deriving any meaningful insights from the emerging patterns of female workforce participation in this sector. However, increase of employment in this sector to a certain extent captures the growth of the informal sector in the state. In fact, the last decade in Kerala witnessed tremendous proliferation in construction sector activities fuelled by remitted money from the Gulf. Construction sector typically absorbs unskilled labour force otherwise displaced from rural agriculture. While, in Kerala a structural transformation manifest in declining employment in agriculture, more pronounced for females, has been in process during the last decade, it appears that redundant female work force from rural areas might have joined the informal sector in urban areas, construction sector being the most important channel of such alternative employment. This may be one of the reasons of high increase in female work force participation rate in the 'other worker' category as well as to a certain extent also responsible for increase in the same in the urban areas.

1.5 Determinants of Low Levels of Women's Work

Kerala remains a paradoxical instance of a low-income agrarian society enjoying high quality of living levels. Even though Kerala ranks high on indicators of demographic progress and social development, it has not experienced similar levels of economic progress. Agriculture has been largely stagnant in the state and industrial growth lacklustre. It has one of the lowest levels of per capita income in the country, as well as highest levels of unemployment (State Planning Board: 2003). While the state accounts for only 4 percent of India's population, its unemployment rate is high at 31 percent, with 14 percent of males and 48 percent of the females in the state being unemployed (NSSO: 2000). It is also identified that the number of young men and women registered as work seekers in employment exchanges has gone up sharply during the last couple of decades.

Since the basic aim of this paper is to study the female employment situation in the state, we will limit our analysis to that aspect of employment. Economic conditions in the state have been particularly detrimental to opportunities for female employment (Eapen: 1992). Female workforce participation in the state, as indicated by the Census 2001, is the lowest among all the states. Moreover, the extent of unemployment among female work seekers has been relatively much higher (Mathew: 1995). Studies have pointed out that, gender discrimination of labour market in terms of occupational sex-segregation contributes to the low levels of economic participation among the women in Kerala (Panda: 1996). All these are indicative of the fact that there has been significant economic marginalization of women in the development process of Kerala. This anomaly between positive social indicators and negative economic indicators of women's role deserves special investigation.

In order to understand the various determinants of women's work in Kerala, we need to consider the effects of demographic, economic and socio-cultural factors that influence female workforce participation. As such, we have carried out simple bivariate and multivariate analysis to examine the strength as well as the direction of influence of these factors on the aforesaid phenomenon. In the

bivariate analysis, a zero-order correlation matrix was constructed to examine the relationship between female workforce participation rate (fwpr) for the 14 districts, as per the 2001 census and other socio-economic and demographic variables (table 6). The other variables included in our analysis are: Total fertility rate (tfr), Female literacy rate (flr), Male workforce participation rate (mwpr), Migration (migr), Growth in women employment in organized sector (public +private) (empl_g), Work seekers (work_s) registered at the employment exchanges, Reduction in the area under rice (rice_r), Change in operational holdings (op_hld_c), Growth in per capita income (pci_g), and Sex-Ratio (sex_rat). We now attempt to offer brief rationale for including these variables, before commenting on the results that emerge from our analysis.

Table 6: Correlation matrix of female workforce participation rate and its determinants

	sex_rat	op_hld_c	rice_r	pci_g	work_s	empl_g	migr	mwpr	tfr	flr
fwpr	**-0.517**	0.417	***-0.746***	**-0.609**	-0.427	0.097	**-0.575**	***0.732***	-0.247	*-0.456*
sex_rat		**-0.559**	**0.612**	**0.582**	0.346	-0.113	***0.676***	***-0.720***	-0.113	0.319
op_hld_c			-0.278	**-0.597**	-0.144	0.040	-0.450	0.486	-0.109	-0.187
rice_r				0.497	0.272	0.103	**0.532**	***-0.668***	0.198	0.282
pci_g					0.505	-0.257	**0.621**	-0.389	-0.342	**0.571**
work_s						-0.342	***0.825***	-0.155	-0.433	0.388
empl_g							-0.099	-0.137	0.249	-0.366
migr								**-0.594**	-0.066	0.299
mwpr									-0.451	-0.100
tfr										**-0.562**

Note : numerals in ***bold italics*** denotes correlation is significant at 0.01 level , in **bold** denotes the same at 0.05 level and *italics* denotes at 0.10 level(2- tailed)

1.5.1 Demographic Factors

Demographic events influence economic activity through changes in the age-structure of the population, reflecting past changes in the fertility and mortality patterns prevalent in the population (UN: 1962). Changes in the sex ratio of the population consequent to changes in sex differentials in demographic events, viz., fertility, mortality and migration, also influence work participation rate, by affecting the total population by sex. Many studies have shown that there is a direct relationship between population growth and labour supply. According to *Bloom and Freeman* (1986), a change in fertility levels translates into changes in structure of the population always with a lag. In Kerala, there has been a significant decline in the 0-14 age group, while an equivalent increase has been observed in the age group of 15-59 years. Such a 'middle-thick' population has obvious implication for the labour force participation, more so among women, given the fact that women outnumber men in almost all the districts of Kerala.

In our analysis, three demographic variables were used: total fertility rate, migration (emigration and outmigration) and sex ratio. Total fertility rate was taken as it has two-way effect on women's work—fertility levels in the population determine the age structure of the population, but after a certain time lag, until the cohort reaches economically active age; at the same time lower fertility levels lower the burden of bearing and rearing children, and encourages greater workforce participation of women.

Table 7: Demographic Indicators for Kerala and India 1990--2000

	1990					
	Kerala			India		
Rate	**Total**	**Rural**	**Urban**	**Total**	**Rural**	**Urban**
CBR	18.3	18.4	18.1	29.5	30.9	24.3
TFR	1.8	1.8	1.7	3.6	3.9	2.7
CDR	6	6.2	5.3	9.8	10.6	7.1
IMR	16	17	16	80	87	53
MAM	22	22	22.2	19.5	19.2	20.6
	2000					
CBR	17.9	18	17.5	25.8	27.6	20.7
TFR	1.9	1.9	1.8	3.2	3.5	2.3
CDR	6.4	6.5	6.2	8.5	9.3	6.3
IMR	14	14	14	68	74	44
MAM	22.2	22.1	22.7	19.8	19.4	21.1

Source: *Statistical Report* (2001), Sample registration System, RGI, Govt. of India; Fertility an Mortality Indicators (1991) by the same organisation.

Sex ratio, as mentioned earlier also affects workforce participation. In Kerala sex ratio is higher as in most of the districts females outnumber males. As the total population of females are higher than that of males, female workforce participation rate can be depressed to a certain extent.

Sex differentials in migration naturally affect the sex ratio and thereby exert influence on activity rate. However, migration also depresses female workforce participation through the through the so-called 'income-effect', wherein higher amount of household income discourages the participation in economic activity by the female members of the household. This hypothesis perfectly fits into the Kerallite setting, as the district of Mallapuram, and Kozhikode (to some extent), which have high incidence of migration, also has the lowest rate of female work participation in the state.

It can be seen from the correlation matrix that sex ratio and migration have significant correlation with female workforce participation. In fact both of these variables have moderately strong negative correlation with female work participation. It is thus clear that both of these variables have a depressing effect on women's work in the state, which justifies our earlier observation. However, no significant association could be established in the case of total fertility rate.

Bhatt and Rajan (1990) have pointed out the implications of past reduction of mortality on population in the working age groups and of fertility decline on women labour force in particular. In Kerala, higher levels of fertility prevailed prior to 1960's. The decline in total fertility rate (TFR) in Kerala has been quite sharp. It fell from 3.7 children per woman in 1971-75 to 2.4 in 1985, 1.7 in 1992 and 1.9 in 2001. With the decline in fertility, considerable decline in mortality took place. Apart from improvements in infant and child survival, there has been a general mortality decline, more so for the female mortality in the childbearing ages, since 1970(Bhatt and Rajan; op. cit.). Apart from noticeable increase in life

expectancy of females, which at 74 years surpasses that of males (at 59 years), such a positive demographic change had led to an immediate impact on female labour force by causing significant increase in adult female population in the working ages. Thus, demographic transition in Kerala had by and large a two-fold effect on female labour force participation, the lagged effect of fertility decline has caused a shift in the age structure of the population in favour of the working ages, and simultaneously, decline in mortality levels, particularly maternal mortality working in the same direction. Similar evidences emerge from the pattern of changes in the 'dependency ratio' (Eapen; op. cit.). Such a pattern of demographic change, which, above all, had led to a growth in the population among the job seekers, offers an explanation for depressed economic activity rate, the female labour force being more affected in the process. Table 7 shows the trends in total fertility rate, life expectancy at birth and sex ratio at birth for Kerala during 1990 to 2000.

In Kerala, it has been pointed out that more women are entering labour force, available for work, not only because of the increase in population of the working age-groups, but also because they can do so due to the dramatic decline in fertility. But, female workforce participation in Kerala has been on a declining trend and shows that employment opportunities have not grown adequately over the years to accommodate the increasing number of female work-seekers.

1.5.1.1 Effect of migration

Migration in Kerala, which we had found out of having significant association with female workforce participation, shows considerable variation among districts. The highest concentration of migrants originates from the Mallapuram--Thrissur--Kozhikode belt, which together accounts for about one third of the total migrant population from the state (table 8). Migration in Kerala exhibits differentials by age, sex, religion and educational level. Religion has been one of the most powerful factors associated with migration, with almost half of the emigrants being muslims. This seems perfectly natural since the Gulf countries, which are predominantly Islamic, are the chief destination of the emigrants. In fact this is also the very reason of high concentration of emigrants in Mallapuram and Kozhikode, the two most prominent muslim- majority districts in the state.

Migration in Kerala has been a male-dominated affair, with only one out of every ten migrants being a woman. However, if we consider only the out-migrants, women have a higher representation; one out of every four outmigrants is a woman. Thus, it appears that women in Kerala have greater mobility within the country than outside its borders, compared to their male counterparts. But among the females, for both emigrants as well as the outmigrants, the Syrian Christians are the majority. Migration was least among muslim women, reflecting the socio-cultural norms in the community, discouraging such outdoor ventures. Migration from Kerala has been selective of higher education and female migrants were better educated than males.

Table 8: District-wise estimates of migration: Kerala, 1998

Districts	emi+omi	rem+rom
Kasargode	84119	122984
Kannur	134080	196520
Wayanad	7170	30933
Kozhikode	144366	255486
Mallapuram	320532	470937
Palakkad	189282	346411
Thrissur	246765	556791
Ernakulam	137955	228255
Idduki	16518	29081
Kottayam	73216	140599
Alappuzha	152393	347446
Pathanamthitta	183989	290560
Kollam	174278	332142
Trivendrum	188987	403574
Kerala	**2053649**	**3751720**

Source: Reproduced from Zachariah et.al.;2001

Note: emi=emigrants rom=return outmigrants

omi= outmigrants rem=return migrants

Remittances from emigrants have played a significant role in the contemporary economy and society of Kerala. During 1998, cash remittances accounted for about nine percent of the state domestic product (Zachariah et. al.: 2002). Among the communities muslims received the highest proportion of the remittances, followed by the Christians, while among the districts, Mallapuram received about 17 percent, Thrissur 14 percent and Ernakulam 13 percent of the remittances. The southern districts, Trivendrum to Alappuzha received remittances in the range of 6-10 percent (Zachariah et. al op. cit.)

Extensive migration in Kerala has had important consequences on all realms of the state's society. As far as its implications on women's workforce participation is concerned, it is natural to expect a depressing effect of emigration, in particular, on the levels and patterns of women's work in the state. The pathways of influence mainly operate through the so-called 'income-effect', wherein higher amount of household income discourages the participation in economic activity by the female members of the household. This hypothesis perfectly fits into the Kerallite setting, as the district of Mallapuram, and Kozhikode (to some extent), which have high incidence of migration, also has the lowest rate of female work participation in the state. The same line of reasoning could also be applied for Pathanamthitta, Kottayam and Thrissur. However, for Kottayam, which has a high concentration of christian community, outmigration of females to other states mainly as teachers or medical personnel, seems to be the major influencing factor. At the other end of the spectrum, for the districts of Idduki and Wayanad, which has the highest levels of economic activity among the females, prevalence of migration has been the lowest in the state. These are suggestive of the fact that, financial assistance from emigrant family members has

reduced the urgency of getting employed among the women of Kerala. Absence of such external sources of support induces women, on the other hand, to take up gainful employment to supplement family income. Another indirect effect of migration on the workforce participation of females seems to be the emerging trends of significant in-migration of unskilled and semi-skilled labour into Kerala from other states. Termed as 'replacement migration' (Zachariah et.al.:2004), such a process, encouraged by high level of wages in the state, and to some extent, changes in the cropping pattern or scarcity of male labour, has been quiet large in the construction sector and as seasonal labour in the agriculture sector. This had further marginalized the women labour force by pushing them out of the wage labour category in these sectors

1.5.2 Economic Factors

In our analysis, we have divided the economic determinants of workforce participation into factors related to agriculture, industrial factors as well as factors related to unemployment among the educated females. As such variables like, reduction in the area under rice (during 1991 and 2001), change in operational holdings, growth in women employment in the organised sector, registered work seekers at the employment exchanges and growth in per capita income were incorporated to examine their association with female work participation rate.

The variable, reduction in area under rice, captures the percentage decline in area under rice between 1991-92 and 2001-02. Since the decline was found to be more severe in the districts with low levels of workforce participation rate (Table 9), we expect a strong negative correlation. Change in operational holdings, which shows the percentage change in total operational holdings, or area under cultivation, from 1991 to 1995-96 (the latest year for which this data is available), was included as it is associated with the extent of landless labour. Growth in women employment in organized sector (public +private) captures separately the changes in organized sector employment among women, which the census does not provide. Work seekers registered at the employment exchanges serves as a proxy to the prevalence of unemployment among the educated at the district level, since NSSO estimates for it are only available at the state level. Growth in per capita income at the district level reflects the relative economic condition for the districts and following the same line of reasoning like the depressing effect of migration on women's work due to the 'income effect', we expect this variable also to have negative association with female workforce participation rate.

From the correlation matrix it is evident that reduction in area under rice and growth in per capita income exhibit statistically significant correlation coefficients with female workforce participation rate. The direction of the association, negative for both the variables, is along expected lines.

1.5.2.1 Employment potential of agriculture and its effect on female workforce participation

Agriculture has been historically the mainstay of Kerala economy and traditionally, the most significant sector of female employment, especially in the rural areas. However, it is evident from the census figures that women cultivators and agricultural labourers together account for only 22 percent of the female workforce in the main category in 2001, which has fallen dramatically from 42 percent in 1991. Agriculture is no longer the most significant channel of female employment in Kerala, at least from the employment point of view. Such a structural transformation of the economy in terms of relative importance of providing employment, particularly female employment, has great implication for the women workforce at large in Kerala. In agriculture dominated districts like Palakkad, Wayanad and Mallapuram which ion 1991 had more than 50 percent of the female main workers in agriculture, the decline has been quiet large. In Palakkad the decline is by 21 percent points, in Mallapuram by 32 percent points and Wayanad by 14 percent points. In 2001 only in the Palakkad district more than half of the women workforce is still engaged in agriculture, either as cultivators or as wage labourers.

Current trend across the districts indicate that female workforce in agriculture has come down sharply all over Kerala in the last decade. The decline has been more pronounced for female wage labour, which has declined by about 18 percent points all over Kerala. In the districts of Mallapuram, Kannur, Thrissur, Kottayam, Allapuzha, and Pathanamthitta the decline has been greater than the all-Kerala trends. Among these, Mallapuram, Thrissur and Allapuzha have also witnessed significant decline in female workforce participation rate during the period. Taken together, decline in women's work in agriculture, all over Kerala, seems to be a significant determinant of female workforce participation, depressing the rate in the state and responsible for the much lower levels in some districts.

In Kerala, female labour activity in agriculture is mainly confined to the cultivation of food-crops, mainly paddy. Some tasks in paddy cultivation, such as transplanting, weeding and harvesting are typically female-intensive. Studies suggest that there was a significant increase in area under paddy cultivation during 1960-70, thereby boosting up female wage labour employment in particular (cited in Gulati et.al: 1997) Area under paddy declined by about 25 percent during 1970-80 and by 28 percent during 1980-90. Productivity stagnated and there was intensive switchover to cash crops, mainly coconut, banana and spices. However, during 1990-91 to 2000-01, there has been a staggering decline in land under paddy-- by around 40 percent-- which was common for all the districts (Table 9). Such a rapid and high decline in area under paddy, have had its expected fallout on women's work, particularly on hired female labour. This effect is evident in results of our correlation wherein, it is clear from the strong negative correlation coefficient that the sharper is the decline in area under rice, the lower is the activity rate. An important point to note in this connection, which brings out the association between decline in area under paddy and women's work more clearly, is that the districts with inordinately low female work participation rate- Kozhikode and Mallapuram- has also witnessed sharp decline in area under paddy during 1991—2001,45 and 55 percent respectively. Although high sex-ratio and a predominant muslim

population with traditional socio-cultural norms regarding female work may be other socio-demographic reasons, yet to some extent cropping pattern changes have indeed accentuated the low rate.

Furthermore, land under tapioca, the other main food crop, also declined by 24 percent during the 1990's. Being highly market sensitive in nature and owing to more liberalized norms of international trade and commerce since 1991, had prompted large scale switch over to perennial cash crops having a good domestic as well as international market like Banana, coconut, condiments and spices etc. As fallout female wage labour has thus been largely replaced by hired male labour, mostly from migrant population from Orissa, Andhra, Karnataka, Tamil Nadu drawn by higher level of agricultural wages in the state.

Table 9: District-wise reduction in area under paddy, Kerala: 1991--2001

	Area under paddy		
Districts	1991-92	2001-02	% reduction
Kasargode	13430	7413	44.80
Kannur	20333	10987	45.96
Wayanad	19582	12855	34.35
Kozhikode	11535	6402	44.50
Mallapuram	50361	22654	55.02
Palakkad	147066	115904	21.19
Thrissur	69065	37012	46.41
Ernakulam	65001	32905	49.38
Idduki	4851	4388	9.54
Kottayam	23855	15250	36.07
Alappuzha	55872	33111	40.74
Pathanamthitta	13153	5218	60.33
Kollam	27619	11459	58.51
Trivendrum	19604	6810	65.26
Kerala	541327	322368	40.45

Source: Statisticsfor Planning (2001); Deptt.of Economics and Statistics, Govt. of Kerala

1.5.2.2 Industrial Stagnation in Kerala

Apart from agriculture, which constitutes the primary sector, the changes in levels of female employment in the secondary and tertiary sector, mainly comprising of industry and service sector needs to be considered to ascertain the factors responsible for low levels of female workforce participation in Kerala. However, the variable 'growth in women employment', which was used to capture a broad picture of organised manufacturing industry, was found not to have any statistically significant correlation with female workforce participation. Nevertheless, if we consider data on state domestic product (SDP) in the industrial sector, it indicates that growth in this sector has been negligible leading to stagnation. According to the Economic Review (2003), all the traditional industries are facing serious threat due to unfair terms of trade and substitution of machine-made and synthetic products. Since the

New Economic Reforms were initiated in 1991, cottage, small-scale and household industry have been largely affected by unfair competition from bigger players, lack of product demand etc. and had either closed down or were largely sick, laying off thousands of workers. Kerala is not an exception. Again in view of prevalent high levels of wages in the state and due to strong influence of labour unions and legislations, most of the industries had migrated to the neighbouring states, mainly Tamil Nadu, in the face of uneconomic cost conditions. The female workforce in the state has felt most of the damages, mainly because unlike in other parts of the country, Kerala has the highest proportion of women in manufacturing, mainly because women have historically dominated industries like coir, cashew, beedi, and handloom and to some extent fish-processing. Thus, in the last decade due to adverse effects of both exogenous and endogenous situations female workforce in the unorganised manufacturing in Kerala has been at a disadvantage.

It is evident that the household industry sector, largely comprising of cashew, coir and to some extent handlooms has witnessed a very sluggish growth of around one percent during the inter-censal period. Kasargode shows a staggering increase in this category of over 32 percent points. The main reason seems to be growing importance of marine products and seafood-processing industry, which is primarily export oriented, and thus witnessed sharp growth in the post-reform era. Proximity to the port of Mangalore added to its advantage. In connection with the fall in female employment in the household industry it is apparent that increase of capital-intensive technologies even within the domestic industries has forced out women workers gradually.

The non-household industries comprise the organized sector within the industrial category. According to the Economic Review (2003) total employment in organized sector has been slightly increasing since 1996, except in 2002. However, as we have mentioned no separate data on the present employment pattern in this sector has been provided in the 2001 census, and so, we can at best speculate upon the trend in female workforce participation in this section. Earlier studies indicate that Kerala has a lop-sided industrial base consisting of resource-based industries like food-processing, wood and wood products, rubber and rubber products, tea and non-metallic mineral industries coming under the use-based classification of consumer goods and intermediate goods category, while demand-based industries and capital goods (e.g. engineering) industries do not have a fair share (Subrahmanian: 1990) This is largely divergent from the industrial pattern in other neighbouring southern states. In the public sector, apart from scanty central investment, the existing projects stand as island without functional linkages with mainstream activities. The same logic applies to the State government funded units too. (SPB: 2003)

In the private sector, the tea industry, which is limited in Wayanad and Idduki districts, continue to be the few existing industries where female employment is predominant. In fact, the existence of tea industry has been the main reason of the high levels of female economic activity and high female workforce participation rate in these two districts. However, tea industry all over the country has been witnessing turbulent times in the recent years and for how long such strong channels of female employment in the state can be sustained is a significant question. In fact, Idduki has witnessed a fall in

the proportion of women workers in the 'other workers' category, which may be due to loss of permanent jobs and downsizing within the tea industry and greater degree of casualisation.

It has also been maintained that within the manufacturing sector, a shift from household to non-household industries has taken place within the handloom sector, which has been increasingly co-operativised and introduction of power looms as a part of modernization leading to factory system of production (Rajan et. al.: op. cit.) These industries have been traditionally predominant in the districts of Kozhikode, Kannur, Kottayam, Allapuzha, Kollam and Trivendrum, and as the handloom sector has shown historically high domination of women, the handsome growth of 'other workers' category among women workers in these districts can be partly explained.

1.5.2.3 Unemployment among the educated

The issue of educated unemployed in Kerala in general and females in particular is an important dimension to be considered towards addressing the general issue of female labour force participation. We had attempted to see the nature of association between the numbers of work seekers registered at the employment exchanges in the districts (who can be considered as relatively educated and seeking work) and female workforce participation. Although women outnumber men seeking employment through the employment exchanges, the association was weak and also not significant.

We had examined the unemployment situation in Kerala as it emerges from the latest rounds of quinquennial survey on employment and unemployment by the National Sample Survey Organisation (NSSO) (i.e. 1994-95 and 1999-2000) (table 10). From table 10 it is clear that by any reckoning the incidence of unemployment among the educated is very high in Kerala and for each educational category female labour force had higher rate of unemployment than their male counterparts, regardless of rural-urban differences Although the state has made significant achievements in spreading benefits of general education among the masses, cutting across regional and gender differences, such achievements have been largely quantitative. Girls are 50 percent of total students at the secondary level, 60 percent of the total students at the degree level and around 70 percent in the post-graduate level (SPB: op. cit.), leading to a higher supply of educated girls in the job-market. The main reason behind the apparent anomaly of oversupply of liberal arts and science graduates and post-graduates, even in the face of growing unemployment is the hypothesis that higher education is viewed as a desirable substitute for employment. In fact, Todaro and Edwards (1970) maintain that worsening of employment situation leads to an increased demand for more education. In view of the phenomenon of 'marriage squeeze', arising on account of dearth of men of marriageable age in the marriage market, (mainly because of large scale outmigration of youth in search of employment) has contributed towards raising the mean age at marriage among Kerallite women substantially and had facilitated continuation of education, in the face of no tenable employment alternatives. Apart from unemployment, such a rise in tertiary education also leads to depressing of real earnings, due to the so called 'cascade effect', according to which highly trained but currently unemployed replace less qualified persons and the latter in turn replace those less

qualified than them (cited in Mathew: op.cit.). In Kerala this had been, the case wherein highly qualified women (and men to some extent) were found to work as petty clerks or other jobs that seldom require more qualification than matriculation.

Table 10: Education-specific WPR of persons aged 15 years and above according to usual principal status Kerala and India

50th Round (1993-94)			not lit.	lit. & prim.	midl.	sec.	h. sec.	grad.&abv.
Kerala		M	73.2	85.5	77.3	59.9	39.6	68.2
	Rural	F	28.8	26.8	14	13.3	0.84	30.4
		M	73.1	82.1	75.1	63.7	50.4	79
	Urban	F	25.4	22.9	13.9	15.5	20.1	36.9
India		M	91.3	89.8	73.5	68.3	62.9	79.2
	Rural	F	39.1	28.6	17.7	15.3	16.1	29.3
		M	86.6	84.4	71.3	66.3	58.9	80.7
	Urban	F	23.3	15	9.1	10.8	12.6	28.2
55th Round(1999-2000)								
Kerala		M	68.3	80.3	75.8	63.9	52.4	72.5
	Rural	F	25.7	25.9	17.3	14.9	13.6	25.5
		M	54.6	78.3	77.7	64.7	46	80.9
	Urban	F	16.7	24.3	16.8	20	16.7	31.9
India		M	89.1	87.2	75.2	71.3	67.9	80.2
	Rural	F	40.4	30.3	20.5	17.3	13.4	26.9
		M	83.6	82.4	72.5	66.1	59.9	79.7
	Urban	F	22.9	14.6	9.9	10.4	11.1	25.2

Source: "*Employment and Unemployment Situation in India*-1999-2000"' NSS-55th Rd., Tables 7.4. &, NSS-50th Round, 1993-94, Tables 7.4

The over-proliferation of general arts and science education among females vis-à-vis vocational and professional education, remains another factor influencing educated unemployment among them. In fact over the past years, there has been an accumulation of a huge pool of educated women in the state but few with the requisite skills, knowledge and work capacities.

The extent of unemployment among females can be estimated from the figures supplied by the district employment exchanges. According to the Economic Review (2003), women outnumber men seeking employment through the employment exchanges. The position is reflected in all the 14 districts, although the total numbers of job seekers have come down marginally. Trivendrum has the highest number of workseekers in general as well as professional categories. Kollam closely follows it. The lowest number of work seekers is in Kasargod and Wayanad districts. (SPB: 2003)

Evidence suggests that in Kerala, preference for salaried employment among women in particular, rather than pursuing self-employment also explains persistent unemployment among educated. Even in face of no sizeable amount of new jobs, salaried jobs remain the most significant

channel of female employment in urban areas particularly. Most of the educated women in Kerala seek a job as teacher or medical personnel, and in search of it, migrate out of the state or the country.

Among the economic variables we had considered for the correlation analysis, growth in per capita income is an important one that exhibits strong, significant negative association with female work force participation, which suggests that based on the depressing effect of income, similar to that of migration, higher levels of per capita income also offsets female employment. However, for this factor, evidences across the districts are not so clear-cut. In fact, Idduki, the district with the lowest growth rate of per capita income has the highest workforce participation rate. Similar observation can be made for Wayanad and Kasargod. On the other hand, growth rate are near the state average for the districts of Mallapuram and Kozhikode. It thus appears that women's work in Kerala, as in many other agrarian societies, is largely dependant on the financial position of the household, and to a certain extent poverty-driven, at least in rural areas.

In addition to the factors discussed above, there are certain other factors that can affect levels and changes in women's work. Female literacy and male workforce participation are important determinants of female work force participation, and as such we included these variables in our analysis to examine the nature of association between them. As the results indicate male workforce participation has significantly strong positive correlation with the same for females, while female literacy rate has significant but moderate negative correlation coefficients. Conventionally, a high level of female literacy is an indicator of social progress and better status and position of women in the society. It is natural to expect higher levels economic activity among women in such society, as women are freer to take up employment in some form. Thus, a positive correlation coefficient would seem more likely in a state with commendable social advancement like Kerala. However, that is not the case. As we had noted earlier, women in Kerala are not merely literate but generally have at least secondary education or even higher. Lack of enough suitable employment opportunities along with aspiration for jobs of specific characteristics, has been fuelling the problem of unemployment among educated women, due to the stereo-typing of jobs available for women.

Male workforce participation, on the other hand shows high positive relationship with the same for females. It means that higher workforce participation of males is more likely to bring about greater degree of workforce participation among females too. Although it may seem natural that in a setting with limited employment opportunities, increase in male work force participation, would discourage economic activity among women, the results suggests the opposite. Hence, it appears that work participation in Kerala, irrespective of sex, has been largely poverty driven or dependant on the economic condition of the household. This hypothesis could be indirectly supported by the fact that the districts, which had recorded lowest work participation rate for females, also held the same position for males. In fact ranking of districts according to male and female work participation rate were more or less similar.

1.6 Multivariate analysis

Multiple regression, taking female work force participation rate as dependant variable, was also carried out to identify the statistically significant predictor variables that influences women's work in Kerala. Regressions were run taking data for all the variables included in the bivariate analysis and some additional variables (for e.g. growth in state domestic product, enrolment in secondary and tertiary education etc.) pertaining to 1991 and 2001 separately. Growth rate of state domestic product was the only variable that emerged significant when stepwise regression were carried out. In another model, we had pooled the data for 1991 and 2001 (primarily to increase the sample size), taking time as a continuous dummy (assigned value of 0 for 1991 and 1 for 2001). In this exercise we had initially included only those variables as predictors, which had significant correlation coefficients with female work participation. However, two of those variables, viz., growth in per capita income and migration had to be dropped, as data were not available for both the time periods. Also, instead of reduction in area under paddy, we had used total land under paddy cultivation as a proxy.

Table 11: Regression of female work participation rate and its determinants

Table 11a		**Table 11b**	
Predictors	B coefficients	Predictors	B coefficients
male workforce participation rate	0.913*	male workforce participation rate	0.883***
area under paddy cultivation	0.152	enrolment in higher education	-3.863***
female literacy rate	0.449*	area under paddy cultivation	1.74**
time	-1.591	employment in organised sector	1.992
		time	-2.065
constant	9.681	constant	-25.703
R square	**0.612**	**R square**	**0.652**
Adjusted R square	**0.549**	**Adjusted R square**	**0.580**
N	28		
Dependant variable = female workforce participation rate			

** p< 0.01, **p< 0.05, ***p< 0.001*

Results of the regression are shown in table 11a. It is seen that only male workforce participation rate and female literacy rate emerged as significant predictors. In another exercise (table 11b) we included two other variables, viz., enrolment in higher education and female employment in organised sector. It can be seen that while male workforce participation rate and enrolment in higher education are highly significant, area under paddy is also significant, but employment in organised sector is not significant.

It thus appears from the multivariate analysis that male workforce participation, female literacy rate, area under paddy and enrolment in higher education emerges as significant determinants of female work force participation. Moreover, the direction of relationship between the dependant and independent variables is along the line that emerges from bivariate analysis. However, lack of data for migration and growth rate of per capita income had prevented inclusion of these variables in the

regressions, which otherwise have emerged as of having strong, significant relationship with female work participation rate.

1.7 Concluding Observation – what the future holds in store for women in Kerala

Contemporary development process in Kerala has been an unusual instance of contradictions. It is clear that for the state, social and economic development were not simultaneous. Acceleration in social development in the context of demographic transition has led to a mismatch between labour supply and labour demand resulting a vast population of educated, young labour force in a stagnant economy, surviving largely on expansion of service sector, facilitated by international remittances. As we find from our analysis, limiting of options had been more severe for the women. Remarkable changes in the cropping pattern had displaced large volume of the women workforce from agriculture, especially in the rural areas, and the primary sector is no longer the most significant channel of employment. Manufacturing industries, both at the household level as well as other than it, was also largely stagnant. Economic activity among women has only increased in the tertiary sector. These had further led to the intensification of unemployment in the state, more so among the educated females. Large-scale emigration and outmigration from the state brought about prosperity to a certain extent, but has failed to provide tenable solution to the problem of unemployment. Convergence of these factors has led to a declining trend in work force participation among females, besides widening the gender gap in employment during the last decade. The trends in work participation are equally acute in the districts. All the northern Malabar districts have witnessed a fall in the work participation rate among females, whereas the southern districts have witnessed marginal increase. Agriculture dominated districts of Pallakad, Idduki and Wayanad continues to be the highest women-employing districts. Agriculture, as our study of the census data reveals, no longer remains the most important sectors of female employment. Casualisation of women workforce is also on an increase.

Theoretically, it is natural for economic activity among women to follow a U-shaped curve along the course of development. In the initial stages of development, when society is primarily agrarian, increased demand of female labour leads to higher workforce participation among women. Industrialization gives rise to greater demand for skilled labour, and as a consequence involves displacement of women labour and its substitution by male labour. It is only in the later stages of development, as a consequence of the emergence and expansion of tertiary sector, demand for women labour is renewed.(Boserup:1970;UN:1976.) However, it is felt that it is not going to follow exactly the same pattern in Kerala. Although women labour has been systematically displaced from agriculture and household industry, their traditional sectors of employment, growth of tertiary sector, mainly manifest in the proliferation of service sector, has not been able to entirely absorb the redundant labour. Although, Kerala has attained commendable achievements in the field of general education among females, the same is not true for the spread of professional and vocational education. Again, the domains within the

service sector that has been witnessing vibrant growth in other parts of the country, viz., consultancy customer care services, financial services, business support activities etc. have not yet emerged in the state as viable channels of employment. Information technology enabled services (ITES), another sunshine sector of employment in urban India, is yet to establish itself in the state, although recent initiatives like the "*Akshaya Project*" of the state IT mission is aimed towards achieving the same goal. The service sector in Kerala is largely comprised of hotels and restaurant, shops and commercial establishments and sales and servicing of consumer appliances, which has limited potential of expansion. Even tourism, the sector that has been held as a promising sector of self-employment generation, does not seem to offer much promise for unemployed females, mainly because of sex-selective occupational segregation of available professions in this field like guides, tour operators etc. Out-migration of educated females to other states of the country, mainly to take up employment as teachers or medical personnel, cannot continue indefinitely, mainly in view of spread of higher education among females in other parts of the country as well in the past few years. Emigration to the gulf has already started to show signs of decline. In such a situation, there seems lack of plausible explanation as to how work participation of females can rise along with the development process, when the very process in the state appears to be not sensitive and accommodative enough to ensure greater participation of women, in changed roles, in the economic activity. Thus, in all probabilities, as the recent trends indicate the U-curve depicting women's economic participation along the course of development, can be reasonably expected to have a rather longer trough, a relatively wide flatter portion, for some periods to come.

There has also been significant change in perceptions about jobs among the educated women, even in rural areas. As a natural corollary of spread of education and social progress, an increased number of women now aspire for salaried jobs, preferably government jobs or even economically less rewarding private jobs, as compared to getting employed in either fields or factories. This had led to disequilibria in the job-market with too many women vying for not enough jobs, and in the process unemployment increases.

Throughout this paper, we have basically attempted to examine the trends and patterns of female workforce participation across Kerala, during 1991 and 2001, which emerge from the census. At the same time we have tried to identify the various determinants of women's work in Kerala, and as to why in spite of advancement in social status, economic role of female continues to be marginalized. It is clear that structural transformation of women's economic activity have indeed taken place in the state with agriculture and traditional industries loosing its importance and tertiary sector taking up its place, yet reduction of employment among women have taken place in the process, the event being more pronounced in some districts. As we have found, migration, reduction in paddy cultivation, growth in per capita income (mainly due to remittances), male workforce participation, sex ratio, and female literacy rate to certain extent emerged as the variables having significant correlation with female workforce participation rate.

We feel that the reason behind the paradox of low female employment and high social development is the development process in the state, which has remained largely irresponsive to the transition in the quality of the women workforce, as well as the overall occupational transformation in the state. High cost of labour on account of higher than national average labour wages, and resistance to technological up gradation due to fear of retrenchment, had paralysed both industrial and agricultural sectors alike, and uneconomic returns had caused industries to close down or migrate out of the state and shifting of cropping pattern in agriculture. In most of the cases, it was the women worker who was worse hit. Again, even as private savings and banking deposits increased, mainly through remittances by migrants, investments in the directly productive sectors has been hard to come by and mostly directed instead to construction, conspicuous consumption of household durables or invested in small businesses. Private investments from outside the state, mainly in new-age areas within the service sector, have also been equally scanty. With a vast pool of educated human resource, among the females in particular Kerala can emerge as a destination for knowledge-intensive enterprises, which can release some pressure from the serious problem of educated unemployment. Sincere efforts from the government towards identifying and encouraging promising sectors and at the same time reviving traditional industries with an eye towards emerging markets both within and outside the country, can address the unemployment problem among women in the rural areas to a certain extent.

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