WOMEN PARTICIPATION IN ECONOMIC ACTIVITY AND THEIR EDUCATIONAL - OCCUPATIONAL STRUCTURE : A CASE STUDY OF SOUTHERN INDIA

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Female Participation in Economics Activity and Their Educational - Occupational Structure - A Case Study of Southern India

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We certify that the dissertation entitled "Women Participation in Economic Activity and Their Educational-Occupational Structure : A Case Study of Southern India", submitted by Miss Harish, in fulfilment of six credits out of the total of twenty-four credits for the Degree of Master of Philosophy (M.Phil) of this University, is to the best of our knowledge, her original work, and may be placed before the examiner for evaluation.

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Harish

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CHAPTER 1

WOMEN AND WORK

1.1. Introduction

Labour is an integral factor of development and variations in its quality as well as quantity affect the specialization and division of labour, and the market for goods and services. The utilization of labour force mainly depends on the supply and demand for labour. The total number of workers in labour supply is highly affected by the behaviour of the marginal groups particularly women with their dual role of housewife and worker, which not only are changeable but also intermingle in a subsistence economy.

The female participation in economic activity besides increasing total participation and output have other important implications. Firstly it tends to reduce fertility and population

growth, thereby raising per capita income and consumption. Secondly, women participation will result in their greater access to educational opportunities. Generally, education and training have largely been restricted to males, discriminating females with the assumption that investment on their education and training has a relatively low social and private returns. As a consequence of it women economic activity is at a low level. Realization of the fact that women can gainfully participate in economic activity will result in their greater access to education and training. Furthermore, benefits of education and economic activity participation would result in a better quality of young generation. The females are still expected to be informal educators, a role which the educated females can better fulfil.

Thirdly, female participation in economic activity affects the structure and operation of labour market. It is often argued that in low income countries, with excess labour supply, female employment would reduce employment available to males. The argument assumes that the labour is homogeneous and could/would be substituted without affecting wage rates or the level of employment. If women workers possessed desired skills which would otherwise be in short supply, their employment could help overcome structural manpower problem, thereby raising total investment and level of productivity. Moreover, to the extent employment is inversly related to the wage rates rising levels of female participation might raise total employment and lower average wage rates. This could be expected partly because

traditionally women are paid low and partly because there would be greater competitive pressure in the labour market.

Until recently, economic role of women did not attract much attention of social scientists primarily because of her dual role of worker and housewife, with the latter being dominant. As early as eighteenth century, eminent scholars (Mill[1], Marx and Engles[2]) stressed the importance of women's economic activity for their dignity and development. By the late 20th century economic role of women gained importance with the social scientists[3]. This shift in emphasis was due to various studies which clearly indicated the importance of economic role empirically.

Unfortunately, the importance of women's participation in socio-economic development has emerged not out of fundamental consideration but out of : (1) need to maximise output in growth models, (2) to reduce population growth and (3) to contain misery and discontent that interfers with productivity and growth.

The above discussion clearly points out that the economic role of women cannot be isolated from the process of development and calls for a better understanding of this issue. In this study an attempt is made to analyse the pattern of women participation in economic activity in relation to their

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1. Mill, J.S.; The Subjection of women (Cambridge 1970,MIT Press).
2. Mark and Engles; Women in G.D.R, Agust Bebels 100 years of women and socialism.
3. Boserup, E.; Women's Role in Economic Development (George Allen and Unwin, 1970).

occupational structure and educational attainment.

1.2 Women Participation In Economic Activity: Different Viewpoints

Debate regarding the problem of women's subordination and importance of her economic role always led to a stress on the importance of female participation in economic activity for the development of a nation. Dominant ideology considered men as bread winners and women as home - makers, and only in trying times as secondary bread winners. Mill[4] (1869, Classicals) remarked that the subordination of one sex by other is wrong in itself and one of the chief hinderance to development. Marx[5], Engels[6], Firestone[7] and others evoked discussions on the subordinate position of women, importance of her economic role and the variations in the intensity and form of subordination.

Marxian scholars maintain that nature and type of women's economic activity changes with a change in mode of production. In primitive societies women played principal role in production alongwith household functions[8]. Origin of family and private property diminished the value of women worker[9]. As a result of it "... emancipation of women and

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4. Mill, J.S.; op. cit.
5. Marx, K.; The Labour Movement in the U.S., New York, International Publisher 1947 pp. 385.
6. Engels, F; The Origin of Family, Private Property and State (1884) in Marx, Engels : Selected Works (1962).
7. Firestone, S.; The Dialectic of Sex, New York (1970) pp. 1-6
8. Stalin, J.; "Anarchism or Socialism", Women and communism (New Book Centre, Calcutta, 1978) pp 9.
9. Engels, F.; "Origin of family", women and communism (New Book Centre, Calcutta, 1978) pp.11

their equality with men are impossible and must remain so long as women are excluded from socially productive work and restricted to housework[10].

Marxian scholars believe that women's economic participation is largely affected by and is a result of the capitalistic family structure. Miranda and Saffot[11] argued that capitalists use women as seasonal, cheap labour largely because of their passivity in labour relations; a highly suitable factor for the capitalistic system.

Bebel[12] maintained the origin of family, private property, class structure and women's maternal role largely responsible for her exclusion from socially productive work. He visualised that in a socialistic mode of production women can re-enter the labour force.

A change in women's economic activity with a change in mode of production cannot be analysed independent of constraints of international economic system based on dependency. Boserup[13] asserted that due to colonial influence the female participation declined in selective areas (e.g. cash crop cultivation). Miranda[14] studied Brazilian economy and concluded that 'capitalism in dependent countries raises the levels of

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10. Ibid. pp. 225.

11a Saffot, N.B.; "Female Labour and capitalism in the United States of Brazil," Women Cross Cultural change and challange, Hague Houton and Co. (1975) pp. 89-94.

11b Miranda; "Women's Labour Force Participation in Developing Society: The case study of Brazil"in women and National Development: complexities of change ed. Wellesely Editorial committee (Univ. of Chicago Press 1977).

12 Bebel,A; Women in the Past, Present and Future.

13 Boserup, B; op.cit.

14 Miranda; Ibid.

unemployment which influence women more than men. She argues "if industrial capitalism relegates women to the periphery of the economy, the capitalism of the dependent nation makes their position more difficult".

De Beauvoir[15] tried to bridge the gap in Marixist analysis by considering the psychological element. Her theoritical innovation was to fuse economic and reproductive explanations. The feminists (Firestone[16], Mitchell[17] and others) argued that subordination of women resulted from biological differences and their participation in economic activity is the only solution. Feminists hold that period of dependence after child birth and nursing period made women economically dependent on men for large part of her adult life. They suggested removal of limitations of female biology with the help of measures like birth control, abortion and test-tube babies. The inherent weaknesses with this line of thought are:

(1) posting of simple caste system of male and female obscures class contradiction among women which is very prevalent (e.g. a son represents means of propogation of family name to a higher caste women while he is a symbol of old age security to lower caste woman).

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15. De Beauvoir, S.; The Second Sex, Harmondsworth (Penguin, 1978).
16. Firestone, S.; op.cit.
17. Mitchell, J.; The Longest Revolution.

(2) lack of particular analysis of social relations of production which led to idealistic solutions (e.g. abortion, test tube babies)

(3) historical facts and psychoanalytical approaches are not incorporated in theoritical models and search of solutions.

Reformists accept women's economic activity as important for nations development and assert that the women's subordination resulted from cultural-specific-social regulations. To counter this subordination women's economic activities should be enhanced (e.g. equal pay for equal work) within the existing system.

The preceeding discussion so far has elaborated that there is a general acceptance regarding the importance of women's activity for the development. The suggested means are varied but all lead to the reduction of women's subordination and promotion of her economic role.

1.3 Economic Development and Role Of Women

Of all the economic development induced structural changes urbanization and the industrialization are most important. Fischer[18] states that, "in every progressive economy there has been a shift of employment from the essential primary activities ... to secondary activities of all kinds and to a still greater extent into tertiary employment". A

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18. Fischer, A.G.B.; In unpublished paper 'urbanization and Industralization in Punjab and Haryana in 1971' CSRD/SSS, JNU, 1982.

simple agrarian economy with family as a unit of production and household industry as the major source of employment changes itself into a complex industrial society having individual as a unit of production. Investment per unit of labour increases with advancement in technology and longer training periods resulting in a proportional decline of workers. This decline would be much sharper for women workers as they form a marginal group which is more elastic to any kind of change. Important questions arising through discussion deal with production activities, occupation structure and their cummulative effect on women workers.

Boserup[19] concluded that women's status declines with decline in their productive roles during the transition from rural to urban industrial economy based on wage labour because their: (i) family obligations make them less mobile than their male counterparts, (ii) occupational choice is more narrowly limited by customs, (iii) educational and training aspects are less as compared to men and (iv) even without these handicaps they face discrimination in recruitment[20].

A 'u-shaped' pattern of female participation in course of economic development with decline occurring in the earlier stages of industrialization that are latter concentrated by the affect of increase in relative size of services sector and growth

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19. Boserup, E.; op.cit.

20. Boserup, E. in Preface to Women and National Development: The complexities of change ed. Willesely Editorial Committee (University of Chicago Press, 1978).

of white collar occupation, was proposed by other scholars[21].

Advance of technology in agriculture, industry and urbanization, resulting from economic development, displaces women workers and restricts their access to new jobs. During initial stages of development, the type of industries that are established, mainly textile and leather are labour intensive and provide employment to women workers. But when mechanization advances, employment takes a male-bias[22].

Chinchilla[23], on female employment, maintained that there are socio-economic conditions and sequential changes in occupation which resulted in sex-segregation in occupation. Industrialization, she argues, almost universally destroys or weaknens all the artisan industries which are usually in the hands of women. The employment of women depends on whether industrialization absorbs all displaced women workers from traditional industries, which in turn, depends on total political context in which it occurs and the extent to which it breaks down fuedal or precapitatistic relations, creates the demands for labour in the dynamic sectors of the economy and re-distributes wealth internally. Thus, the government policies for enhancing female participation cannot be as effective as socio-economic conditions of a society to which women forms a part.

21a Sinha, J.N.; "Dynamics of Female Participation in Economic Activity in Developing Country", in Proceedings of the World Population Conference, Belgrade 1965.

21b Harold, W.; Women's work: Economic Growth, Ideology, and Social Structure", Industrial Relations Vol 7, No.3, 1968, pp 238.

22. Laurdes, A.: "Women in the Informal Labour Sector: The Case of Mexico City," Women and National Development: The complexities of change ed. Wellesely Editorial Committee (Univ. of Chicago Press, 1977) pp.28-29.

23. Chinchilla, N.S.: "Industralization, Monopoly, Capitalism and Women workers" in Women and National Development/ Complexities of Change ed. Wellesly Editorial Committee (Uni. of Chicago Press) 1977

Urbanization is the key factor for the decline in female participation as the growth of industries destroys rural household industry without alternate employment opportunities to women workers (Ambannavar)[24].

Yossef[25], Collever and Langois[26] advocated an indeterminate relation between women's participation in economic activity and economic development. Development leads to reallocation of work force not only among the occupations but also within the occupations thereby resulting in an increase in female employment in some occupation and a reduction in others. Thus neither total participation rates nor the proportion of workers among females can be considered important from economic point of view as development does not increase the overall participation rate. It is only the increase in paid employment in some modern sector which increases with economic development. The relationship is indeterminate in the sense as it makes only reshuffling of female labourer in different occupations without increasing total female participation rate.

Considering certain type of occupations suitable for women, Gadgil[27], Smock[28], Boserup[29], De'Souza[30] and others

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24. Ambannavar, J.P.; "Changes in Economic Activity of Males and females in India 1911-61," Demography India 4(2), Dec 1975
25. Yossef, M.H.; "Social Structure and Female Labour-Force in Participation in Developing Countries", Ph.D. Dissertation in Sociology (University of California, Berkeley).
26. Colliver, A.: Langois, P.; "The Female Work-Force in Metropolitian Areas: An International Comparision", Economic Development and Cultural Change Vol.10(4) (1962) pp.65.
27. Gadgil, D.R.; Women in the working-force in India, (Bombay, Asia Publishing House) 1965, pp.26.
28. Smock, A.C.; "Determinents of Women's Role and Status" Eight Countries ed. Gille Janet, Zollinger and Andrey Chapman Smock.
29. Boserup, E.; op. cit.
30. De'Souza; "Implications of Occupational Prestige for Employment Policy in India", Artha, Vijanana, Vol. 1 (1959) pp.233-247.

argued that female employment depends on the availability of women absorbing occupations in a society. Do'Souza in 'prestige thesis' stated that women are generally employed in low-prestige occupations and increase or decrease in these occupations (with economic development) determines the level of female employment.

Weller[31] advocated that with economic development female participation in certain activities increases but often this increase cannot compensate for decline in female employment in traditional industries. Thus the 'long run' effects of industrialization may be good but 'short-run' effects is to lower female employment.

Above discussion makes it quite clear that, economic development in itself is a kind of bad news for women workers which led to either the withdrawal of women from work or pushed them to the backward sectors of the economy as women falls on the lower side of the productivity gap[32].

1.4 Women and Labour market

The nature of labour market is critical in influencing the women participation rates via enhancing or reducing sex - seggregation with the help of various means. Anker's[33] review

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31. Weller, R.H.; "A Historical Analysis of Female Labour Force Participation in Puerto Rico", Social and Economic Studies, Vol. xvii (March 1968) pp.60-69.

32. Boserup, E.; op. cit.

33. Anker, R.; "Demographic change and the Role of Women: A Research Programme in Developing Countries", Women's Role and Population Trends in the Third World ed. by Richard Anker, Mayra Buvinic and Nadia H. Youssef.

of productivity theory, overcrowding theory and Institutional theory with respect to sex-seggregation in urban labour market follows.

Productivity theory explains the pay differential in male and female workers on the basis of differences in productivity. Contrastingly, Papola[34] concludes that the pay differential is due to employers taking advantage of passive nature of women labour supply. By the overcrowding theory the low wages of the female workers can be explained due to their concentration in certain occupations. Institutional model differentiates between static and progressive jobs[35]. Generally, women are provided static jobs as the employers consider their productivity low and expects them to leave the job with increasing household responsibilities. Ranadive[36] holds that the special benefits (e.g. maternity leave) provided to women workers as the root cause for the providance of static jobs to them.

These varied approaches ultimately conclude that women are concentrated into specific low paid and low status jobs but a proper solution is still elusive. Ahmed[37] pointed out that even educated women are concentrated in lowest rungs of high paid occupations.

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34. Papola, T.S.; "Sex-Discrimination in Urban Labour Market: Some Proposition based on Indian Evidence", Women's Role and Population Trend in Third World Countries ed. by Richard Anker, Mayra Buvinic and Nadia, E. Youssef.

35. Status Jobs are those which require by skill and are not career oriented. Progressive Jobs are those which require special skills and are career oriented.

36. Ranadive, V.; Women workers of India, The Industan Times, 1975.

37. Ahmed, K.; "Studies of Educated Working Women in India: Trends and Issues", Economic and Political Weekly, Vol.XIV, No.33 August 18, 1979.

The fluctuations in wages invariably influence female participation rates. The women as secondary bread winner works only to supplement family income and her participation is expected to be positively related to her own wage rate, relative wages, job opportunities available and inversly related to income of husband or other family members. Banerjee[38], in a study on poor women workers of Calcutta, concluded that (i) supply curve of labour would be forward falling over a range with respect to wage rate and (ii) supply of women workers is negatively related with income of the family. Leser[39] suggested an increase in female participation rates with the equality of male and female wages. Doughlus[40] based his theory of wage on labour supply which declines with rising wages. He analysed that low wages were associated with high proportion of women workers in Britain during 1910-11, while in the same year high wages were associated with low proportion of women workers in U.S.A.

This purely economic approach cannot explain the paradoxical cases where high wages are accompanied by higher female participation rates (e.g. Rowntree and Lever[41]). With

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38. Banerjee, N.; Women works and Development.

39. Leser, C.E.V.; "Trends in Women's Work Participation", Population Studies, Vol.12, No.21, Nov. (1958) pp.100-110.

40. Douglus, P.H.; Theory of Wages (New York, 1957) pp.272-74,290.

41. Rowntree, B.S.; Lever, G.R., Poverty and Welfare State, (London, 1951).

such conflicting views it is imperative to find other factors responsible for women participation in economic activities.

1.5 Demographic factors and role of women

The census data shows that tendency to participate in labour force varies with the variations in demographic factors. Women participation in non-domestic work varies with her marital status, dependency ratio and age. Generally married women work less than unmarried, widowed and divorced ones. Among the married women those with smaller children are less likely to work than the mother of older children and those without children[42].

Ridley[43] proposed a 'u' shaped curve for female participation in relation to demographic transition which run parallel to economic transition. She argued that in a pre-industrial society, high mortality among children forced the women to be occupied with her reproductive role. Women's work participation was not much affected as economic activities were carried at home, which enabled women to combine her reproductive role with work. Modernization and development led to shifting of work from home to factory. Menfolk easily transferred to factory because of their miniscule reproductive roles whereas womenfolk found it difficult to adjust as their reproductive role interfered with their productive role. Improvement in socio-economic conditions alongwith reduction in

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42. Sanding, G.; Labour Force Participation and Development (1978) ILO, Geneva.

43. Ridley, J.; "Demographic change and the Role and Status of Women", The Annals of American Academy of Political Social Sciences 75 (1968) pp. 15-25.

A negative association between fertility and women participation rates probably explains the higher participation rates among mothers of older children. Bancroft[48] study (America, 1948-67) showed that participation rates of mothers with smaller children increased much than the participation rates among the mothers of older children. Durand[49] asserted that decline in fertility and women's work participation rates are related to each other but casual relationship is not so simple because these tendencies may be caused by factors like desire for higher standard of living and more independence. Thus the demographic factors are very useful in understanding women work patterns but their limitations make the consideration of socio-cultural factors very important.

1.6 Socio-cultural factors and role of women

The changing socio-cultural conditions have a greater influence on the participation rates of the women workers (the marginal workers). Isolation of the variables affecting women participation rates directly or indirectly is difficult but certain factors of special relevance can be easily picked out. Some of the these are - family structure, caste, religion, literacy and levels of education.

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48. Bancroft, G.; The American Labour-Force, John Wiley and Sons (New York, 1958) pp. 54.

49. Durand, J.D.; "Married Women in the Labour Force", The American Journal of Sociology III 1946 pp 217-223.

(A) Women work and family structure:

Assuming women's primary responsibility as home and immediate as family sociologists advocated that female participation in non-domestic work depends upon the compromise between family and economic system. Further, women's participation depends not only on existing socio-economic conditions but on the existing social institution particularly the family system. A study by Madras School of Social Works[50] concluded that joint family system is conducive to female working outside as it provides at least some of the women free from the responsibilities of household and child care. Hate[51], however believes that nuclear family, by putting more responsibilities on women, enhances women participation in non-domestic work.

Considering adjustment between family responsibilities and economic status, Callver and Langlois[52] arrive at the following pattern of women work participation:

(i) pattern typical of highly industrialized countries where good wages and desire for higher standard of living, alongwith the persisting notion of women's place in home, puts an upper limit on female participation in economic activity. Women remains active economically either through postponement of their marriage or by working until married couples start having children,

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50. Madras School of Social Works; Working Mothers in White Collar Occupations', Madras (1970).

51. Hate, C.K.; Changing Status of Women, (Bombay Publishers, 1969).

52. Callever, A.; Langlois, E.; (1962) op.cit.

(ii) a Latin-American pattern characterized by low non-domestic participation rate by females,

(iii) a Carribbean pattern with high female participation rates, weak and unstable family system with high illegitimacy rates, give rise to the need for many women to be self sufficient,

(iv) an early marriage and female seclusion pattern typical of Muslim countries of Middle East. The women participation rates are quite low due to various reasons like early marriage, exclusive devotion to husband and children and prohibition of public activity.

These patterns are encountered in the diversified regional economy of India along with two exclusive patterns namely (1) scheduled caste Indian pattern and (2) poor class Hindu pattern. Women participation in these patterns is quite high due to lack of taboos on women's economic activity and stronger economic needs.

(B) Religion

Religion plays an important role in deciding women's rights and obligations in society and especially in Indian conditions where a wide variety of religions exists.

Christian females are expected to have highest participation rates contrary to Muslims, with lowest

participation rates (Madras School of Social Works[53], Hate)[54]. Former study concludes that christian place fewer restrictions on women's activity. Consequently higher education and training improves the chances of Christian women's employment. Hate,[54] argues that Christians don't have a joint family system which necessciates women's work for supporting themselves. Low participation rates of muslim women are attributed to conservatism. in both the above mentioned studies.

Dube[55] on social pattern of Andhra Pradesh lists four main social groups: (1) 'purdha' observing non-working women, (2) local cultivator females restricted from outside work, (3) lower caste women assisting family farming, who work out side in trying times and (4) low caste poorest women workers as regular wage earners. Presence of last two groups, enhance female participation rates. Emperical studies of Tripati[56], Burdhan[57] and others conclude that Scheduled Caste Tribe women participate in economic activities more than the women of other castes. Studies of Mehta[58], Gore[59] and Ross[60] clearly indicates that upper caste females (even older ones) do not

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53. Madras School of Social Works, op.cit.
54. Hate, C.K.; op. cit.
55. Dube, S.C.; "Indian Village" London (1936) pp. 174-75.
56. Tripati, B.L.; "Female work participation in Rural Area" Indian Journal of Labour Economics, April-July 1978.
57. Burdhan, P.K.; "Labour supply Function in a Poor Agrarian Economy", American Economic Review Vol.69, No.7, March 1979.
58. Mehta, R.; "The Western Educated Hindu Women", Asia Publishing House, Bombay (1970).
59. Gore, M.S.; "Urbanization and Family Change", Popular Prakashan, Bombay (1968).
60. Ross, F.; "Hindu Family in an Urban setting, Oxford University Press (1961).

get their husband's approval to work outside. Srinivasan[61], points out that with modernisation and Sanskratisation* these non-static patterns may change. Sanskratisation of a caste leads to the immediate withdrawal of women from work as it is not considered prestigeous among high class to which they imitate and result in decline of women's participation rates. The culture of a particular region also affects work participation of women as Raju[62] explains, "lower class women do not operate in cultural vaccum and their behavioural norms are very much conditioned by regional framework".

(C) Literacy, Levels of Education and Women Work Participation Rates

Literacy is considered as an eventual factor influencing the women's decision to join the labour-force. Normally, with decrease in literacy, female participation is also expected to increase. Quite paradoxically, in developing countries, an increase in literacy is accompanied by a decline in female participation rates. Because with increased literacy, women's expectations about jobs increase and they prefer not to work in the industrial sector and household industries as earlier. Simultaneously, they lack required education and training for

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61. Srinivasan, M.N.; "Changing Position of Indian Women", (Oxford University Press, 1978).

62. Raju, S.; "Sites in the city: A Socio-Geographic Analysis of Female Employment in Urban India", University of Cyracure, Discussion Paper, 1961.

* Sanskratisation consists of emulating upper caste norms and modes of behaviour, restricts the women participation in economic activity, especially in rural areas.

jobs sought, consequently the total participation rates decline. This view is supported by emperical works of (Nath[63] and Singh[64]) based on Indian census data for 1961 and 1971 respectively.

In most of the developed nations, with an increase in levels of education, female participation also increases[65]. But in most of the developing nations a non-linear relationship has been observed by Sinha[66], De'Souza[67] and other. De'Souza explained the non-linear relationship between the level of women education and their participation rate in terms of status consistency. Accordingly at lower levels of education, most of men and women are illitrate which provides some kind of jobs. At middle level the disparity between men and women's education increases because comparatively women education is neglected which leads to women refraining from economic activity. But at higher level, gap between men and women education may be reduced, and therefore women work at parity.

De'Souza's hypothesis may be true in urban areas but with low access to education and agriculture being the dominant activity it is not directly applicable to rural areas. The emperical relationship between women's education and participation rates for the states under study is dealt later in Chapter III.

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63. Nath, K.; "Female Work participation and Economic Development", A Regional Analysis, Economic and Political Weekly May 23, 1970, pp.846-849.

64. Singh, A.M.; Rural, Urban Migration of Women Among the Urban Poor in India: Causes and consequences, Social Action, 28 (October-December 1978) pp.382.

65. Standing, G.; op.cit.

66. Sinha, J.N. op. cit. pp.337.

67. De'Souza, V.; Implication of Occupational Prestige for Employment Policy in India, Artha Vijnana, Vol.I (1959).

Conclusion:

The theoritical implications of the problem of female participation in non-domestic work conclude that problem is quite complex and any simplistic conclusion drawn may be misleading, so the different views can be taken complementry. Moreover, the straight forward application of western theories to the developing nations may result in wrong planning and policy decision as factors affecting female participation rate in them are quite different.

1.7 Indian Situation

The locale of study is an integral part of India and imperatively the India situation is reviewed below:

(A) Women workers in Indian Labour force:-

The role and status of women in India forms an integral part of the prevailing socio-economic structure. Gadgil[68], studied the native and extent of women's participation and impact of development on them. Labour Bureau Publication 'Economic and Social Status of Workers in India' focussed on the various legal measures for the protection and welfare of women workers. The economic role of women has been dealt only in a few studies namely Mitra[69], Sinha,[70], Ambannavar[71] and some demographic works available are at very aggregative level and need disintegration at sector and region level.

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68. Gadgil, D.R.; (1938) op. cit.
69. Mitra, A.; Census of India, 1951 Vol.VI, West Bengal, Part I-A pp.526.
70. Sinha, J.N.; The Indian Working Force- Its Growth and Changing composition - Census of India 1961, Vol.I.
71. Ambannavar, J.P.; (1979) op.cit.

(B) Trends in women work participation:

Contrary to trends in western industralized and communist countries, work opportunities and participation rates in India have been declining steadily over the last few decades (Gadgil[68], Mitra[69] and Sinha[70]).

The Planning Commission[72] reports on women's employment and issues of replacement during 1901-1953 observed disappearance of many traditional women occupations concurrent with Mitra and Sinha. Ambannavar[73] used census data with methodological sophistication for the trends in employment of men and women and classified the industries into women absorbing and women rejecting categories. He observed the women's falling share in non-agricultural activities in general with the exception of a few industries, this theories about the growth of technology and stagnation were not supported by valid statistical basis.

Acharya[74] with refined tools for the indication of technical change (capital accumulation, captal intensity) laid bare the shifts in industrial structure during 1950-74. These secular shifts eliminated many women suitable jobs and inadequately provided the replacements. Extension of the study

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72. Planning Commission (1958); "Women in Employment 1901-56" Government of India.

73. Ambannavar, J.P.; op.cit.

74a. Charya, S.; "Employment of Women and Men in India: A Historical Review 1901-1051", The Indian Journal of Labour Economics, Vol. XXII, No.3 Oct.1979.

b. Acharya, S.; Transfer of Technology and Women Employment in India," J CSSR Programme of Women's Studies(mimeograph).

to 1901-51 period concluded that decline in female participation rates are the result of slow economic growth and nature of technology.

Decline in household industry with the growth of modern industry has been held responsible for the decline in women participation rate (Mitra, Shrimany and Pathak[75]). The reason for decline in household industry is also due to the sagging demand among poorer sections of the community, accentuated by the period of bumper production when the fall in prices of agricultural produce does not always compensate the larger output sold and the increased input prices. These factors, perhaps, have been responsible in recent years for the erosion of staying power among the major lower deciles of the population and struck at both rural and urban household industry (Mitra)[76].

The increased prosperity due to growing commercialisation of agriculture and introduction of new technology led to the voluntry withdrawal of women from economic activity. This decline can be attributed to (i) growing prosperity decreased the need for women's supplementry income and (ii) growing commercialization and technological advance needs more intensive labour of men.

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75. Mitra, A.; Shrimany, A. and Pathak, L.P.; "Status of Women Household and Non-Household Economic Activity" (Allied Publisher, New Delhi 1979) J CSSR Programme of Women's study.

76. Mitra, A.; "The Status of Women, Literacy and Employment" J CSSR, Allied Publisher pp. 52.

77. Sinha, J.N.: "Female Work Participation: A Comment" Economic and Political Weekely, 10(16), April 19, 1975

Sinha[77], explains the decline in female labour force in 1971 due to "statistical aberration caused by inadequacy of conceptual basis for differentiating workers and non-workers". N.S.S. Surveys and other researchers show that the impact of change in definition is marginal and declining trend is continuous one. Mitra's (1971)[78] studies linked falling female participation rate to mortality and literacy and provide irrefutable evidence of the "erosion of female participation in the vital income and wealth producing sectors of the economy". He traces the undervaluation of women (high female mortality and excessive child bearing) directly to this loss of employment and inadequate access to education. Mitra's analysis of secular trends put to rest the "definitional controversy" and "voluntry withdrawl" of women hypothesis.

Majumdar[79] rejects the belief, that female participation has been increasing and attributes it to middle class bias which is most apparant in our understanding of female participation in economic activity.

The relationship between women participation and stages of development has been considered by Sinha[80]. Most of these these studies appear to say, "given the existing sexual division of labour and women's position in societies" nonbalances in demand side creates serious loss of employment for women more

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78. Mitra, A.; Implications of Declining Sex-Ratio in India's Population" Allied Publishers (1971).
_____: The Status of Women, Literacy and Employment.

79. Vina Majumdar, "Status of Women". Demography India 4(2) pp. 258-64, 1975.

80. Sinha, J.N. (1965); op.cit.

than men, focus turns to cultural moves and lack of skill required by modern industry - i.e. supply side - which inhibits the women employment[81].

Modernisation and development has been considered as an important factor to explain the decline in female participation[82]. However Gail Omvedits[83] holds that, in case of India underlying process for decline of female participation is not of modernisation and development but it is seen more accurate to define it as stagnation of colonial and new-colonial economy.

From the above discussion regarding the trends in female participation rates one may say that this is basically due to technological advancements in both agriculture and industry.

(D) Regional variation in Female Participation Rate

Analysis of Indian census occupational data shows wide regional variations in female participation rates by industrial sectors in contrast to male participation rates which varies a little. Moreover female participation rates in rural area are always higher than in urban areas. Field surveys, cross- sectional studies and inter-temporal studies

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81. Banerjee, N.; "The Bengal Experience", Seminar Paper Women's work and Employment, Institute of Social Studies April, 1982.

82. Report of Committee on the Status of Women in India (1974) ICSSR, Government of India.

83. Omvadit, G.; "Women and Rural Revolt in India", Social Scientist 6(1), 1977 pp.3-18.

have been attempted for analysis of regional variations. But these attempts analyse gross aggregated data at state level and obscure sub-regional variations resulting from highly localised historical and cultural conditions or to study special cases with little attempt to co-ordinate these two.

According to Boserup[84], variations in women employment in traditional societies is a function of the existing agricultural economy. Her results for explanation of variations has been questioned by Raju[85], who points that this relationship is obscured in the contemporary Indian situation. Women are seggregated in some wet rice growing areas such as Bihar and are more actively employed in certain areas of dry field. Cultivation such as southern Deccan where the task of transplanting, which is traditionally associated with female, is done by males. Thus the cultural factors seems to be important in explaining the variations at regional level.

The other plausible argument often considered to explain regional variations in female participation rate is sociological in nature. By comparing different regions, De'Souza[86] has shown that the rate of women workers varies with socio-economic development and the percentage of people engaged in tertiary sector. Comparatively the participation rate of women workers is low in

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84. Boserup, E. (1970) op.cit.

85. Raju, S.; (1961) op.cit.

86. De'Souza, V.; 'Changing Socio-Economic Conditions and Employment of Women in India', Trends of Socio-Economic Change in India 1871-1961, Transactions of Indian Institute of Advanced Study, Vol.VII, Simla , 1969 pp. 443-457.

developed areas where more people are engaged, in primary and secondary activities while it would be lower in developed regions where more people are engaged in tertiary employment. Basis of his argument is that the family is status unit and status of all the dependent members of household is determined by the occupational status of head of household. As long as there is only one earner- there is no problem of status consistency but when men and women both work, the prestige balance of the family may be disturbed. On the basis of this he further said that in a less developed region both men and women, are usually engaged in unskilled jobs of lower prestige without disturbing the status consistency of the family. But in relatively developed regions where there are more occupation of higher prestige, women usually withdraw from work because lack of education and skill prevents them from getting the jobs of equal prestige to their husbands. Hence, the general socio-economic development has a depressing impact on women workers.

De' Souza's hypothesis seems to be very sound but doubts remain there whether women withdrawal is exclusively related with the prestige of the household. In this regard, Singh[87], argued that women do not discontinue work even if the income of their husbands have increased.

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87. Singh, A.M.; "Women and Family: Coping with Poverty in the Basti of Delhi" in Indian City: Poverty, Ecology and Urban Development (ed.) A.De'Souza (Manrov, Delhi 1978) pp. 77-78.

A few macro- and micro-level studies shows the negative influence of income on women participation rates. Dantwala[88] from his Bihar and Gujarat surveys concludes that unemployment and employment vary with need for income and heavy responsibilities of women at home prevents their fuller participation. Irrigated area's shows a lower participation rates than unirrigated areas[89]. Jain's[90] study in the milk producing village of Kaira district shows that participation of females are lowest among land-owning big cultivators and are highest among non-land and non-buffalo owning poor cultivators.

Gulati's[100] study on inter-state variations in female participation and others on similar lines gave no conclusive result. These conclude that because of time and space variations different factors predominates. Kale[101] offers a new clarification with respect to regional variation studies. Considering agricultural tasks in Kerala, she draws a distinction between the distance over which women's work is allowed and beyond which it is considered "public sphere", thus emphasising cultural factors.

Omvedit[102] rejects these explanations of regional variations by stating that "where agricultural productivity,

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88. Dantwala, M.L.; "A Profile of Poverty and Unemployment In India", Agricultural Economics, Vol.No.2.

89. Parthasarathy, G., Rama Rao, G.D.; "Employment and Unemployment of Rural Labour and The Crash Programme, Andhra University Press, Waltair, 1974.

90. Jain, D.; "Women's Quest for Power"(Vikas Publishing House, Ghaziabad, 1980) pp. 100-101.

100. Gulati, L.; "Female Work Participation : A Study of Inter-State Differences", Economic and Political Weekely, Vol.X Nos.1, and 2 January 11, 1975 pp.35-42.

101. Kale, C.V.; "Female Participation in Farm Work in Kerala", Sociological Bulletin (125) Jan-Feb. 1976.

102. Omvedit, G. (1977) op.cit.

income and wage rates are low, female work participation tends to be high, simply because women of the poorest families are forced to work irrespective of male desires". He further emphasised the importance of cultural factors in explaining variation in female participation rates: the north and north-east, highly effected by Islamic culture tends to have lower participation: West Bengal and Punjab have the lowest female participation in India, though one is improvished and mainly rice growing state, the other a 'show-piece' of wheat based green-revolution.

No causatory mechanism is identified, thus, because most of the explanatory variables are multi-collimar. The logic becomes circular as the deduction is made from post-facto situations.

Inter-temporal analysis of variations comes off some what better (Chopra: ICSSR)[103] studies trends in female labour force participation as between dry millet, wet coastal and modern technology applying wheat growing areas. Analysis is in terms of value of agricultural produce per acre, value of agricultural produce per worker, land-men ratio, concentration of land holdings, proportion of schedules caste and scheduled tribe population. The only consistent result was few rice growing areas where irrigation and increased output increased demand for female labour. Several other studies[104] conclude that the major

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103. Chopra, K.; "Female Work Participation in Three Crop Regions of India - An Inter-Temporal study of Rural India 1951, 1961, 1971" Occasional Paper, J.N.U. CRD/SSS

104. Paul, J." The Low Female Participation Rates and Related Issues - Observations based on NSS- Seminar Paper, Institute of Social Studies Trust (April 1982).
Ghosh, B., Mukhopadhyaya, S.; Sources of variations in Female Participation Rates: A Decomposition Analysis" Paper for the Seminar on "Women's work and Employment" Indian Social Studies Trust 1962.

factor for lower female participation is slow rate of economic growth and secondly "displacement" of female labour effect is greater than the "institution" effect.

Rayappa and Grover[105] using census data, survey data and other documentry evidence postulate a 'u-shaped macro level model. For the rural areas age- specific participation rates undergoes a greater variations than in urban areas. When analysed by age, between rural and urban areas, urbanisation declines women participation rates. No consistent pattern emerges from Indian census data. Broad admissible factors appear to be urbanisation and level of education. Poverty and caste turns out be major determinents of participation in villages.

Conclusion: The foregoing discussion points to a growing interest about women workers in India. There is a strong paucity of micro-level studies based on field survey to test the validity of earlier studies. The published works cited could not adequately disclose the link between women's economic role and their subordination and leave us with a paradox: "earlier we had high female participation within a subordinating family and social system; now we have low female participation within an increasingly subordinating family social system." The temporal studies as well as variation studies suffer from methodological problems as the explanatory variables are multi-collinear and fail to explain causatory mechanism.

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105 Rayappa, H.P.; Grover, D.; "Modernization and Female Work Participation," Demography India No. 1282, 1978.

1.8 Objective and Hypothesis of the study

Keeping in view the existing literature and the problem under study following objectives and hypothesis have been formulated:

(A) Objectives: Main objectives of this study can be listed as:

(1) to investigate the nature and extent of education - (total) and specific female participation rates in the rural and urban areas,

(2) to analyse the nature and extent of education - specific participation rates in three main sectors primary, secondary and tertiary - of the economy,

(3) to identify the various factors which are likely to be responsible for variations in female participation in economic activity. An attempt has also been made to test certain hypothesis.

With these objectives, an analysis of female work participation has been carried out in the four Indian states - Andhra Pradesh, Karnataka, Kerala and Tamil Nadu - at district level separately for rural and urban areas.

(B) Hypothesis:

It is noteworthy that for identifying the factors responsible for variations in female participation rates, the separate indicators are choosen for rural and urban areas, hence separate hypothesis have been developed for them.

(1) Manufacturing Establishments* per 1000 of female population (in urban areas only) are expected to enhance female participation rates via providing more employment opportunities to women workers.

(2) Growth of agricultural output (rural areas) generally implies higher income for peasents which would lead to withdrawal of women from economic activity.

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*Manufacturing Establishments counts of household industries, registered and unregistered factories.

(3) Agricultural development in terms of (rural areas) mechanization, higher cropping intensity and better irrigation would have a negative impact on women participation.

(4) A higher concentration of holding shows a concentration of wealth in fewor hands which would lead to the withdrawl of their female workers (cultivators) and would enhance the employment of wage earners (agricultural labourers) to substitute family workers. This in turn would raise the total female employment.

(5)(i) A high proportion of workers in household industry would enhance urban female participation rate while a high proportion of workers in other services would dampen urban female participation rate (urban areas).

(5)(ii) A high proportion of workers in primary sector and secondry sector are expected to be positively related with women participation in economic activity and a high proportion of workers in tertiary sector is expected to be inversely related with proportion of workers among females.

(6) A higher proportion of children below 5 years of age to the women in age group 15-49, by consuming women's maximum time, would reduce their participation in economic activities. However, in rural areas, the child bearing and rearing may not necessarily reduce women participation rates.

(7) Female heads of households are usually found where the male members are absent due to migration, divorce, widowhood and rural monogamous patterns and a higher proportion of them is expected to have a positive impact on women participation rate as participation in economic activity becomes essential for them to earn a subsistence.

(8) A higher proportion of urban population would be having a negative impact on women work participation rates (urban areas).

(9) A higher proportion of scheduled population among females would enhance women participation rates.

(10) Cetrius-peribus, a higher percentage of married among females would, reduce total women participation rates whereas a higher percentage of widowed/divorced/ separated females would enhance female participation rates.

(11) Literacy is expected to have a negative impact on women work participation rates. A positive relationship of women workers is assumed with lower and higher levels of education and inverse relationship is expected at some intermediate level of education.

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primary, and secondry and tertiary - have been derived from industrial categories given in census, 1971. Finally an effort has also been made to examine the influence of various explanatory variables which are likely to influence female participation rate and cause spatial variation in it. To help achieve this, a zero order correlation and regression (stepwise and multiple) has been tried for states under study for rural and urban areas separately and for the Southern Region.

2.2 Definition of term worker

Following 1971 census definition, each and every individual was first categorised into worker and non-worker on the basis of his/her main activity. A worker was defined as a person - whose main activity was participation in any economically productive were by his/her physical or mental activity. Term 'work' includes not only actual work but also effective supervision and direction of work. Thus, work constituted participation and implied production of goods and services either for consumption or for exchange. The reference period was one week prior to the date of enumeration in the case of regular work in trade, profession and services etc. But in case of seasonal work, a person's main activity was decided with reference to last one year even if he was not economically active in the week prior to enumeration. Non-workers consisted of all those whose main activity did not involve any economically productive work.

The literate female population has been divided into 3 categories:
(i) upto primary
(ii) above primary and below secondary, and
(iii) above higher secondary

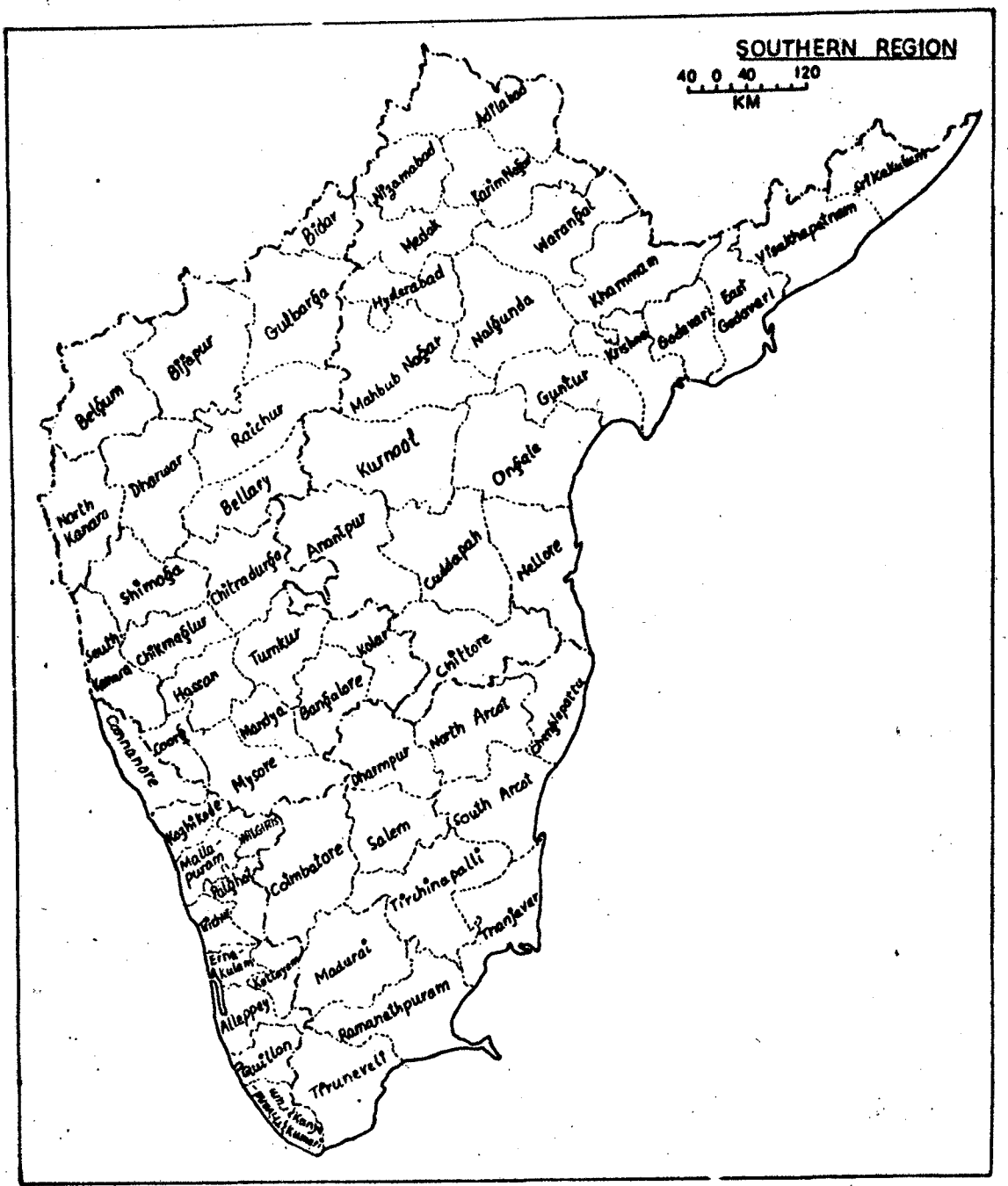

FIG. 1, LOCATION MAP OF THE STUDY AREA.

2.3 Study Area

This study covers Andhra Pradesh, Karnataka, Kerala and Tamil-Nadu all the four states of South India. The study area is selected because of the fact that first, it provides diversity in terms of educational attainment of females, their participation in economic activity and occupational industrial complexes of Bangalore, Madras and tribal districts of Andhra Pradesh. Secondly the economic diversification resulted by the diversified geographical landscape, climate and agriculture, will also reflect varying nature of female participation in economic activity. Detailed analysis at district level for rural and urban areas separately is attempted in order to make a meaningful study. A detailed account of the four states under consideration follows:

A. Andhra Pradesh

Andhra Pradesh is the fifth largest state in area. It consists of three natural regions namely Telengana, Reyalseema and coastel region. The state has the highest proportion of women workers. Based on 1971 census data, around 11 percent of urban and 27 percent of rural females are gainfully employed, that place Andhra Pradesh second in India. The Andhra Pradesh is having lowest proportion of literate females among all the states under study. Rural and urban literacy rates are quite low as compared to all India average (Table II).

Except in few coastal districts, Andhra Pradesh remained resistant to green revolution. Growth rate of agricultural out put is very low and is negative in a number of districts. Overall growth rate of agriculture is almost zero. State is having a high index of agricultural modernization (0.93) and high concentration of holdings (Gini co-efficient for concentration of holdings is 0.59). Low level of literary in the state results in high proportion of workers among females in the age group 5-14.

The levels of organization is low in the state (18%), sex ratio* in urban areas is lower than in rural areas, a consequence of male selective out migration, high infant mortality and mortality among women in child bearing age group. Proportion of female heads of households in the state is quite high. Hindu religion is predominentlyprevailent followed by Islam and Christianity.

B. Karnataka

Karnataka can be divided into three regions namely coastal, the mainland and the rolling eastern plateau occupying the bulk of state area. The region has low proportion of workers among women (15.7% rural & 9.1% urban). The level of literacy is good (14% rural and 42% urban).

Though land constitutes the biggest natural resources of Karnataka, the state did not gain much from green revolution.

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*Sex-ratio is defined as the number of females per 1000 males.

The growth rate of agricultural output during 1962-65 to 1970-73 is very low and even negative in some of the districts like South Kanara, North Kanara, Gulbarga. Hardly one-tenth of the total cropped area is of this region is benefitted by irrigation. The state is having a high concentration of land holdings (Gini co-efficient of concentration of holdings is 0.53) with a relatively high index of agricultural moderanization.

The state is having a fairly high level of urbanization (24% population in urban areas). The child-women ratio in this state is highest among all the states under study and this probably explains a lower women participation rate. A higher proportion of Muslim women among total women population in the state may be another reason for lower female participation rates as they are best expected to participate in economic activity due to cultural reasons.

C. Kerala

Kerala, a littoral state, is situated in the south of the west coastal plain and lies to the south of the coastal plain of Karnataka. The state is having highest proportion of female literates in India. Kerala has maintained its first position in female literacy in 1981 too. Inspite of this fact the state is having a low proportion of gainfully employed women.

Kerala is a region of both subsistence and plantation agriculture. A little more than half of the land is devoted for agriculture and almost one third of net area sown is cropped more than once. Though nie is a dominent crop, it is sown only in about 30% of the total cropped area. Characterised by a high

index of modernisation, the region has a lower concentration of land holdings (Gini co-efficient of concentration of holding is .559).

Kerala, although, is most densely populated state of India, yet the proportion of population residing in urban areas is quite low (Table II). One of the most important features of the state is a favourable sex-ratio, which can be explained in terms of matrilineal society in Kerala particularly among Nairs, and thus better position of women enables them to place equal values to sons and daughters. Moreover the state has a male selective out-migration.

The state also earns the credit of having highest proportion of female heads of households among all the states under study. As far as religion is concerned, the state is having a fairly large proportion of Christian women population relative to all other states under study.

D. Tamil Nadu

Tamil Nadu is situated to the east of the Cardamom Hills and south of the Karnataka plateau. The state is having a lower proportion of economically active females.

Agriculture is one of the most important economic activity in this state. More than 66 percent of the area is under food grains and paddy is the main crop of the region.

The state is better placed with regard to level of urbanization. Proportion of scheduled castes and scheduled tribes in this state is highest among all the chosen states.

2.4 Data source, coverage and limitations

The study is mainly based on secondry information available from 1971 census for the states under consideration.

Data for female workers in nine industrial categories* by levels of education is computed from the economic tables - Part II B(i) and Part II B(ii) - for all the states under study.

Data on sex ratio, literacy and urbanization are collected from primary census Abstract i.e. Part I A.

Socio- cultural tastes - Part II C(i) and Part II C(ii) - are used for the data on female heads of households, marital status, scheduled castes and scheduled tribes females, and religion-wise distribution of women population.

Agricultural indicators like cropping intensity, irrigated area, index of agricultural modernization ove their source to "A District-wise Data Profile by J.N.U. - Planning Commission Project[2]. Index of agricultural modernization is worked out from three ingredients i.e. number of tractors, number of pump sets and fertilizers per hectare of land. The

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1. Nine Industrial categories in census are:
   (a) Cultivators
   (b) Agricultural Labourers
   (c) Livestock, forestry, fishing, hunting and plantations, orchards and Allied Activities.
   (d) Mining and quamying
   (e) Mining actrering, Procering, servicing and repairs (a) Household industry (b) other than household industry.
   (f) Construction.
   (g) Trade and Commerce
   (h) Transport and Communication
   (i) Other Services.

2. A District-wise Data Profile by J.N.U. - Planning Commission Projec

computed data for growth of agricultural output and gini co-efficients of concentration of holdings is collected from the book "Population, Food and Land Inequalities in India : A geography of Hunger and Insecurity"[3]

2.5 The limitations of study

Limitations mainly arises from the inherent difficulties to determine whether a women is worker in strict sense of the term. A women assisting her husband in economic activity occasionally without any remuneration in cash or kind is not regarded as a worker in census. Sometimes because of social prejudice women may not be reported as worker by the respondent, even when, she might actually be engaged in gainful employment. And even if a women is enumerated as worker, in many cases, it becomes difficult to determine to which industrial category she belongs e.g. the wife may be working in some household industry and simultaneously assisting her spouse in cultivation[4].

Moreover due to a change in the definition of worker in 1961 and 1971 census, the data on female workers for both these periods is not comparable (including the adjusted date and 1972 re-survey date). Hence, trend analysis is difficult which would otherwise have been more useful. Therefore the study is a cross-sectional study based on 1971 data.

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3. Asok Mitra and Shekhar Mukherjee, "Population Food and Land Inequalities: A geography of Hunger and Insecurity, ICSSR/JNU/FPF study Allied Publishers, Delhi (1980).

4. Ahandara, R.C.; "Female working force of Rural Punjab", Manpower Journal 2(4), January-March 1967 pp.48-49.

Besides, whatever data is there it is not available in time due to long processing time. Usually the processing time exceeds 10 years or so after census and reduces the utility for researchers and policy makers. This study excludes 1981 census data, which is not published as yet (except preliminary information).

However, it is argued that above mentioned limitations will not have any serious impact on the study since our major emphasis is to examine the educational - occupational relationship and inter and intra- state variations in participation rates.

2.6 Analytical Framework

A wide number of factors influences the female participation in economic activities. This study tests some of these factors under three broad headings namely Economic, demographic and socio-cultural.

(a) Economic indicators demographic and Socio-cultural Indicators

Certain ~~xxxxxx~~ indicators tend to influence female work participation rates in rural areas only while few in urban areas only and some other in both rural and urban areas.

The indicators have been selected in the following order: influencing rural area, influencing urban area and finally the common indicators.

Agriculture being the main activity in rural areas employs bulk of rural women workers and thus consequently most of the indicators selected for rural areas are related to agriculture.

(b) Basis for the Choice of Indicators:

Selection of indicators is based on the idea that women are the part of a big society and, therefore, their participation in economic activity depends on the structure of socio-cultural and economic demographic conditions prevailing in a society.

Economic Variables:

As Reddy[5] points out ... inter regional variations in female activity rate are firmly rooted in differences in agriculture factors. Any adequate variation in female participation rate should be viewed from the root cause of the problem.

Number of manufacturing and processing establishments are taken as an indicator of number of industrial units (data for industrial units at district level was not available). These establishments per 1000 of women workers (X_1) shows upto some extent the employment opportunities available to women and their impact on women work participation rates. Sectoral distribution of women workers in primary, secondary and tertiary activities (X_2-X_7) urban and X_2-X_5 in rural determine the type

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5. Reddy Narshima, D. (1975), pp. 904.

of work available to women and its impact on total female employment. Growth rate of agricultural output in rural areas (X_6) over a period 1962-65 to 1970-73 is taken as a proxy for higherincome. And as women are expected to work for supplementing income, there participation rates may be effected negatively with increased agricultural output. Cropping intensity (X_7 in rural areas), levels of irrigation (X_8 in rural areas) and index of agricultural modernization (X_9) determines the demand for labour. These factors increase the labour-demand but renders the agriculture male selective as the new techniques are generally literacy and skill oriented and therefore reduce the female participation rate. Concentration of holding (X_8) are also expected to determine the demand for labour but its impact is expected to be different for female cultivators and female agricultural labourers.

(c) Demographic Variables:

Demographic variables selected are sex-ratio, urbanization, child-women ratio etc. Sex-ratio, to a large extent, determines the availability of women workers in a region and, therefore, the total female employment in a region (X_8 in urban and X_{11} in rural areas). Urbanization (X_{10} in urban areas) is choosen to work out the impact of modernisation and industrialization on the economic role of women. Child-women ratio is choosen to look at the impact of children on women's non-domestic work (X_9 in urban and X_{12} in rural areas).

2.7 Methodology

To determine the factors responsible for variations in female participation rates and spatial variations following techniques have been utilised:

(1) Visual representations depicting education specific female participation rates and distribution of women workers among primary, secondary and tertiary sectors of economy,

(2) Zero-order correlation co-efficients have been worked out between dependent (female participation rates) and independent (Socio-cultural and economic demographic factors listed in Table I). The t-test is used to establish association between these variables. The level of significance for the acceptance of relationship is 5 percent, and

(3) In order to identify the importance of a particular variable in explaining the variation in female participation rate over space, a step-wise and multiple regression analysis is done.

2.8 Plan of the Study

This study has been organised in five different units. The first chapter comprises of three sections. The section I provides a brief introduction to the problem opening section discusses the various prevailent views on women's participation in economic activity. Section 2, presents literature survey to analyse theoretical issues regarding female participation in gainful employment. The concluding section contains an attempt

to organise the temporal and regional variation studies done in women participation in India. It also discusses the problem under consideration, its objectives and hypothesis.

Chapter 2 begins with the definition of concepts, data base, its limitation and coverage and introduction to study area.

Chapter 3 in three sub-units concentrates on the crux of the problem. First part discusses the relationship between the education and women participation rates.

Next part is devoted to the analysis of spatial variation in female participation rates. Correlation is worked out between male and female participation rates. Lastly, part 3 consists of the variations in sectoral distribution of women workers and relationship between education-specific women participation rates and proportion of women in primary, secondary and tertiary sector at various levels of education.

Chapter 4 details the analysis of the influence of explanatory variables on women participation rates. On the basis of correlation analysis certain hypothesis have been studied. A stepwise and multiple regression is done to look at the relative importance of the variables in explaining the spatial variations in women participation rates.

The concluding chapter presents observations, specific policy recommendations and areas of further research.

* * * * *

Table 2.1

	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Female workers in Primary sector	88.03	33.13	85.77	28.15	64.61	20.25	87.12	29.58
Female workers in Secondry sector	5.90	27.95	8.03	32.42	20.42	24.34	7.24	31.47
Female workers in Tertiary sector	6.07	38.91	6.20	39.37	14.97	55.42	5.64	47.69
Proportion of Literates among females	11.0	38.24	14.54	41.61	53.10	60.62	18.98	45.42
Proportion of workers among females	22.37	10.54	15.77	9.16	14.08	10.42	17.62	9.14
Sex ratio	983	949	971	-	1020	997	990	951
Child- women ratio	0.61	0.55	.68	.58	.56	.51	.54	.5
Female Heads of Households	12.46	11.91	13.13	11.83	17.09	18.49	14.57	11.80
Proportion of scheduled castes among females	14.43	4.46	14.36	9.18	8.92	4.94	21,06	10.15
Proportion of scheduled tribes survey females	8.19	1.00	0.93	0.35	0.43	0.32	1.00	0.14
Proportion of urban population	-	18.00	-	23.73	-	16.09	-	20.00
Proportion of married among females	45.70	43.11	41.50	40.20	37.17	35.39	42.92	41.37
Proportion of widowed/divorced/seperated females	12.77	11.27	11.18	9.29	10.51	11.27	12.05	10.53
Growth of agricultural output 1962-65 to 1970-73.	0.55	-	1.89	-	2.08	-	2.11	-
Cropping intensity	1.12	-	1.04	-	0.57	-	1.21	-
Gini co-efficient of concentration of land holdings.	.593	-	.575	-	.559	-	.502	-

Table 2.2

Economic Indicators for rural areas:

Number of indicators	Name of indicators
X_2	Percentage of cultivators among female workers.
X_3	Percentage of agricultural labourers among female workers.
X_4	Percentage of female workers in secondary among total female workers.
X_5	Proportion of female workers in tertiary sector among total female workers.
X_6	Growth of agricultural output over the period 1962-65 to 1970-73.
X_7	Cropping intensity i.e. Gross cropped area divided by net cropped area.
X_8	Gini - Co-efficient of concentration of holdings.
X_9	Percentage of irrigated area to gross cropped area.
X_{10}	Index of agricultural modernisation. This is a composite index of number of tubewells, number of tractors and amount of fertilizers per hectare of land.
	Economic Indicators in Urban Areas:
X_2	Percentage of female workers in Primary Sector.
X_3	Percentage of female workers in household industry.
X_4	Percentage of female workers in non-household industry.
X_5	Percentage of female workers to total workers in trade and commerce.
X_6	Percentage of female workers to total workers in transport and communication.
X_7	Percentage of female workers to total workers in other services.
	Economic indicator both for rural and urban areas
X_1	Number of manufacturing and processing establishments per 1000 of women workers.
	Demographic Indicators in rural and urban areas
X_8	Sex-ratio in urban and (X_{11}) in rural areas.
X_9	Child women ratio in urban and (X_{12}) in rural areas.
X_{10}	Proportion of urban population to total population.

Table ...2 contd.

Socio-cultural Indicators:

X_{11}	Proportion of female heads of households to total heads of households and in urban and (X_{13}) in rural area.
X_{12}	Literary rate of urban population and rural population (X_{14})
X_{13}	Percentage of scheduled castes females to total females in urban areas and rural areas (X_{15}).
X_{14}	Proportion of scheduled tribes among total females in urban and (X_{16}) rural areas.
X_{15}	Proportion of married among females in urban and (X_{17}) rural areas.
X_{16}	Proportion of widowed/divorced and separated among females in urban and (X_{18}) rural areas.
X_{17}	Percentage of christine women to total women population in urban and (X_{19}) rural areas.
X_{18}	Percentage of Hindu women among total women population in urban and (X_{20}) rural areas.
X_{19}	Percentage of muslim women among total women population in urban and (X_{21}) rural areas.

CHAPTER -3

Women, Education and Work-force Participation : An Analysis of Variation

3.1 Introduction

Education is an important correlate of economic growth and transformation of agricultural economy into an industrial one. Investment in education (in general, human capital) is largely considered as one of the most important means to achieve rapid economic growth. It is the creation of human capital/human-resources which has helped the war devasted economies of Japan and Germany[1].

Investment in Education is expected to have a positive impact on total participation rate as it raises the

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1. Haryan, D.L.; "Human Resource Development and Population Education", Manpower Journal, July - Sept 1974 pp.24-30.

the income aspirations, opportunity cost of inactivity and weakens the restrictive power of traditional culture in limiting the women participation in economic activity. Moreover, education is expected to be more directly linked with occupation in case of women because of occupational seggregation though the levels of education may not be linearly correlated with intensity to participate in labour-force.

No consistent relationship has been emerged between education and female participation rates from numerous emperical studies. In some of the studies a positive relationship[2] has been emerged while in some others a negative/unclear relationship[3] has emerged and some other studies have shown a non-linear relationship[4] with positive association at both high and low levels of education and a negative one at some intermediate level of education. The influencing factors can be the operation of asymetry hypothesis, level and structure of aggregate demand for labour, cultural preferences among females for taking jobs. Standing[5] explained

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2. Elizaga, J.C.; The Participation of women in the Labour-Force of Latin America: Fertility and other factors, International Labour Review Vol.109 No.5-6 May, June 1974.

   Youssef, M.; Women and Work in Developing Societies, Population monograph series No.15 (Berkeley, Institute of International studies, Univ. of California, Press, 1973).

3. King, K.J.; Skill Acquisition in the Infor mal Sector of African Economy: The Kenya case, Journal of Development, studies, Jan. 1975.

   Mc Cabe, J.L., Rosenweig M.R; Female Labour-Force Participation, occupational choice and fertility in developing countries, Journal of Development Economics, vol.3 No.2, July 1976.

4. Sinha, J.N.; op.cit.

   Standing G and Sheehan G.; Labour-Force Participation in Sri- Lanka, I.L.O. Geneva, 1976.

5. Standing, G.: op.cit.

TABLE NO. 3.1

EDUCATION SPECIFIC PARTICIPATION RATES IN INDIA

S.No.	Education Level	Participation Rates			
		Rural		Urban	
		Male	Female	Male	Female
1.	Total Population	53.16	12.97	48.62	6.52
2.	Total Illiterate	52.18	13.75	40.14	7.43
3.	Literate without education level	57.75	8.04	36.31	2.40
4.	Primary	51.90	6.83	57.02	3.17
5.	Middle	53.94	6.74	56.88	3.51
6.	Matriculation or Higher Secondary	59.92	14.64	61.15	12.81
7.	Above Higher Secondary	66.57	34.08	78.41	32.73

this in terms of economic opportunities structure and behavioural adjustment of workers and their families. The relatively high participation rate of least educated, whether men or women, can be explained simply by the tendency for the least educated to belong to households in which incomes are very low, making labour force participation a necessary condition for survival. But those with somewhat higher levels of education are less likely to belong to such households and are also likely to be at a competitive disadvantage in the wage-labour market. As such, they can be expected to be discouraged from work. Finally, those with higher levels of education have the necessary competitive advantage and correspondingly are most likely to have opportunities for high-paying wage or salary employment and thus are more likely to have a higher participation rate.

Let us see whether this type of relationship holds true at all - India level and in the states under study.

3.11 Education - Specific Participation Rates in India

The distribution of education - specific participation rate by sex and rural/urban areas in 1971 is presented in Table 3.1. It shows that rural female participation rates are higher than urban female participation rates at all the levels of education. The difference between male and female participation is much higher in urban areas than in rural areas, but it is narrowed as one moves from lower to higher levels of education. Also the difference between rural and urban female participation rates is narrowed down at the higher levels of education.

The data shows that education - specific female participation rates decline from illiterate to literate without education level, which further declines at primary and middle level (in case of rural areas) and increases after that while in urban areas it declines upto primary level of education and starts increasing after that, therefore making almost a 'u' shape pattern. In case of male workers education specific participation rates do not exhibit such wide fluctuations. Their participation rates both in rural and urban areas, more or less, improves with every improvement in level of education.

Further the relationship between education and female participation in economic activity at region, state and district level will be discussed.

3.12 Education - Specific Work-Force Participation Rates in Rural Areas*

(A) Southern Region:

Education specific participation rates by sex and rural/urban division in southern region and its individual states are given in Tables 3.2 and 3.3. The data shows that the pattern of education specific participation rates in rural areas of southern region resembles to the all India

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*Literate, according to census definition is a person who can read or write with understanding in any language. Therefore, while drawing the curve between female participation rates and levels of education, literate without education levels have been left out because it is difficult to decide years of schooling in this case.

pattern. Female participation in southern region (rural) declines from 22.5 percent to 8.9 percent as one moves from illiterate to literate without education level and it continues to be extremely low upto middle level except a small increase at primary level (one percent). After middle level, female participation rates increases with every increase in levels of education (Table 3.2, Fig.2).

Contrary to female participation rates, male participation rates increases from 54 percent to 67 percent, with a move illiterate to primary with an intermediate value of 58 percent at literate without education level.

The state level patterns are discussed below:

States depicting the similar pattern of male and female participation rates are considered under one heading.

(B) Andhra Pradesh and Tamil Nadu

Rural female participation decline substantially from illiterate to literate without education level (from 29.5 percent to 8.5 percent in Andhra Pradesh and from 19.5 percent to 7.5 percent). Further, female participation improves with every improvement in the levels of education in both the states (Table 3.2). The Plot of the data gives an almost 'u' shaped pattern as derived in some earliers studies e.g. Sinha[6].

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6. Sinha, J.N.; op.cit.

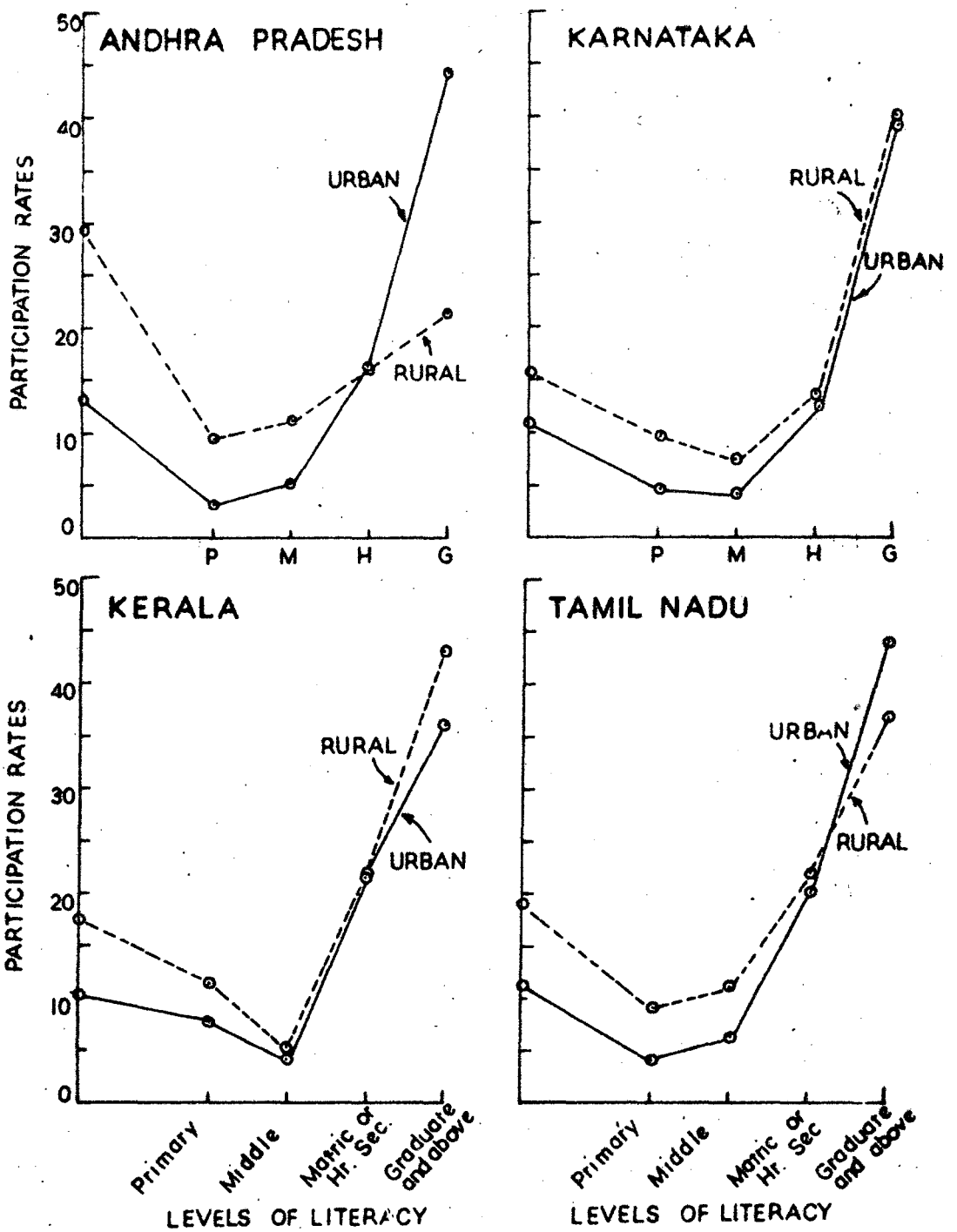

FIG.3. Education specific female participation rates in states under study.

TABLE NO. 3.2

EDUCATION SPECIFIC

FEMALE PARTICIPATION RATES BY LEVELS OF EDUCATION

S.No.	Levels of Education	PARTICIPATION RATES									
		Southern Region		Andhra Pradesh		Tamil Nadu		Karnataka		Kerla	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Uyban
1.	Total	19.39	9.66	27.37	10.54	17.62	9.14	15.77	9.16	14.08	10.42
2.	Illiterate	22.50	11.80	29.51	13.54	19.56	11.10	16.83	11.01	17.38	10.86
3.	Literate with out education level	8.96	4.03	8.51	2.62	7.54	3.94	8.72	3.54	10.30	7.81
4.	Primary	10.62	4.80	9.97	3.14	9.61	4.17	9.73	4.68	11.83	8.67
5.	Middle	7.30	8.32	11.09	5.14	11.14	8.40	7.86	4.18	5.62	4.64
6.	Matriculation including technical and nontechnical diploma holders	20.31	18.52	16.26	16.34	22.35	20.46	13.85	15.17	21.94	22.52
7.	Graduate and above	41.74	45.01	21.94	44.60	37.83	42.95	40.09	39.45	43.23	31.18

TABLE NO. 3.2 (a)

DIVISION OF FEMALE WORKERS BY LEVELS OF EDUCATION

PARTICIPATION RATES

S.No.	Levels of Education	Southern Region		Andhra Pradesh		Tamil Nadu		Karnataka		Kerala	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1.	Illiterate	[illegible]	[illegible]	96.06	81.84	89.03	66.46	91.24	70.15	67.68	41.03
2.	Literate without education level			1.01	2.32	3.85	6.58	1.48	4.16	12.98	11.87
3.	Primary			2.17	3.81	3.91	7.23	5.46	7.01	10.54	10.48
4.	Middle			0.54	2.71	1.40	5.07	1.13	4.41	0.02	5.80
5.	Matriculation including technical and non-technical diploma holders			0.20	5.52	0.35	11.80	0.64	11.11	5.54	16.20
6.	Graduate and above			0.01	2.40	0.05	8.36	0.04	3.16	0.74	5.82

TABLE NO. 3.3.

EDUCATION SPECIFIC — MALE PARTICIPATION RATES

PARTICIPATION RATES

S.No.	Levels of Education	Southern Region		Andhra Pradesh		Tamil Nadu		Karnatka		Kerala	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1.	Total	56.42	48.99	60.24	49.30	58.55	50.29	56.43	48.26	45.29	43.51
2.	Illiterate	53.73	39.19	58.22	43.04	54.79	37.51	53.84	41.13	31.76	26.03
3.	Literate without education level	57.59	36.72	61.29	36.76	56.79	36.73	49.38	31.43	39.58	31.71
4.	Primary	66.99	60.88	68.70	61.38	72.39	63.82	64.05	56.97	62.68	56.83
5.	Middle	57.23	56.68	62.10	55.65	59.02	60.31	60.16	54.72	49.25	49.88
6.	Matriculation including and non technical diploma holders	66.12	62.25	67.03	62.35	63.27	65.62	63.95	59.13	51.84	57.66
7.	Graduate and above	72.06	74.70	74.70	80.85	71.62	77.01	77.77	78.68	68.22	76.78

Male participation rates increases from illiterate to literate without education level and it continues upto primary level. At middle level male participation rate declines by 7 percent and 10 percent in Andhra Pradesh and Tamil Nadu respectively. After this, male participation rates increases with an increase in levels of education.

(C) Karnataka and Kerala

Female participation rates in Karnataka and Kerala declines largely ((from 17 to 9 percent) in Karnataka and (17 to 10 percent) in Kerala) as one moves from illitrate to literate without education level followed by a slight increase at primary level. At middle level, female participation rates again decline and decline is quite sharp in case of Kerala (5 percent). After middle level women participation rates improves with improvement in levels of education.

Figure3b and 3c, shows clearly that the non-linearity observed in these two states is quite different from Andhra Pradesh and Tamil Nadu.

Male participation rates in Karnataka decline from 54 percent to 49 percent litrate to illiterate with education level which increases to 64 percent at primary level. At middle level it again declines to 60 percent and after that it improves with every increase in level of education. In Kerala, the pattern of male participation rate is similar to all other states.

3.13 Education specific participation Rate in Urban Areas.

(A) Southern Region. Urban female participation rates unlike rural female participation rates, depicts a similar pattern as that of India's urban female participation rates decline from 11.8 percent to 4 percent from illetrate to literate without education level. After this level female participation improves with every improvement in the level of education, from 4.8 percent at primary level to 45 percent at graduate and above level (Table 3.2, Fig.3a and 3b).

Urban male participation rate decline from 39 percent to 35 percent from illiterate to literate without education level and again increases to 61 percent at primary level. At middle level female participation rate decline to 57 percent followed by an increase at all other levels.

(B) Andhra Pradesh and Tamil Nadu. Urban female participation in Andhra Pradesh and Tamil Nadu declines very sharply from illetrate to literate without education level. The decline is around 11 and 9 percent respectively. The decline in female participation rate at literate without education level is followed by an increase at all other levels of education (Table 3.2). The increase in female participation rate after middle level is subtential (~~≈~~ 11 percent), at matriculation level (~~≈~~ 14 percent), at graduate and above level (~~≈~~ 20 percent, Table 3.2). The plot of data shows a 'U' shaped curved with non-linearity (Fig.3a,3d).

without education level and it continues upto middle level except a small increase at primary level. A similar pattern is observed in rural/urban areas of Karnataka and Kerala. In urban areas of southern region, female participation rates decline sharply, from illiterate to literate without education level and after that female participation rates improves with every improvement in levels of education. Andhra Pradesh and Tamil Nadu in its rural and urban areas shows a similar pattern. Contrary to it, male participation rates in rural areas of southern region, and 11 other states except Kerala, increases from illiterate to primary level followed by decline at middle level and improves after that with every level of education. While in urban areas, of southern and all its states shows a pattern similar to female participation in Kerala and Karnataka. The infrence drawn is that after a "threshold point" , female participation necessarily improves at all levels of education. The threshold point appears necessarily because some education for women raises their expectation about jobs and they do not prefer to accept the jobs which they were doing earlier. At the same time they do not have enough education and paining for high prestige jobs, resulting a decline in their participation rate.

2. Upto middle level rural female participation rates are higher than urban female participation rates in all the states under study. In Karnataka and Kerala, rural female participation rate at graduate and above level is also higher than urban female participation rate at this level, but the absolute figure involved at this levels is very low (see Table 3.2a). /T

Although it is dubious but logical to conclude that education has more favourable impact on female participation rates in rural areas than in urban areas(at least at lower levels of education).

3. Female participation in rural areas of Southern Region and its individual states constitutes around one third of male participation rates and urban female participation constitutes around one fourth of male participation rate. Female participation rates improves with an improvement in levels of education except a decline at some intermediate level and sex-wise differences gets narrowed to less than half for women having education qualifications more than secondry level (although absolute fig. of female workers at these levels are quite low, Table 3.2a) i.e. higher level of education has more equalising effect in the matter of work participation of males and females.

4. There is consistent increase in education - specific participation rates after the middle stage of eduction both for males and females in rural and urban areas. The infrence drawn is that a higher education has a significant impact on overall participation rates as it increases the range of jobs available to workers and improves their competitive position for the job available.

3.2 Women in the Work-Force: Intra-regional and Inter-regional comparision

3.21 Introduction:

Variations in female participation rates is one of the significant features of Indian economy. According to 1971

census figure, the participation rate of rural women are much higher (12.6 percent) than the participation rate of urban women (6 percent). Factors responsible for this pattern in rural areas are discussed below. The rural women are mostly engaged in agriculture or in households industries where household duties can easily be combined with economic activity. Also this does not require any special education and training required for female workers in urban areas. Additionally the family structure is such that eldest females in the family generally look after the children. All these factors taken together raise the female participation rates in rural areas while in urban areas the reverse happens which keeps the female participation rate low.

In regional pattern of female participation, we observe wide range of variations in female participation rate varying from 1.64 percent in Punjab to 47.43 percent in Nagaland. The conditions and factors affecting female participation rate have been dealt by many yet scanty attention has been paid to regional dimensions of it.

Moreover these studies are on very aggregate level (Gulati[7], De Souza[8], Nath[9], Mukherjee[10]). Such type of analysis results in the establishment of simplistic relationship

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7. Gulati, L.; op.cit.
8. De' Souza , v.; op.cit.
9. Nath, K.; op.cit.
10. Mukherjee ; op.cit.

ECONOMICALLY ACTIVE FEMALE POPULATION IN SELECTED COUNTRIES

TABLE NO. 3.4

S.NO.	COUNTRY	ECONOMICALLY ACTIVE FEMALE POPULATION (%)
1.	Guinea Portuguese	62.0
2.	Cape Verde	56.7
3.	Ghana	49.6
4.	Rumania	48.0
5.	Bulgaria	45.7
6.	U.S.S.R.	44.0
7.	German (Democratic Republic)	39.8
8.	Zanibar	39.3
9.	Denmark	37.8
10.	Japan	37.6
11.	United Kingdom	32.2
12.	German (Federal Republic)	30.2
13.	France	29.7
14.	Australia	25.0
15.	East Malacia	24.9
16.	Korea	23.4
17.	Indonesia	23.2
18.	Philippines	21.3
19.	Italy	19.5
20.	Nigeria	16.0
21.	Argentina	15.4
22.	India	13.2
23.	Sri Lanka	13.1
24.	Brazil	13.1
25.	Columbia	11.6
26.	Mexico	10.4
27.	Iran	8.8
28.	Pakistan	8.0
29.	Egypt	4.0
30.	Iraq	2.1
31.	Algeria	1.8

between female participation rates and explanatry variables which leads to sweeping generalisation on the subjects.

High rate of participation of women of lower strata[11] is another aspect of female participation rate. The female participation varies to region to regions and the variations in nature and extent of female participation rate (Total and Education specific) are conspicuous at each level starting from a international to state and district level.

3.22 Women Participation in Economic Activity in Some Selected Countries

Women constitution a considerable part of labour-force all over the world and their economic participation varies from country to country (Table 3.4). Economic significance of variations in female participation rates is not same as that of male participation rate because most adult females who are not in labour force engage in productive work within the home, rendering services and producing goods which are nonetheless valuable for being not counted as Income.[12] Women participation rate is normally lower than male participation rate[13] because women participation is contigent upon certain factors more than the male participation rates. This includes economic needs, institutional factors, kind of employment available (specially if the employment can be combined with their primary obligation home and family (Table 3.4).

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11. Tripati, B.L.; op. cit.

12. United Nations, "The Determinants and Consequences of Population Trends" Population Studies No.50,Vol.1 (New York, 1973).

13 Nath, K.;"Women in The Working Force in India" Economic and Political Weekely, August 3, 1968,pp.1205.

It is evident from the table that as one move from industrial countries to agriculture ones, female participation in economic activity declines. India is having very low female participation rates[14]. The gainfully employed women population in East European countries is higher than the West European countries from such situation. Gulati[15] concluded that "possibly the work ethos that centrally planned economies encourage is such as promotes female participation rates." The another important feature is the wide variations in female activity rate among the broad generalised categories. The socialist economies of west European countries have female participation rate varying from 39.8 percent for East Germany to 48 percent for Rumania and the range is much wider in the case of West European countries, Italy with 19.5 percent and Denmark with 37.8 percent of women engaged in economic activity.

The Arab countries have the low female participation rate (around 10 percent) because of Islamic outline of keeping women under veil.

Most of the Latin American countries have women work rate varying between 10 to 20 percent. Gulati relates this level of female activity rate with Catholic tradition of Latin America.

The African countries and South-East Asian countries are having high female participation rate (20 percent to 30 percent). These are the countries with strong female tradition (Bosurp 1970).

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14. While making comparison one has to bear in mind that different countries define worker differently.
15. Gulati L; (1975) op. cit. pp. 35-36.

TABLE NO. 3.5

PROPORTION OF FEMALE WORKERS AMONG TOTAL FEMALES IN INDIA

	STATE/UNION TERRITORY	PROPORTION OF FEMALE WORKERS AMONG TOTAL FEMALES
	India	13.18
1.	Nagaland	47.43
2.	Meghalya	36.06
3.	Manipur	26.00
4.	Andhra Pradesh	25.24
5.	Maharastra	21.49
6.	Himachal Pradesh	21.46
7.	Madhya Pradesh	19.77
8.	Tamil Nadu	16.86
9.	Karnataka	15.13
10.	Kerala	13.68
11.	Pondichery	11.66
12.	Gujrat	10.66
13.	Bihar	10.58
14.	Rajasthan	10.42
15.	Uttar Pradesh	8.78
16.	Orriesa	7.58
17.	Chandigarh	6.36
18.	Assam	6.15
19.	West Bengal	5.36
20.	Tripura	5.28
21.	Delhi	5.15
22.	Jammu & Kashmir	4.86
23.	Haryana	3.17
24.	Punjab	1.67

3.23 WOMEN PARTICIPATION IN ECONOMIC ACTIVITY IN INDIA

India, with surplus labour and predominently agricultural economy shows considerable variation in female participation rate even at state level (Table 3.5).

The north Indian pattern of female work participation resembles West Asian and North African Arab countries whereas central and Southern India pattern of female participation resembles South-East Asian countries. Punjab, Haryana, Jammu and Kashmir, Uttar Pradesh, Orissa, Bengal and Assam show a very low level of female participation (around 10 percent) whereas the south Indian states Kerala, Tamil Nadu, Karnatka, A.P., Bihar and Gujarat have female participation ranging from 10 percent to 20 percent.

3.24 DECLINE IN FEMALE PARTICIPATION RATE IN INDIA

Since 1911 female workers as a percentage of female population decline from 33.7 percent (1911) to 11.8 percent (1971) female workers as a percentage of total workers decline from 34.4 percent (1911) to 17.4 percent (1971). The decline is much sharper during (1951-71).

The decline in female participation is very surprising because total population has increased during (1961-71). Male female population increased 25 percent and 24 percent respectively (20 percent and 21 percent in working age group). The male workers increased by 15.2 percent while female workers decline by 41.4 percent.

TABLE NO. 3.6

FEMALE PARTICIPATION IN WORK FORCE IN INDIA (1911-71)

Year	Female workers as a percentage of total female	Female workers as a percentage of total workers
1911	33.7	34.4
1921	33.7	34.0
1931	27.6	31.0
1951	23.3	28.3
1961	27.9	31.9
1971	14.8	17.4

TABLE NO. 3.7

Statewise Percentage Distribution of Female workers to their total population in 1961 and 1971 in Rural and Urban Areas

S.No.	State/ Union Territory	Rural				Urban			
		1961		1971		1961		1971	
		%	Rank	%	Rank	%	Rank	%	Rank
1.	Andhra Pradesh	64.32	1	31.69	2	52.40	10	11.60	4
2.	Assam	53.98	17	6.36	18	55.36	5	4.32	20
3.	Bihar	56.00	14	11.04	14	51.74	12	6.45	15
4.	Gujrat	55.30	15	13.58	12	48.37	19	6.32	16
5.	Himachal Pradesh	63.47	3	22.58	6	56.49	3	7.61	13
6.	Jammu & Kashmir	59.28	10	9.94	19	50.78	15	3.60	22
7.	Kerala	47.42	23	14.92	11	45.98	21	11.20	5
8.	Madhya Pradesh	61.58	5	23.73	5	52.44	9	8.09	11
9.	Maharastra ..	58.07	12	26.70	3	54.83	6	9.72	9
10.	Mysore (Karnatka)	60.40	8	17.60	9	51.57	13	10.08	8
11.	Nagaland	61.04	6	50.22	1	52.13	11	9.08	10
12.	Orissa	61.02	7	8.55	16	57.22	2	10.73	6
13.	Punjab ..	33.44	19	1.27	23	30.93	14	3.03	22
14.	Rajasthan	60.13	9	11.95	13	48.04	20	10.45	7
15.	Tamil Nadu	62.19	4	21.19	7	53.16	7	16.40	2
16.	Uttar Pradesh	59.20	11	9.54	15	51.74	12	4.16	21
17.	West Bengal	53.46	18	5.64	20	55.38	4	4.75	19
18.	Andaman & Nicobar	64.27	2	8.01	17	66.17	1	7.25	14
19.	Delhi	47.82	22	5.37	22	32.80	8	5.18	18
20.	Goa, Daman and .. Diu	71.77	20	29.78	48	48.75	26	13.04	3
21.	Manipur	47.93	21	27.33	4	40.99	22	18.00	1
22.	Pondicherry	57.13	13	15.16	10	48.74	17	7.80	12
23.	Tripura	55.24	16	52.39	21	46.84	18	5.42	17

This massive decline in female workers is often attributed to change in defination of worker during (1961-71). Census defination (1971) of worker, excluded the secondry activites and this affected the recording of female employment adversely[16].

A controversy arrives whether the extremely low figures of 1971 census should be attributed to a statistical abnormation caused - by conceptual basis to define worker[17] or to truely declining trend which has been a continuous one except the figure for 1961[18]. However, the available research on the subject accepts that there has been a decline in female participation.

Table 3.7 in this text in female participation during 1961-71 in the rural and urban areas of the state, decline is much sharper at par urban area of all the state. The other significant aspects of the decline is the variation in order of status according to the levels of participation over a decade.

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16. Status of women in India; A synopsis of the Report of National Committee, ICSSR (1974) pp. 62.
17. Sinha, J.N.; op.cit.
18. Government of India pp.174.

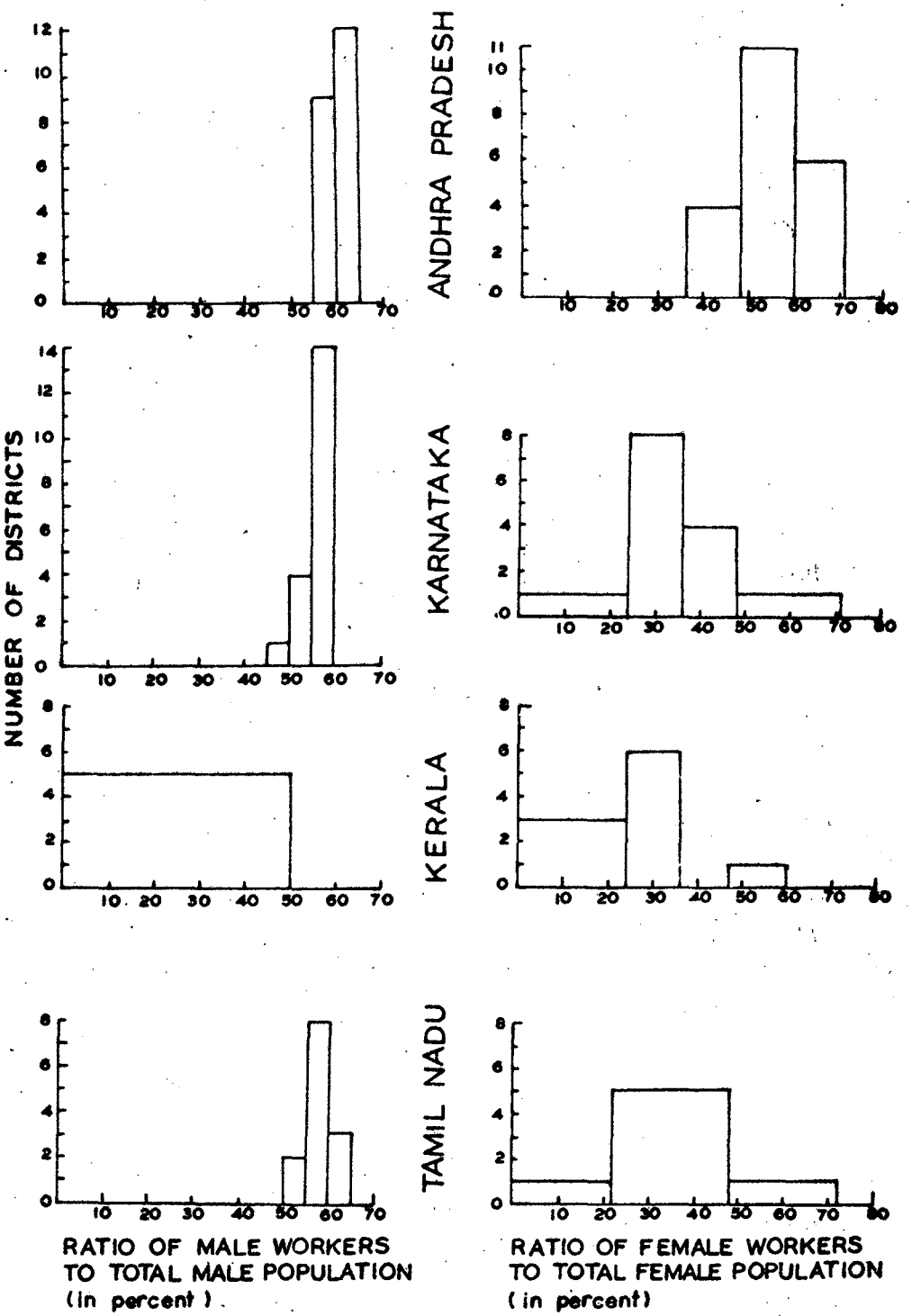

FIG.4 Work participation rates in the states under study (Rural area)

TABLE NO. 3.8

SHARE OF FEMALE WORKERS IN FEMALE POPULATION

(RURAL AREAS)

Percentage	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu	
	No. of districts	% of districts	No.of districts	% of districts	No.of districts	% of district	No.of district	% of dis.
30+	6	28.57	1	5.26	0	0.00	1	7.69
24-30	11	52.38	1	5.26	1	10.00	1	7.69
18-24	4	19.05	4	21.05	0	0.00	5	38.46
12-18	0	0.00	8	42.11	6	60.00	5	38.46
Below 12	0	0.00	5	26.32	3	30.00	1	7.69
Total	21	100.00	19	100.00	10	100.00	13	100.00

TABLE NO. 3.9

SHARE OF FEMALE WORKERS IN FEMALE POPULATION

(RURAL AREAS)

Percentage	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu	
	No. of dis-tricts	% of dist-ricts	No.of dis-tricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts
60+	12	57.14%	0	0.00	0	0.00	3	23.08
56-60	9	42.86	14	73.68	0	0.00	8	61.54
50-56	0	0.00	4	21.05	0	0.00	2	15.38
45-50	0	0.00	1	5.26	5	50.00	0	0.00
Below 45	0	0.00	0	0.00	5	50.00	0	0.00
Total	21	100.00	19	100.00	10	100.00	13	100.00

Let us see the female participation at state and district level in the area of our study.

: The variations are discussed with respect to the four states under study.

Andhra Pradesh: A predominently rice growing region, Andhra Pradesh, except the few coastal districts, is still characterised by remnants of feudal structure. Particularly in Rayalseema and Telangana region, the feudal oppression are still prevalent with bounded labour, 'veth' and 'begar' which has erupted in violent peasent revolts in the post-independence period. The economy is hardly diversified. Increasing population pressure on improvished rice producing land has compelled large masses of workers to be underemployed or to migrate in search of jobs in slack seasons.

The female participation in rural Andhra Pradesh is one of the highest in India. According to 1971 census 27.36 per cent of women are categorised as workers against only 13.4 per cent at the national level. However, this picture is not uniform at the district level (Table 3.8, Fig.4,5). The participation of women in economic activity varies between 19.6 per cent in East Godavari to 35.8 per cent in Mehboobnagar.

The eastern districts in the Coastal Andhra have a relatively lower female participation in work than that of Western plateau region. In the former, the worker rate of women varies between 20 per cent and 30 per cent whereas, the proportion increases in the latter. In the Telangana region, districts of Mehboobnagar, Hyderabad, Medak, Nizamabad and

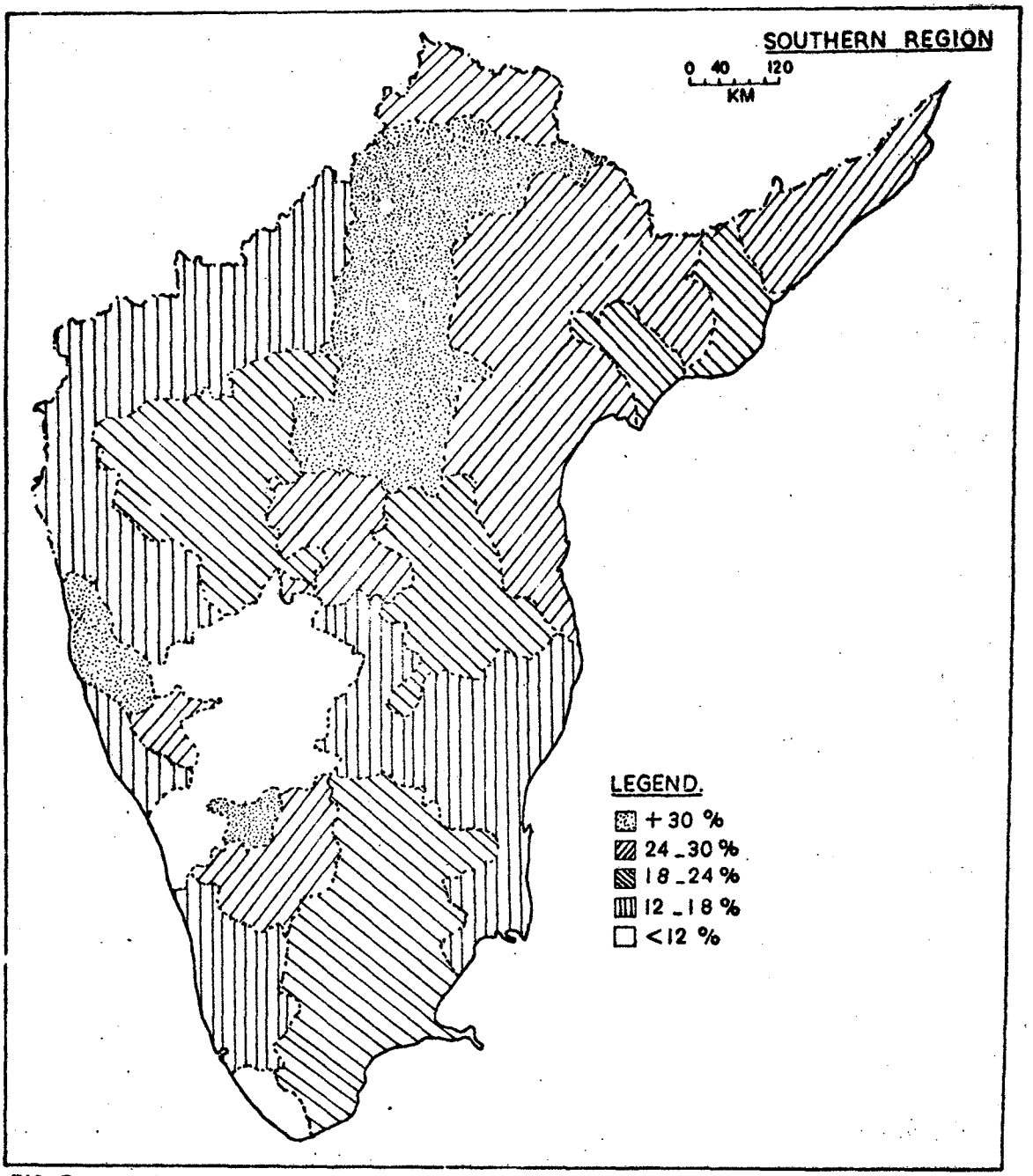

FIG. 5 TOTAL RURAL FEMALE PARTICIPATION RATES

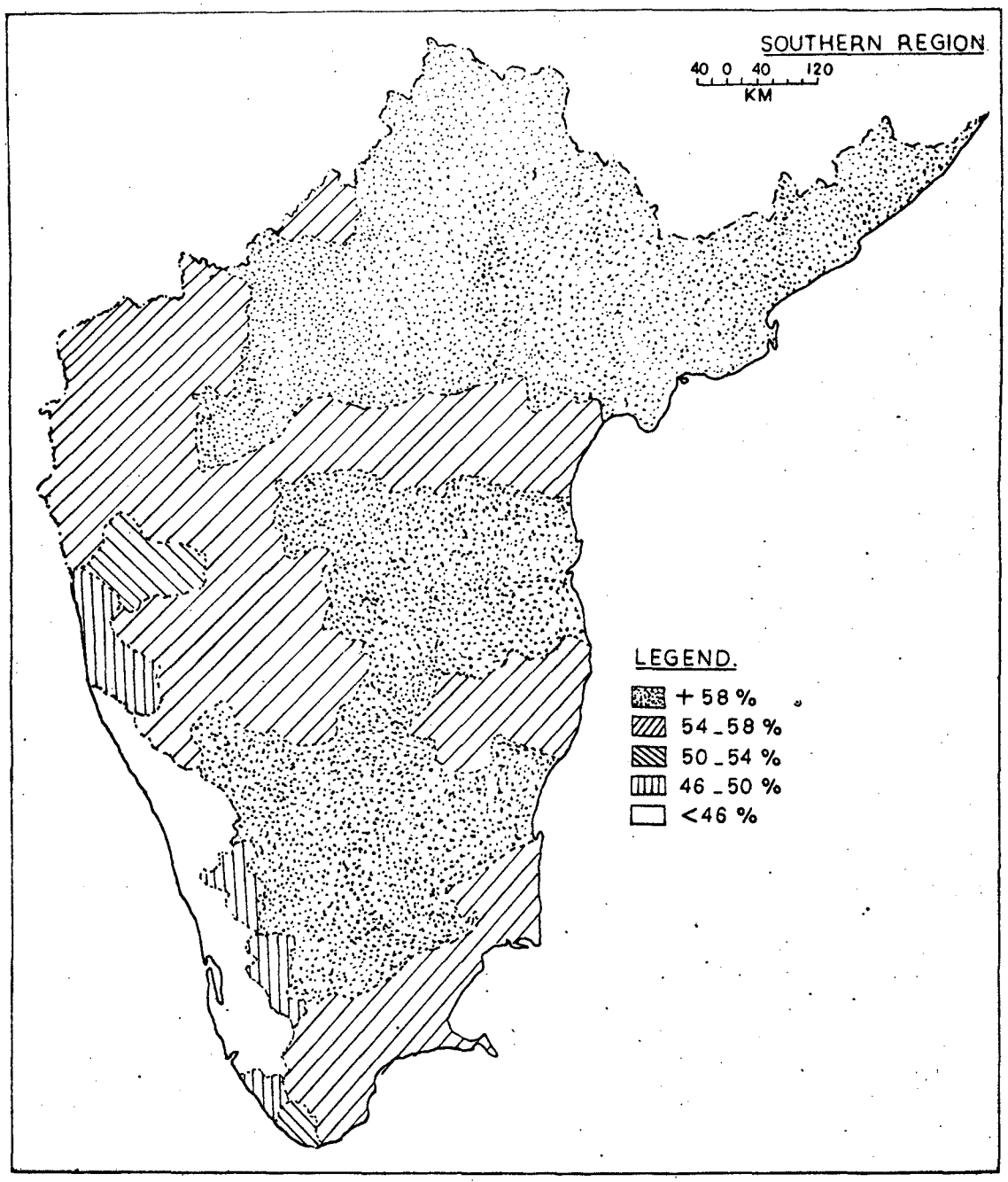

FIG.6. TOTAL MALE PARTICIPATION RATES, RURAL AREA.

Karimnagar have a very high female participation in economic activity. Except Kurnool, in the Rayalseema region, where the female participation is very high, all other districts have high participation of women in economic activity ranging between 20 per cent and 30 per cent.

In the western part of the region particularly in Telangana, male and female participation in economic activity is very high whereas in the coastal region, the male participation is high but worker rate of females is relatively low (Table 3.8,3.9; Fig.5,6). The worker rate of males is very high (60 per cent to 65 per cent) in as many as 12 out of 21 districts in Andhra Pradesh. Male - Female participation in economic activity is positively correlated indicating districts with higher male participation are also marked by higher female participation in economic activity. There seems a general correspondence between a higher sex-ratio and higher female participation of women at district level.

Karnataka

The female participation in rural Karnataka is 15.77 per cent against the all India average of 13.4 per cent. However, this picture varies a lot at district level (Table 3.8, Fig.5,6). The proportion of gainfully employed females varies between 8.97 per cent in Hassan to 30.85 per cent in South Kanara. In South Kanara, the higher participation rate may be because Kanara coast is exceedingly rich in fisheries.

The districts of Bidar, Gulbarga, Bijapur, Belgaum, North Kanara, Shimoga and Kolar have a low participation rate of women workers ranging between 12 per cent to 18 per cent.

The mainland, districts of Dharwar, Bellary, Chittredurg and Raichur, show a medium participation rate ranging between 18 per cent to 24 per cent.

Except South Kanara, with a high female participation rate, all other coastal districts have a low female participation rate. Eight districts out of 19 belong to this category. In the southern part of Karnataka except Coorg, all other districts have a very low female participation rate (less than 12 percent).

Male participation rate is quite high in this state, with 14 districts out of 19 having a high participation rate ranging from 55 per cent to 60 per cent. Female participation rates in South Karnara is very high while male participation rate is very low. Likewise male participation in all other districts is high against the low female participation. Male - female participation in economic activity is negatively correlated ($r = -.422$) indicating districts with higher male participation rate are characterized by lower female participation rate.

Kerala

Kerala earns the distinction of having maximum proportion of literate females among all the Indian states. Contrarily the proportion of gainfully employed women population is lowest among all the states under study. According to 1971 census, only 14.08 per cent of females are employed in economic activity which is slightly higher than the national average. Rural female participation in Kerala varies from 10.34 per cent in Malappuram to 24.68 per cent in Palghat. However, this uniformity is not

maintained over districts (Table 3.8; Fig.4,5).

Female participation rate is low in Trichur, Ernakulum, Kottayam, Allepy, Quilon and Trivandrum. The work rate of females (district level) ranges from 12 per cent to 18 per cent. Rest of the three districts have a very low female participation rate. In Kerala, the male participation rates are also very low except Palghat (49.61 percent, Table 3.8,3.9; Fig.6). Male - female participation rates, thus, are positively correlated (r = .48) indicating that if male participation is high, female participation will also be high. It seems that a favourable sex-ratio has a positive relation with female participation rate.

Tamil Nadu

In rural Tamil Nadu female participation is around 18 per cent. However, this picture is not uniform at district level. Female participation in economic activity varies from 5.89 per cent in Kanniya Kumari to 30.53 per cent in Nilgiris where female participation is very high because of a higher proportion of total population, and it being a hill region where female participation is always higher.

Female participation rate in Coimbatore, Dharampur, Salem, Madurai, Trichinapalli, Ramanathapuram, and Tirunelveli, ranges between 18 per cent and 24 per cent (Table 3.8; Fig.4). The eastern districts of Tamil Nadu have a low participation rate ranging between 12 per cent to 18 per cent. Rural male participation rate is quite high (between 53 to 65 per cent) in 11 out of 13 districts of Tamil Nadu (Table 3.9; Fig.5).

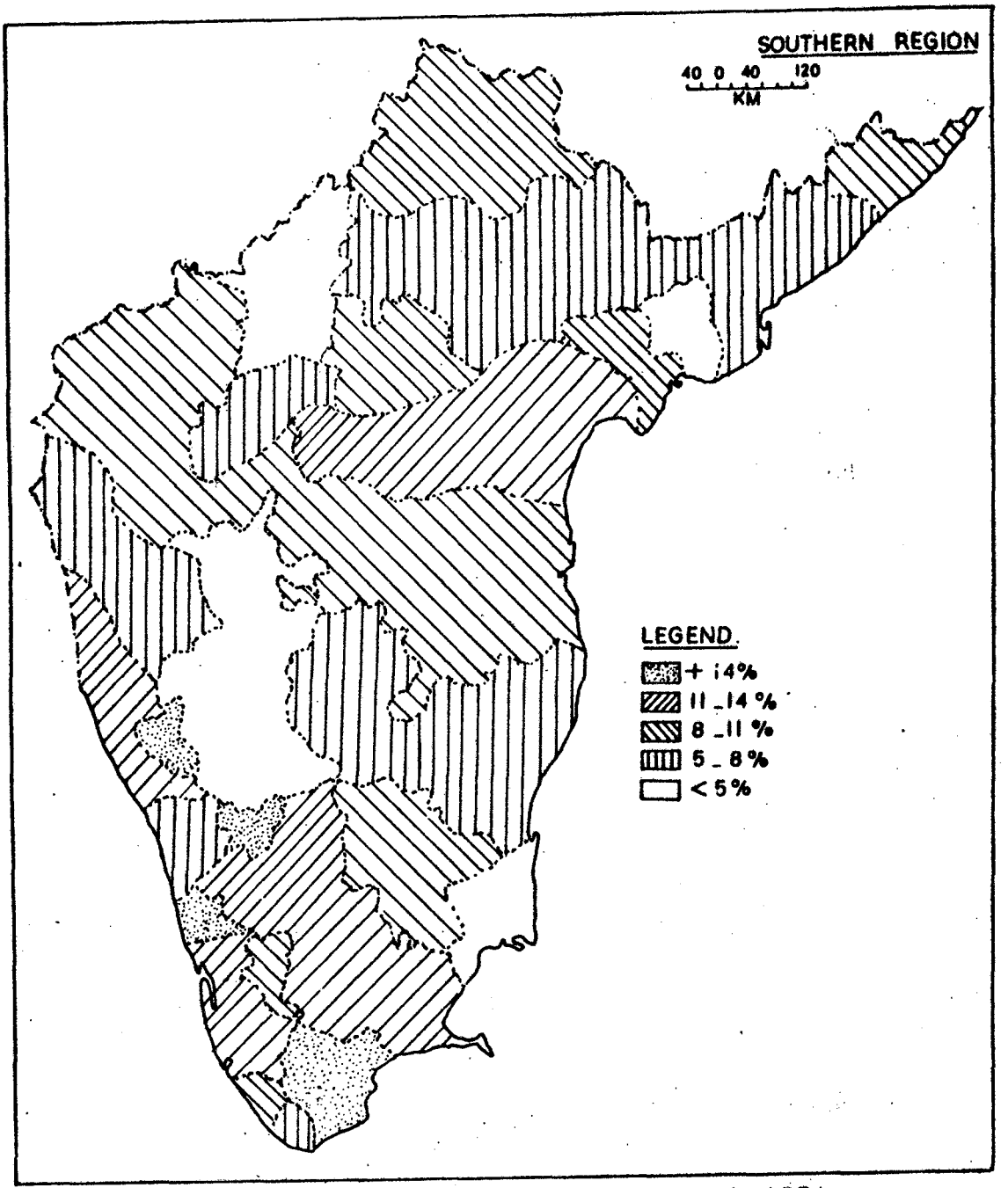

FIG. 7 LITERATE FEMALE PARTICIPATION RATES , RURAL AREA.

TABLE NO. 3.10

PARTICIPATION RATES OF LITERATE FEMALES IN RURAL AREAS

Percentage	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu	
	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts
14+	0	0.00	1	5.26	1	10.00	2	15.38
11-14	3	14.29	1	5.26	5	50.00	3	23.07
8-11	10	47.62	4	21.05	2	20.00	2	15.38
6-8	7	33.33	6	31.58	2	20.00	5	38.46
Below 6	1	4.76	7	36.84	0	0.00	1	7.69
Total	21	100.00	19	100.00	10	100.00	13	100.00

Relationship between male and female participation turns out to be positive (r = .411), but correlation co-efficient is not significant.

Variations in Literate Female (Rural) Participation Rates:

Andhra Pradesh:

Andhra Pradesh, is having very low levels of female literacy, lowest among all the southern Indian states. According to 1971 census, 11 per cent of the females are literate against the all India average of 13.8 per cent.

Literate female participation varies from 4.45 percent in West Godavari to 13.55 in Ongole. Guntur and Ongole from Coastal region and Kurnool from Telangana region forms one region i.e. participation rate in these three districts is quite high and ranges between 11 per cent to 14 per cent. Medium participation rate (8 per cent to 11 per cent) of females is observed in the three districts of Rayalseema, three coastal region districts alongwith Mehboobnagar, Nizamabad, Adilabad and Karimnagar districts of Telangana. A low participation rate ranging between 5 per cent to 8 per cent is observed in the districts of Hydrabad, Medala, Khannam, Nalgonda from Telangana region and Visakhapatnam and East Godavari from coastal region.

Karnataka: Literate female participation rates in Karnataka varies from 2.92 per cent in Mandya to 15.70 per cent in Coorg. In Karnataka 7 districts out of 19 are having very low female work rate (i.e. 5 per cent). Belgaum, Bijapur, Dharwar and Bellary constitute one region depicting the medium participation

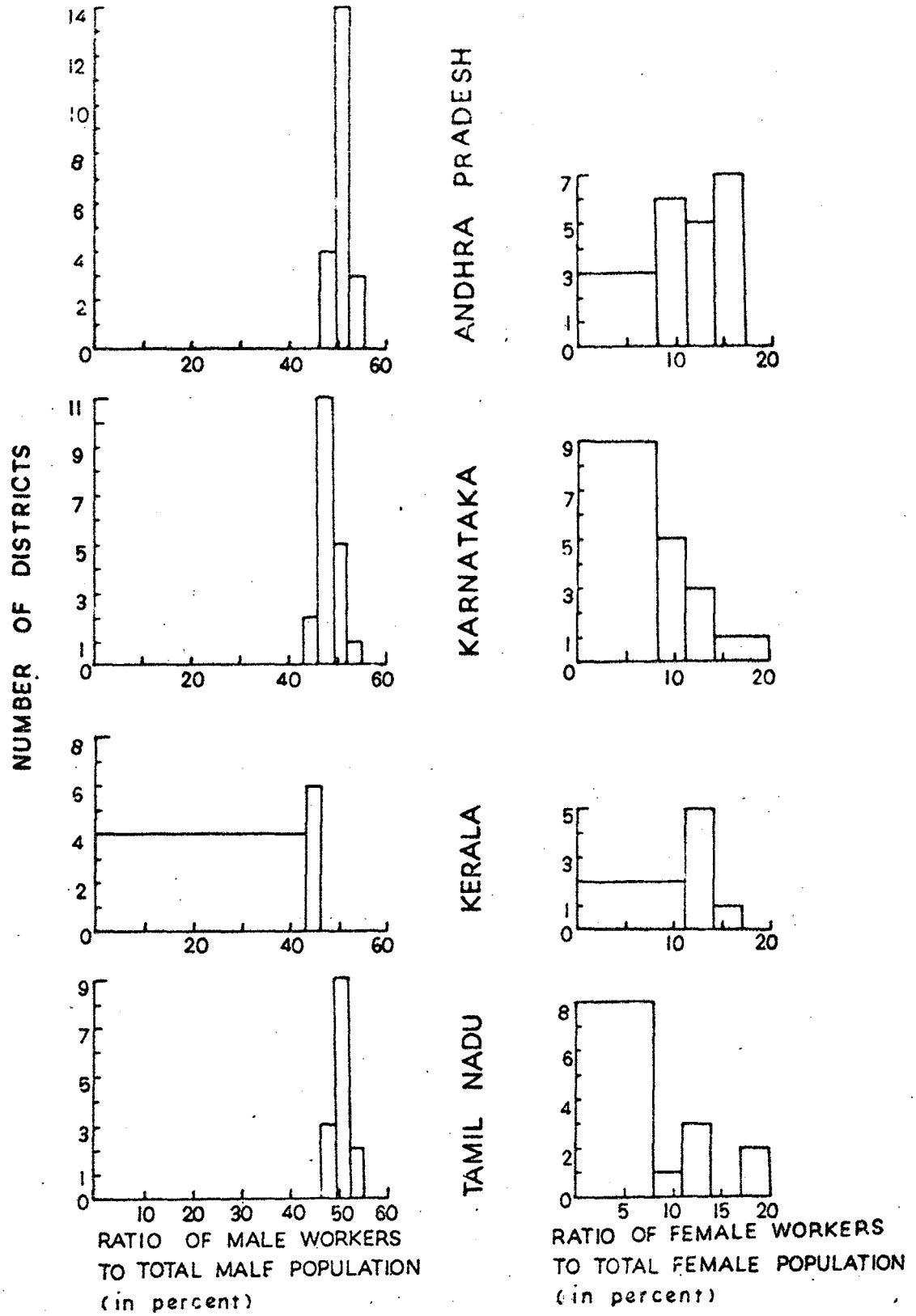

FIG.8. Work participation rates in the states under study (Urban area).

TABLE NO. 3.11

SHARE OF FEMALE WORKERS IN FEMALE POPULATION

(URBAN)

Percentage	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu	
	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts
17+	0	0.00	1	5.26	0	0.00	2	14.29
14-17	7	33.33	1	5.26	1	10.00	0	0.00
11-14	5	23.81	3	15.79	5	50.00	3	21.43
8-11	6	28.57	5	26.32	2	20.00	1	7.14
Below 8	3	14.29	9	47.37	2	20.00	8	57.14
Total	21	100.00	19	100.00	10	100.00	14	100.00

TABLE NO. 3.12

SHARE OF MALE WORKERS IN MALE POPULATION

(URBAN)

Percentage	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu	
	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts	No.of dist-ricts	% of dist-ricts
52+	3	14.29	1	5.26	0	0.00	2	14.29
49-52	14	66.67	5	26.32	0	0.00	9	64.28
46-49	4	19.05	11	57.89	0	0.00	3	21.43
43-46	0	0.00	2	10.53	6	60.00	0	0.00
Below 43	0	0.00	0	0.00	4	40.00	0	0.00
Total	21	100.00	19	100.00	10	100.00	14	100.00

rate of literate females. A low participation of literate females (5 per cent) is observed in the southern districts of Karnataka.

Kerala: Kerala with highest literacy shows a high female participation of literate females in all the districts except Kozhikode and Malappuram. In these two districts, the participation rates are low (ranging from 5 per cent to 8 per cent).

Tamil Nadu

Participation rate of literate females is quite high in the eastern and southern districts of Tamil Nadu. Thanjann is the only district where participation rate is quite low (— 5 per cent). In the districts of Nilgiris (16.77 percent) and Tiruneveli (15.08) female participation rate is very high.

3.25 Spatial variations in urban female participation rates

Urban female participation rates in Andhra Pradesh, according to 1971 census, is 10.54 per cent against the national average of 6.6 per cent. Moreover, urban female participation rates are quite lower than the rural female participation rates. It is observed that unlike rural female participation rates, urban female participation rates varies quite significantly from one district to other.

Female participation rate varies from 14 per cent to 17 per cent in the districts of Guntoor, Ongole and Vellore from coastel Andhra, Kurnool from Rayalseema, Meboobnagar, Nizamabad and Karimnagar from Telangana. Except Kurnool in Rayalseem all other districts of Rayalseema alongwith Adilabad,

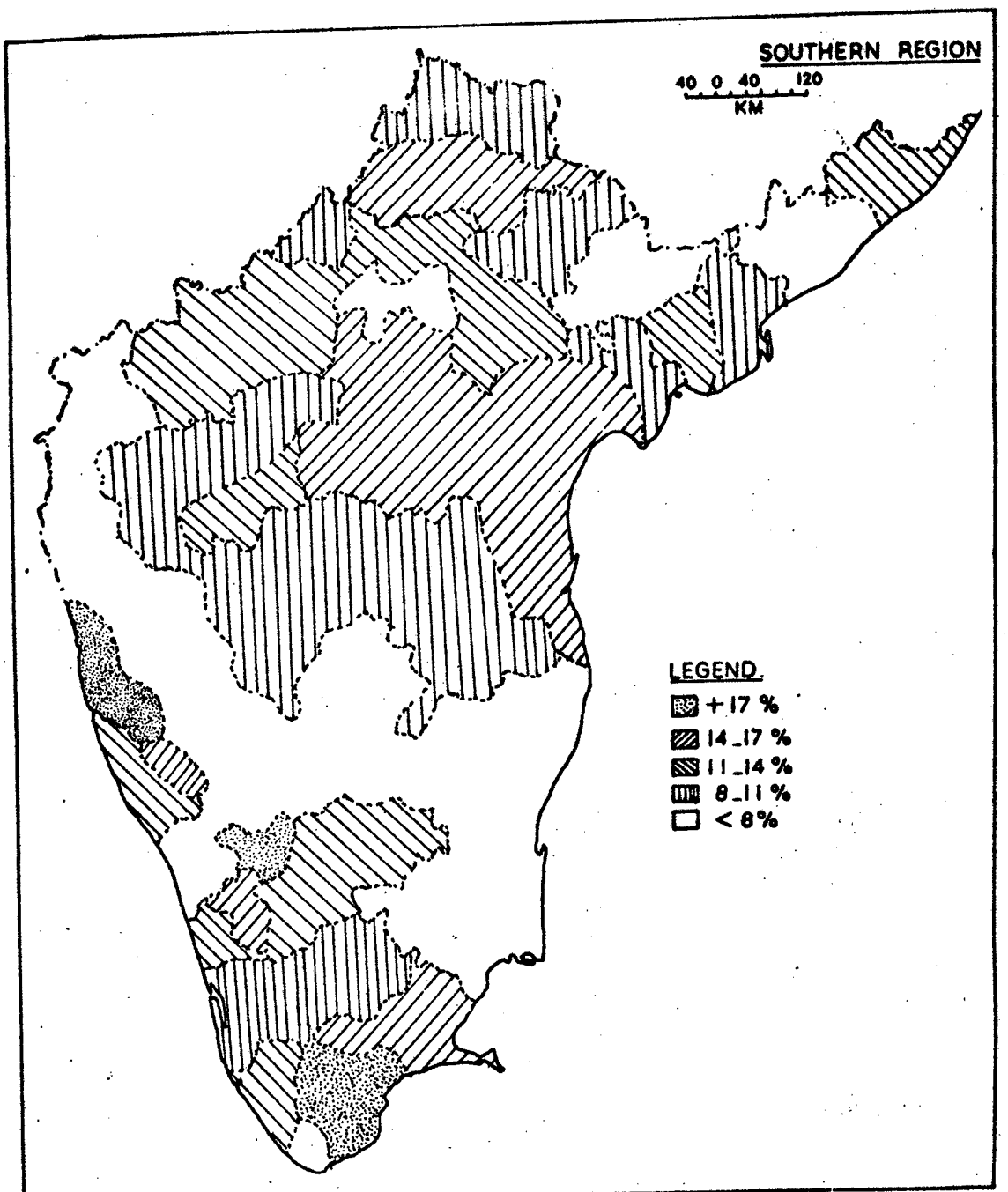

FIG. 9. TOTAL URBAN FEMALE PARTICIPATION RATES.

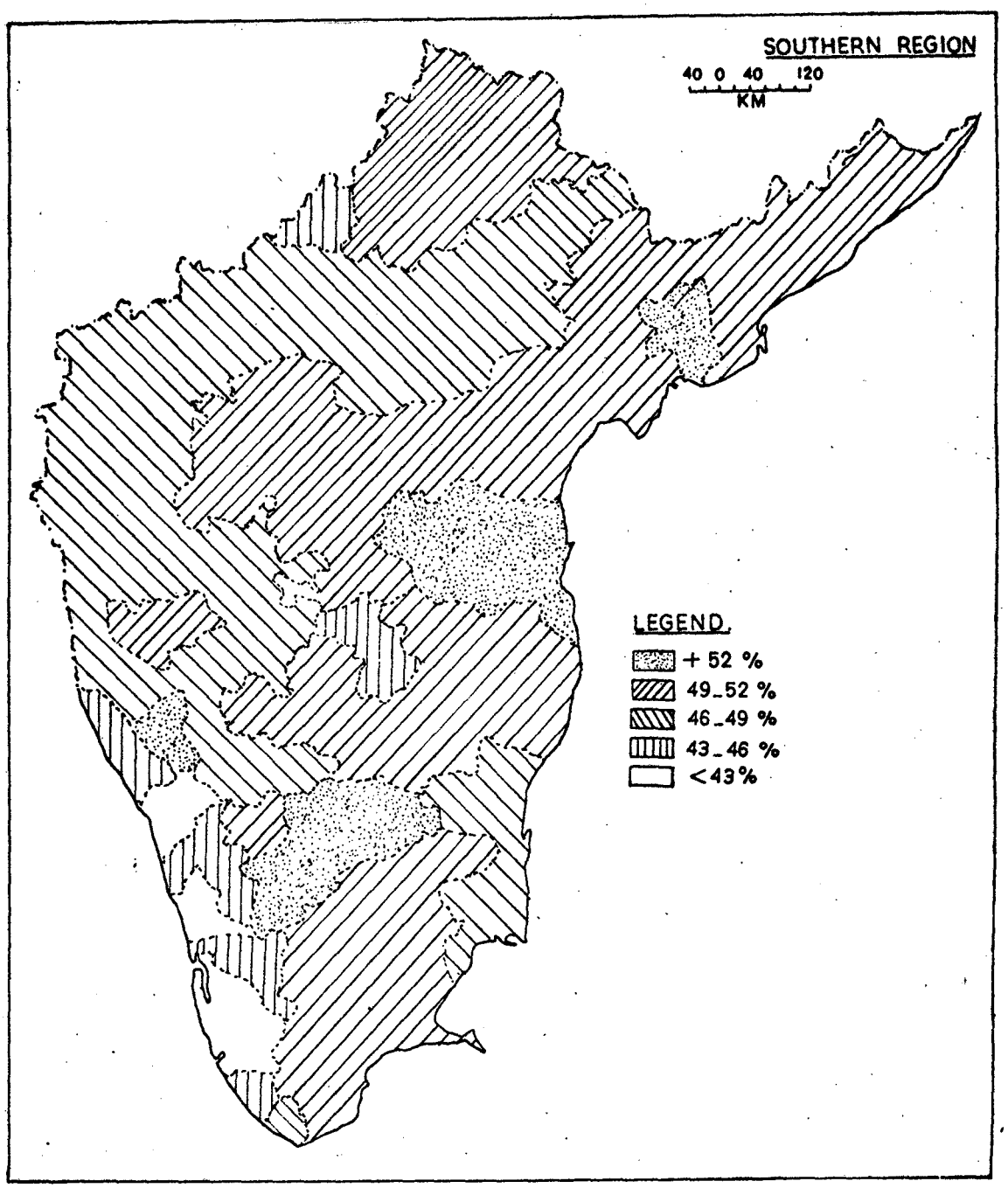

FIG.10. TOTAL URBAN MALE PARTICIPATION RATES.

Khammam and Krishna, female participation in economic is low (8 per cent to 11 per cent). Some of districts - Kurnool, Anadpur, Guntur, Ongole, Vellore, Mekele and Khrimnagar have a high urban female participation rate (Table 3.10; Fig.8,9).

In the western part of the region, particularly Telangana (unlike rural participation rates), female and male participation rate are quite high. In the coastel region male participation rates are quite high whereas female participation is relatively low (Table 3.10;3.11). The work rate of males is high in 14 out of 21 districts of Andhra Pradesh, Fig.10 (ranging between 49 per cent to 62 per cent). Male - female participation rates unlike in rural Andhra, are positively correlated.

Karnataka

Proportion of gainfully employed females in the urban Karnataka is 9.61 per cent against the 19.77 per cent in rural areas. However, this picture shows variations at district level. Urban female participation rate varies from 6.81% in Hassan to 21.27% in South Kanara. South Kanara is having very high participation rate in its rural areas also. Coorg is the another district which is having a higher participation rate in rural as well as in urban area which may be explained in terms of high proportion of tribal population.

Unlike rural Karnataka, in urban Karnataka except South Kanara, all the western and southern districts have a very low female participation rate (i.e. below 18 per cent) Bellary, Bijapur and Gulbarga shows a medium participation of

females ranging between 11 percent to 14 percent (Table 3.10; Fig.8,9).

In the western part of the Karnataka male and female participation is relatively higher than the eastern districts of the Karnataka. Most of the districts of Karnataka (11 out of 19 districts), have a medium male participation rate (46 per cent to 49 per cent) (Table 3.9,3.10; Fig.9). Male and female participation rate are positively correlated in urban Karnataka (r = .168). However the correlation coefficient is very weak and it does not conclude anything.

Kerala

Urban female participation in Kerala is 10.42 per cent against the national average of 6.6 per cent and is also lower than rural female participation rate. Urban female participation rate varies more than the rural female participation (Fig.4,5,8,9).

Urban female participation rates at district level varies from 6.99 per cent in Kozhikoda to 14.56 per cent in Palghat. The districts of Alleppy, Quilon, Trivendrum, Trichur and Cannore, are having female participation rate between 11 per cent to 14 per cent. Kozhikode and Malappuram shows a very low participation rate (Table 3.10, Fig.9,10). Five out of 10 districts are having medium participation rate of women workers.

In comparision to female participation rate, male participation rates are very low. Male - female participation

in economic activity are negatively correlated which implies that high male participation rate is accompanied by low female participation rate

Tamil Nadu

According 1971 census, urban female participation in Tamil Nadu is 9.14 per cent. However the picture is not uniform at district level. Urban female participation rate varies from 5.08 per cent in Madras to 21.43 per cent in Nilgiris.

Tirunelveli and Nilgiris are the two districts where urban female participation is quite high. Eastern districts of Tamil Nadu are having very low female participation rate (8 per cent). In Western districts of Tamil Nadu, female participation rate ranges between 11 per cent to 14 per cent (Fig. 8, 9).

Urban male participation rate is quite high in almost all the districts of Tamil Nadu. In 9 out of 14 districts, male participation rate varies between 49 percent to 52 percent (Table 3.1; Fig.9). In rest of the three districts - Kanniya Kumari, Thanjavur and South Arcot - male participation varies from 46% to 49%. The correlation between male and female participation rates is positive.

Variation in Education - Specific Urban Female Participation Rates

Andhra Pradesh : Participation rate of primary educated females, except the districts of Ongole and Karimnagar, are quite low in all other 19 districts (3 percent to 6 percent).

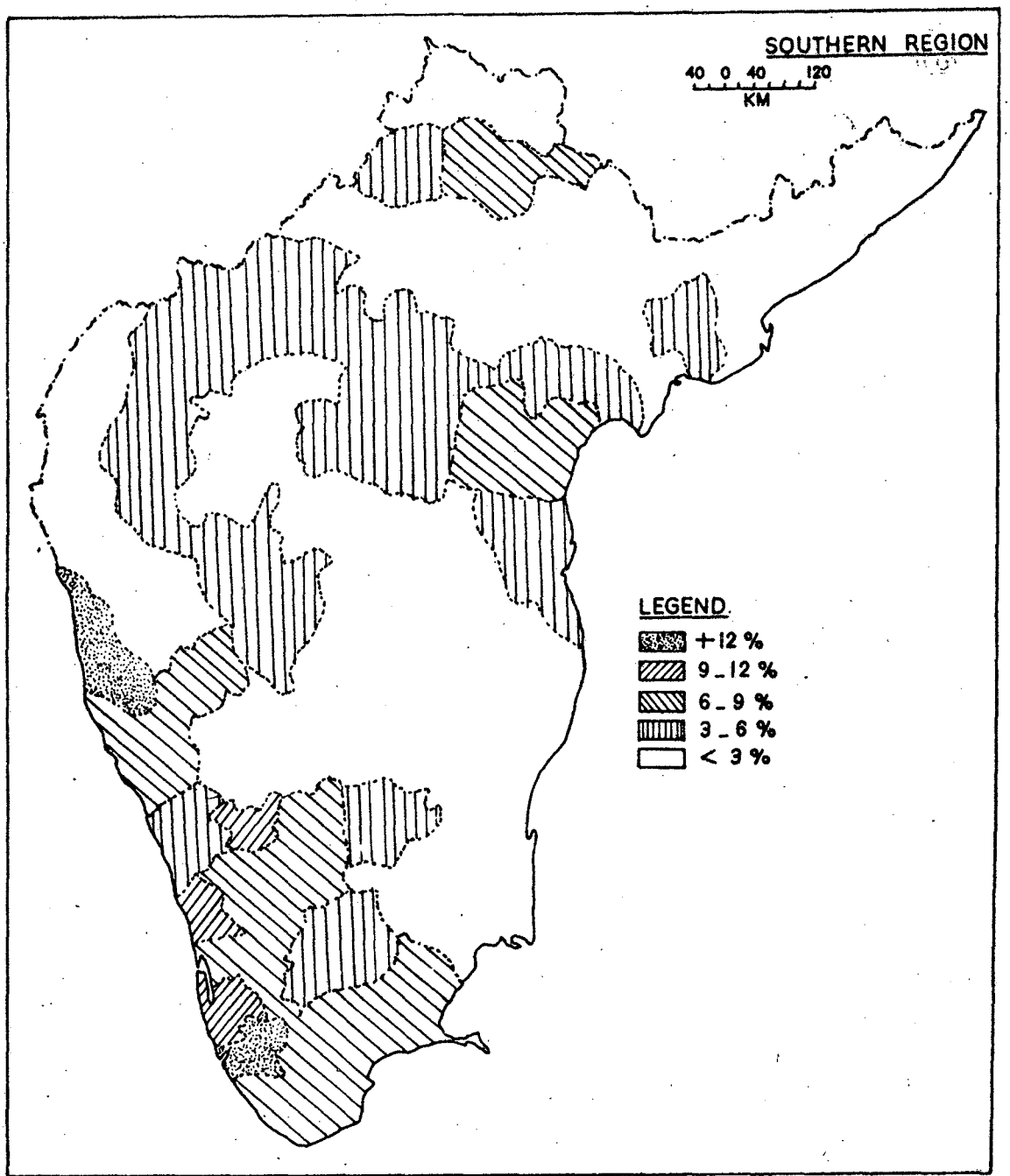

FIG. 1. URBAN FEMALE PARTICIPATION RATES OF PRIMARY EDUCATED FEMALES.

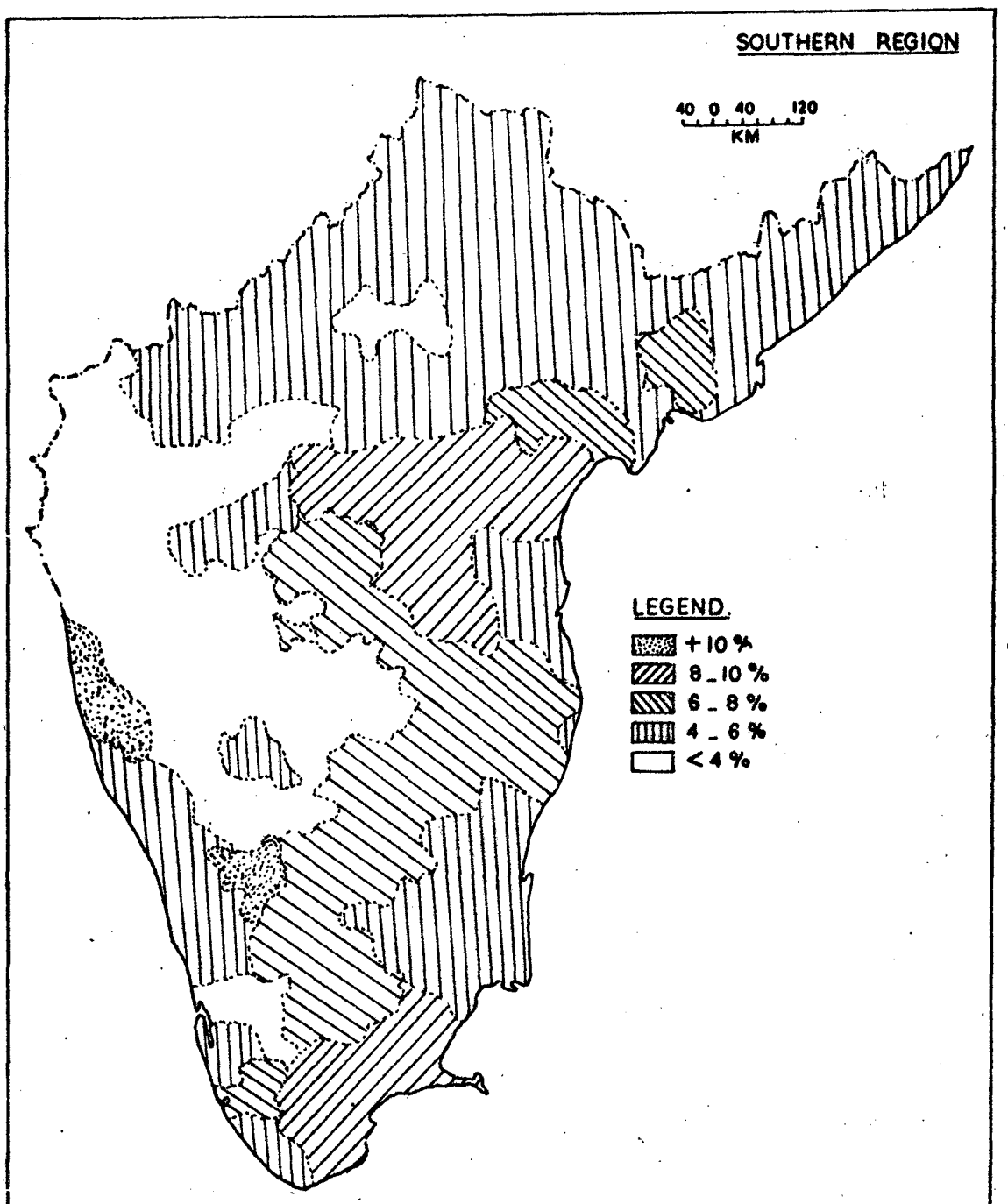

FIG. 12- URBAN FEMALE PARTICIPATION RATES OF MIDDLE EDUCATED FEMALES.

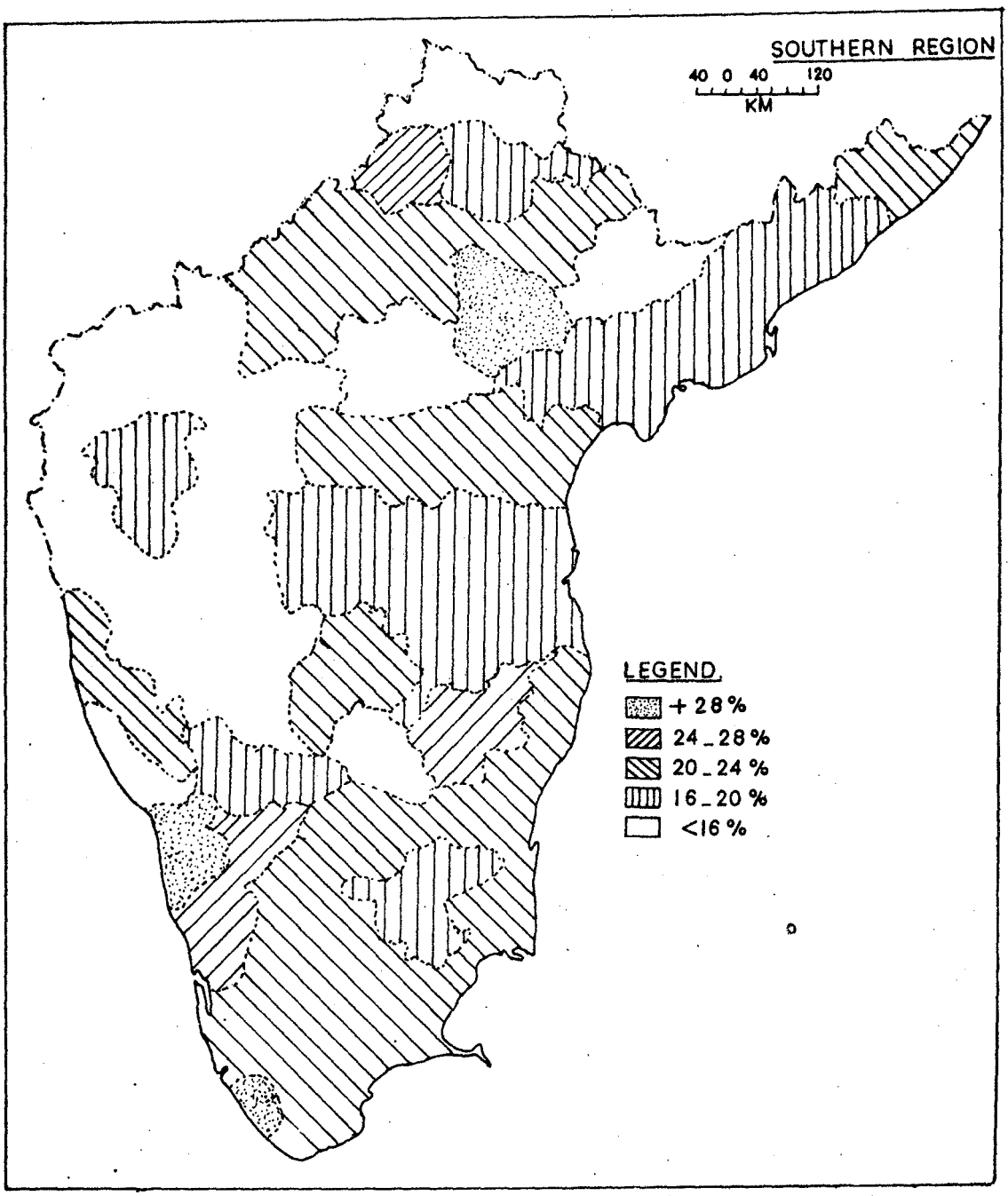

FIG.13. URBAN FEMALE PARTICIPATION RATES OF MATRIC AND ABOVE EDUCATED FEMALES.

TABLE NO. 3.13 (URBAN)

PARTICIPATION RATES OF PRIMARY EDUCATED FEMALES

PERCENTAGE	ANDHRA PRADESH		KARNATAKA		KERALA		TAMILNADU	
	No. of districts	% of districts	No. of districts	% of districts	No. of districts	% of districts	No. of districts	% of district
12+	0	0.00	1	5.26	1	10.00	0	0.00
9-12	0	0.00	0	0.00	2	20.00	1	7.24
6-9	2	9.52	2	10.53	5	50.00	4	28.57
3-6	6	28.57	5	26.32	2	20.00	2	14.29
Below 3	13	61.90	11	57.89	0	0.00	7	50.00
TOTAL	21	100.00	19	100.00	10	100.00	14	100.00

TABLE NO. 3.14 (URBAN)

PARTICIPATION RATE OF MIDDLE EDUCATED WOMEN

10+	0	0.00	1	5.26	0		1	7.14
8-10	3	14.29	0	0.00	0		2	14.29
6-8	4	19.05	0	0.00	1	10.00	6	42.86
4-6	13	61.90	3	15.79	7	70.00	5	35.71
Below 4	1	4.76	15	78.95	2	20.00	0	0.00
TOTAL	21	100.00	19	100.00	10	100.00	14	100.00

TABLE NO. 3.15 (URBAN)

PARTICIPATION RATIO OF MATRICULATION AND ABOVE EDUCATED WOMEN

28+	1	4.76	0	0.00	3	30.00	0	0.00
24-28	2	9.52	0	0.00	3	30.00	2	14.29
20-24	6	28.57	6	31.53	3	30.00	10	71.43
16-20	10	47.62	2	10.53	0	0.00	1	7.14
Below 16	2	9.52	11	57.89	1	10.00	1	7.14
TOTAL	21	100.00	19	100.00	10	100.00	14	100.00

Participation rates of middle educated women (Table 3.14; Fig.12) shows that three districts - Ongole, Cuddaph and Kurnool - constitute one region and have a high participation rate (8 percent to 10 percent). All other districts of Telangana and coastal Andhra with a few exceptions have a low participation of middle educated women.

Female participation rates of matric and above educated women shows a diversified trend (Table 3.15, Fig.13). All district of Rayalseema region except Kurnool have a low participation rate (16 percent to 20 percent). Mahboobnagar, Nizamabad and Nalgonda shows an extremely high participation rate.

Karnataka: Except the district of Nilgiris and South Kanara, participation rates of primary educated women are very low in rest of the districts. In South Kanara, participation rate is 18.71 per cent. At the middle level of education also, female participation rate is quite low in all the districts excepting South Kanara. Participation rate of high educated women does not show any diversified trend (Fig.11,12,13). In most of the districts, participation rate is low.

Kerala: Work participation rate of primary educated women in Kerala varies from 6 percent to 12 percent in all the districts excepting Kozhikode and Malappuram. Like other states, participation rates of middle educated women, is very low in all districts excepting Quilon, with a participation rate of 13.28 per cent. At the higher level of education participation rate of females is quite high (Table 3.15; Fig.13) in Kozhikode, Malappuram, Palghat, Trichur, Ernakulem, Kottayam and Trivendrum

i.e. 7 out of 10 districts representing 70% of the districts.

Conclusion:

The statewise analysis reveals that the female participation in economic activity is not uniform at the aggregative units. This variation is enormous at district level. However the analysis leads to several important conclusions:

(1) Female participation rate, both in rural and urban areas, is much lower than the male participation rate. (2) Rural female participation rate is much higher than the urban female participation rate. Spatial variations in rural female participation rate is higher than urban female participation rate. (3) High female participation rate may not necessarily mean a higher contribution in the work - force. This is dependent upon male participation rate. Regions with high female participation rate are characterised by a high male participation rate e.g., (in Andhra Pradesh). (4) Intra- regional variation seems to be low in states of high female participation (as in Andhra Pradesh) and maximum in the states of low female participation rates (as in Kerala). This fact points out that there is a consistency at every level in terms of female participation rates. (5) It is clear that rural female participation is low in plain areas of the states under study. In the plains more intensive cultivation, mechanization etc. make the agriculture male-biased. However, the degree of substitutability depends on the socio-cultural conditions prevalent in a region. As is evidenced from the plains of Andhra Pradesh where women still contribute significantly in the work-force. (6) In all the capital cities,

urban female participation is very low which probably can be explained in terms of high competition for jobs, lack of education and training and also the non-availability of jobs which can be combined with household work. (7) Intra-regional variations in literate rural female participation are maximum in the Kerala state with high literacy rates and minimum in Andhra Pradesh with low female literacy. (8) In the urban areas, intra-regional variations are enormous at higher levels of education in all the regions under study except Karnataka. At lower levels of education, variations in female participation rate are maximum in the regions of higher literacy. Two main regions can be identified with respect to the education specific participation rate (Fig.7,11,12,13). These are:

(a) Kerala, eastern districts of Tamil Nadu and a few coastal districts of Karnataka constitute one region and

(b) rest of the district belong to the second region.

3.3 Occupational Structure of Women Workers

Occupational structure of labour-force, its distribution among industrial categories, rural/urban and regional distribution within the country are highly relevant to the productivity and economic growth. An attempt at understanding the variations in the pattern of women participation in the various sectors of the economic activity (primary, secondary, tertiary). Education - specific female participation rates in the three main sectors of the economy have also been analysed.

Although there is no derth of material available on work participation in the Indian census yet the occupational distribution has remained a difficult task due to change in the definition of worker in different census. A change in definition has effected women worker more than male workers (as the marginal workers i.e. house wives were included in secondary workers in 1961 while in 1971, they were regarded as the non-workers). "To quote Daniel and Thorner in every census of India, since 1881, the occupational figures for females are more difficult to interprete than those for males. To large extent, in the Indian economy, the role of women has been and still auxilliary to that of the men. Accordingly it has always been hard to draw the line between those whose economic contribution has been substantial and those whose work, apart from domestic duties has been minor or negligible variation from census to census, either in total female working force or in the number of women recorded as engaged in particular occupations, may reflect shifts enumeration practice as much as genuine economic changes".

However quite aware of the limitations involved in such analycis, sectoral distribution of women workers (in the study area), has been attempted.

3.31 Sectoral - Distribution of Rural Female Workers

Andhra Pradesh: The proportion of female workers in primary, secondary and tertiary sector is 88.3 per cent, 5.90 per cent and 6.07 per cent respectively, at the state level. However the picture is not same at district level. The proportion of female workers in primary sector varies from 75 per cent in Nizamabad to

TABLE NO. 3.16 RURAL

SHARE OF FEMALE WORKERS IN THE PRIMARY SECTOR

PERCENTAGE	ANDHRA PRADESH		KARNATAKA		KERALA		TAMIL NADU	
	No. of districts	% of districts	No. of districts	% of districts	No. of districts	% of districts	No. of districts	% of dist.
90+	5	23.81	6	31.58	0	0.00	7	53.85
77-90	15	71.43	11	57.89	3	30.00	4	30.77
64-77	1	4.76	2	10.53	2	20.00	1	7.69
51-64	0	0.00	0	0.00	3	30.00	0	0.00
38-51	0	0.00	0	0.00	2	20.00	0	0.00
Below 38	0	0.00	0	0.00	0	0.00	1	7.69
TOTAL	21	100.00	19	100.00	10	100.00	13	100.00

TABLE NO. 3.17 RURAL

SHARE OF FEMALE WORKERS IN THE SECONDARY SECTOR

40+	0	0.00	0	0.00	2	20.00	0	0.00
31-40	0	0.00	0	0.00	0	0.00	1	7.69
22-31	0	0.00	1	5.26	1	10.00	0	0.00
13-22	1	4.76	0	0.00	3	30.00	1	7.69
4-13	14	66.67	15	78.95	4	40.00	5	38.47
Below 4	6	28.57	3	15.79	0	0.00	6	46.15
TOTAL	21	100.00	19	100.00	10	100.00	13	100.00

TABLE NO. 3.18 RURAL

SHARE OF FEMALE WORKERS IN THE TERTIARY SECTOR

17+	0	0.00	0	0.00	5	50.00	1	7.69
14-17	0	0.00	0	0.00	2	20.00	0	0.00
11-14	0	0.00	3	15.79	1	10.00	0	0.00
8-11	1	4.76	2	10.52	1	10.00	0	0.00
5-8	13	61.90	8	42.12	1	10.00	5	38.46
Below 5	7	33.33	6	31.57	0	0.00	7	53.85
TOTAL	21	100.00	19	100.00	10	100.00	13	100.00

Anantpur. Vizhakhapatnam (coastal Andhra), Chittor and Kurnool (Rayelseema) and Medak (Telangana) shows an extremely high concentration of women workers in the primary sector (— 90 per cent; Fig.11). Fifteen districts out of 21 districts show female participation in primary sector ranging between 77 percent to 90 percent (Table 3.16; Fig.14a).

The proportion of workers in secondary sector, varies between 30 percent in Chittor to 21 percent in Nizamabad. Female workers participation in secondary sector ranges between 4 percent to 13 percent in as much as 14 out of 21 districts (Table 3.17; Fig.12,14b).

The tertiary sector accounts for a low proportion of female workers in Andhra Pradesh. East Godavari is the only district having 9 percent of women workers in tertiary sector. The share of workers varies from 5 percent to 8 percent in 61.90 percent of the districts (Table 3.18; Fig.14c). Almost all eastern districts of Andhra Pradesh, have a very low proportion of female workers in tertiary sector proportion of female (— 5 percent; Fig.13).

Karnataka

At the state level, the sectoral distribution of women workers shows that employment of female workers is concentrated in the primary sector (85.77 percent), secondary and tertiary sector accounting for a very small share of total women workers (8.03 percent and 6.20 percent respectively). But this does not remain consistent at districts level.

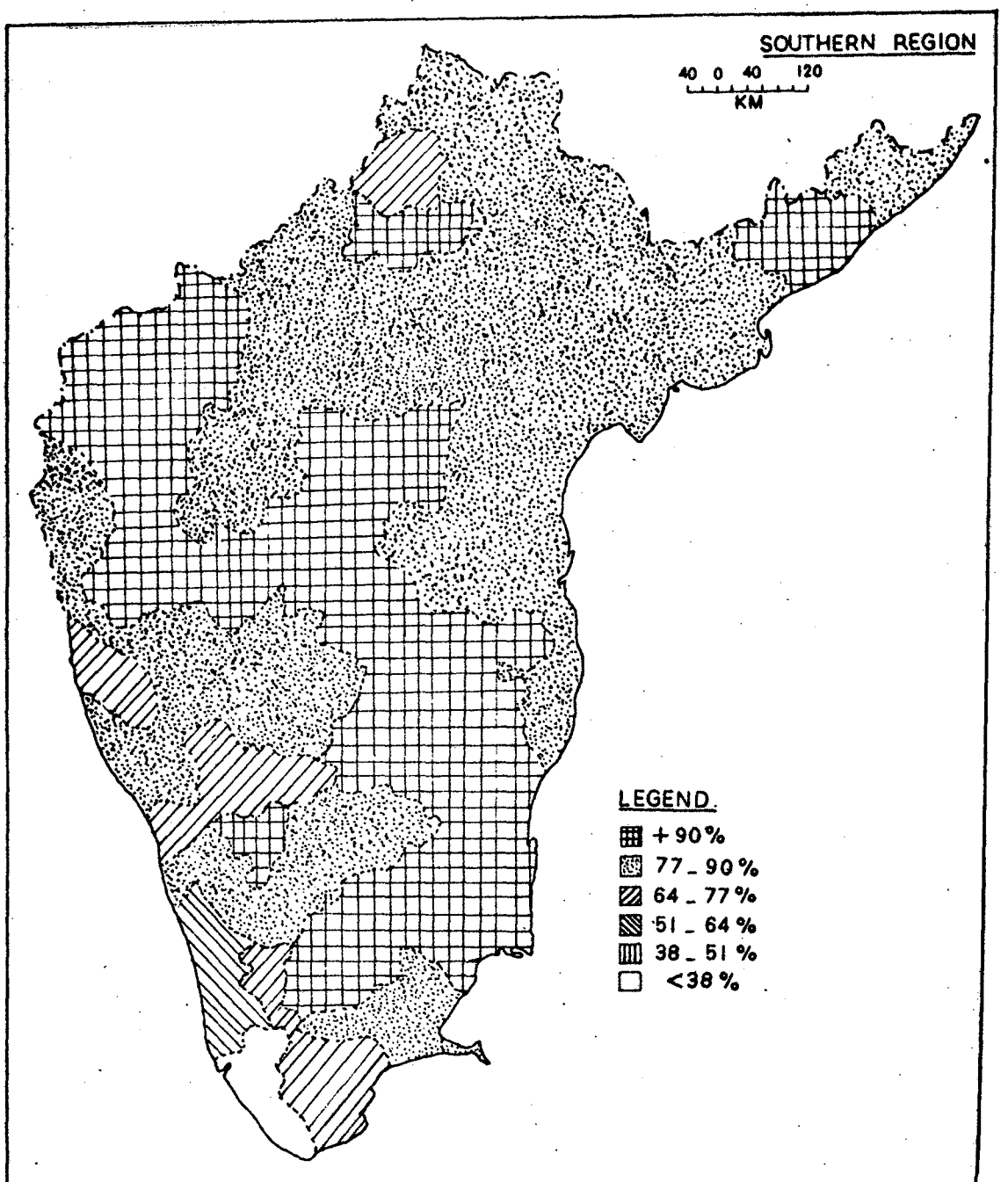

FIG.11 FEMALE PARTICIPATION RATES IN PRIMARY SECTOR, RURAL AREA.

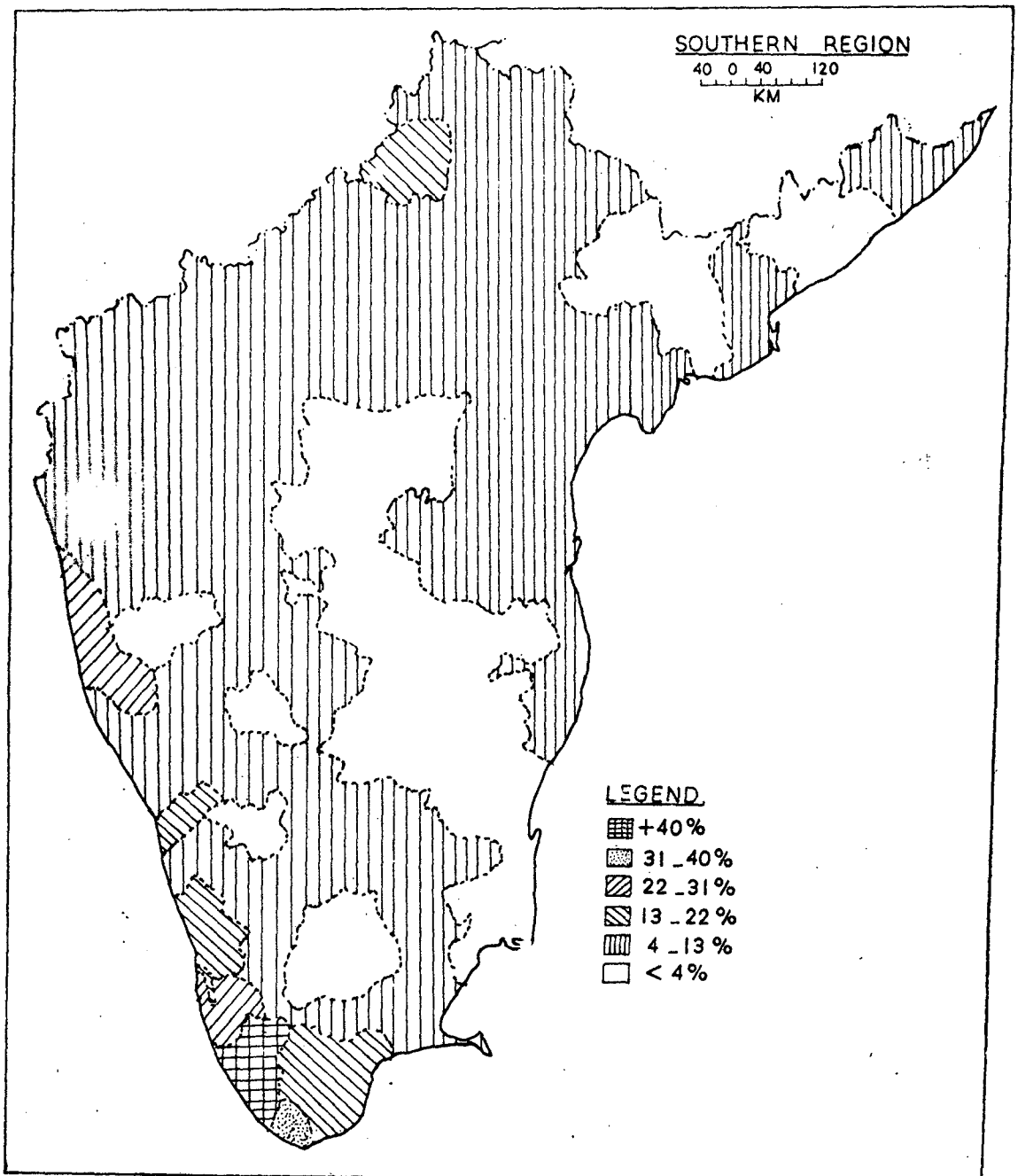

FIG. 16 FEMALE PARTICIPATION RATES IN SECONDARY SECTOR, RURAL AREA.

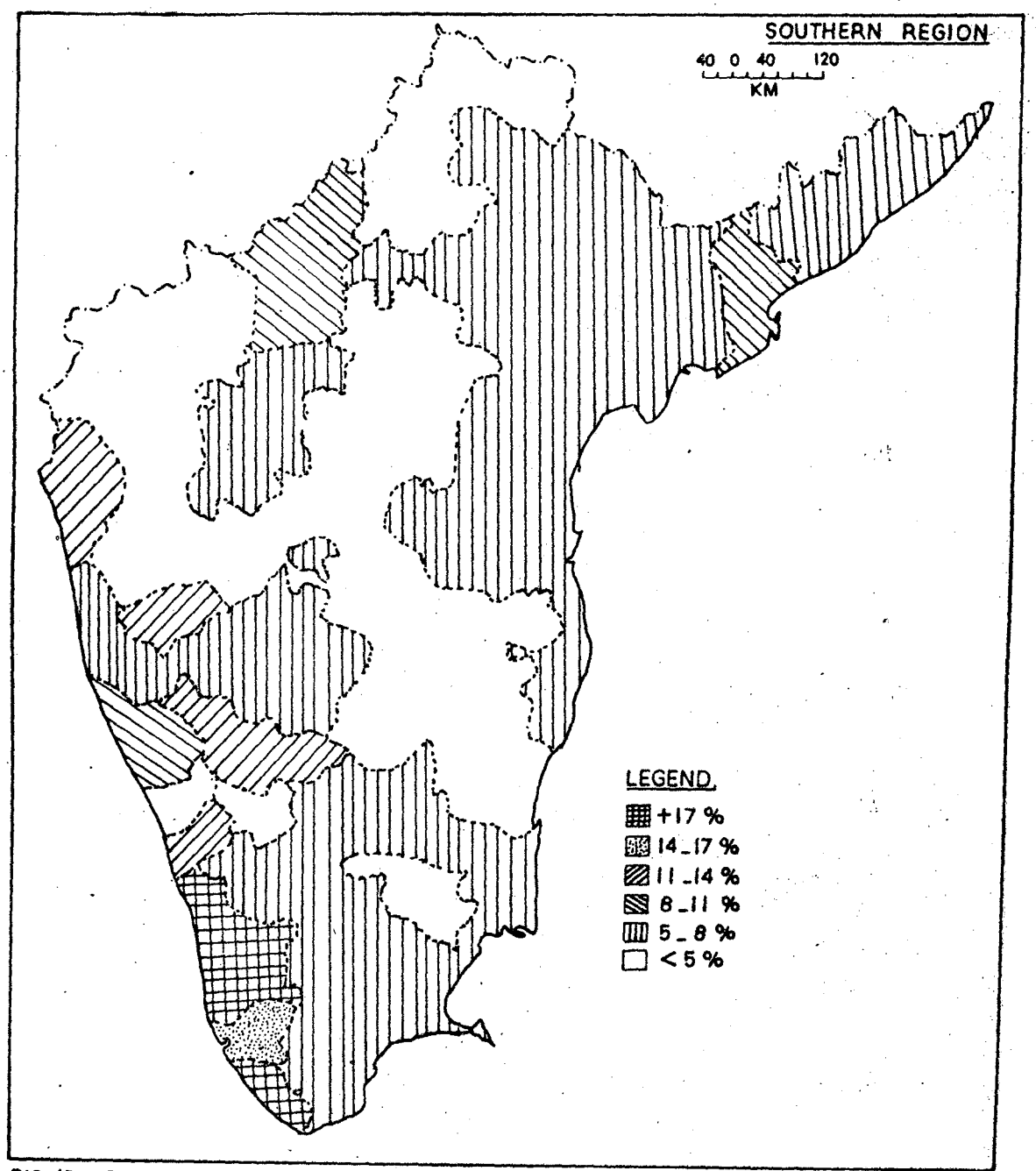

FIG. 17 FEMALE PARTICIPATION RATES IN TERTIARY SECTOR , RURAL AREA.

Proportion of female workers in primary sector varies from 72 percent in South Kanara to 94 percent in Kolar. In 5 out of 19 districts, ratio of female workers in primary sector is extremely high (— 90 percent). Except Mysore and South Kanara, share of workers in primary sector varies between 77 percent to 90 percent (Table 3.16; Fig.11, 14a).

Unlike rural Andhra Pradesh and Tamil Nadu proportion of female workers in Secondary sector varies between 4 percent to 13 percent in 16 out of 19 districts (Table 3.17; Fig.12, 14b). South Kanara is the only districts with 22.13 percent of women workers employed in secondary sector.

Table 3.16 shows that share of female workers in tertiary sector is not very significant. Except South Kanara, Mysore and Chickmaglur; female worker in tertial sector forms a very low share among total female workers. In 8 out of 19 distrixts, it varies between 5 percent to 8 percent, while in other 6 districts, female participation is very low (—5 percent).

Kerala: In Kerala, sectoral distribution of female workers shows that the proportion of workers in primary sector are lower (— 64.6 percent) and the proportion of workers in secondary and tertiary sector are highor (20.42 percent and 14.97 percent respectively) than the other states under study. But this trend is not uniform at district level.

Share of female workers in primary sector varies from 29 percent in Quilon to 87 percent in Palghat. Districts of Cannore, Malappuram and Palghat, show that ratio of female workers in primary sector varies between 77 percent and

90 percent. Quilon and Trivendrum have a very low female participation in primary sectors. It is quite evident from Table 3.16 and Fig.11,14a that share of workers in primary sector varies a lot in comparison to Andhra, Karnateka and Tamil Nadu where concentration of workers ranges from 77 percent to 90 percent.

Quilon shows highest proportion of workers in secondary sector (55 percent) while Palghat has the lowest proportion of female workers (5 percent), contrarily to primary sector's worker distribution. Figure 14b shows the variable distribution of workers in secondary sector (Table 3.17; Fig.11).

Proportion of female workers in tertiary sector are highest in Kerala among all the four states. Five out of 10 districts are having a very high proportion of workers in tertiary sector (Table 3.18; Fig.12,14c).

Tamil Nadu: At the aggregate level, sectoral distribution of female workers in primary, secondary sector and tertiary sector is 87.12 percent, 7.24 percent and 5.64 percent respectively. While at the district level, a greater variation is perceptible. Proportion of workers in primary sector varies from 37 percent in Kanniya Kumari to 94 percent in South Arcot. Table 3.16 and Fig.14a shows that seven districts have a very high concentration, (90 percent) most of which are in the western and central part of Tamil Nadu. Excepting Kanniya Kumari, a very high proportion of workers are concentrated in primary sector (Fig.11).

The secondary sector (Table 3.17; Fig.12,14b) accounts for a very small proportion of total female workers in 6 out of 19 districts, the proportions varying between 1 percent to 4 percent. Five districts show a low participation rate varying between 4 percent to 13 percent. Kanniya Kumari is the only districts having 36 percent of workers in secondary sector. The pattern remains almost identical in tertiary employment of women workers. All the districts, except Kanniya Kumari, are having a very low proportion of workers in tertiary sector. In 7 out of 13 districts, female participation is below 5 percent.

In rural areas of all the states, female workers are concentrated in primary sector (Table 3.16; Fig.11,14a) excepting few coastel districts of Kerala. The opposite holds true for secondary and tertiary sectors in all states. Only a few districts of ~~Kerala~~ Tamil Nadu and almost all the districts of Kerala show a higher proportion of female workers in secondary and tertiary sectors.

3.32 Sectoral - Distribution of Urban Female Workers:

Andhra Pradesh : Sectoral- distribution of women workers indicates, that they are concentrated in the tertiary sector (39 percent) followed by the primary sector (33 percent) and secondary sector (97 percent). The variation at district level are more in comparison to urban areas of the state. The proportion of workers in primary sector varies from 11 percent in Hyderabad to 57 percent in Srikakulam. Srikakulam, West Godavari (Coastal region), Mehboobnagar, Medak and Nalgonda from Telangana shows an extremely high concentration of women

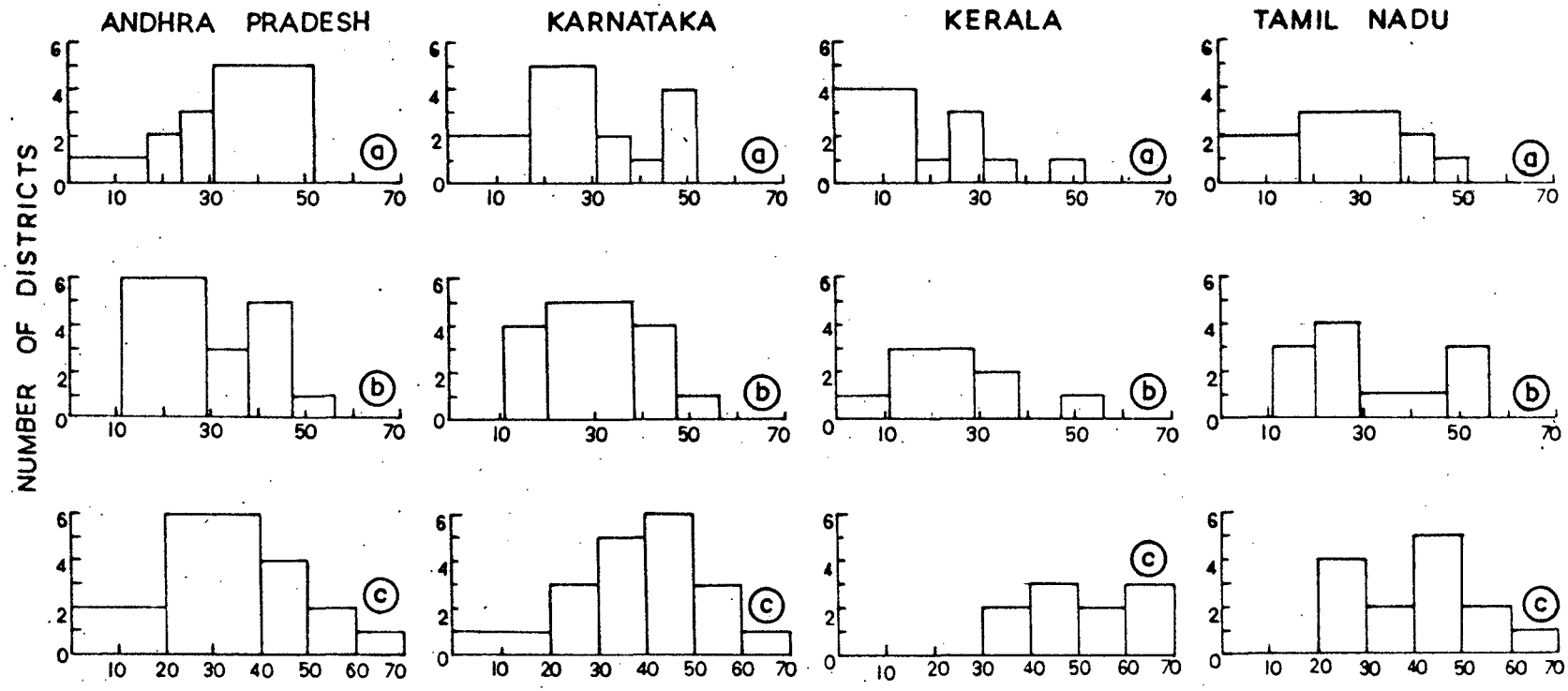

FIG.18. SECTORAL DISTRIBUTION OF URBAN FEMALE WORK FORCE.

TABLE NO. 3.19 (URBAN)

SHARE OF FEMALE WORKERS IN THE PRIMARY SECTOR

PERCENTAGE	ANDHRA PRADESH		KARNATAKA		KERALA		TAMIL NADU	
	No. of districts	% of districts	No. of districts	% of districts	No. of districts	% of districts	No. of districts	% of districts
45+	5	23.81	4	21.05	1	10.00	1	7.13
38-45	5	23.81	1	5.26	0	0.00	2	14.29
31-38	5	23.81	2	10.53	1	10.00	3	21.43
24-31	3	14.29	5	26.32	3	30.00	3	21.43
17-24	2	9.52	5	26.32	1	10.00	3	21.43
Below 17	1	4.76	2	10.52	4	40.00	2	14.29
TOTAL	21	100.00	19	100.00	10	100.00	14	100.00

TABLE NO. 3.20 SHARE OF FEMALE WORKERS IN THE SECONDARY SECTOR (URBAN)

47+	1	4.76	1	5.26	1	10.00	3	21.43
38-47	5	23.81	4	21.05	0	0.00	1	7.14
29-38	3	14.29	5	26.32	2	20.00	1	7.14
20-29	6	28.57	5	26.32	3	30.00	4	28.58
11-20	6	28.57	4	21.05	3	30.00	3	21.43
Below 11	0		0	0.00	1	10.00	2	14.28
TOTAL	21	100.00	19	100.00	10	100.00	14	100.00

TABLE NO. 3.21 SHARE OF FEMALE WORKERS IN TERTIARY SECTOR (URBAN)

60+	1	4.77	1	5.26	3	30.00	1	7.14
50-60	2	9.52	3	15.79	2	20.00	2	14.29
40-50	4	19.05	6	31.58	3	20.00	5	35.71
30-40	6	28.57	5	26.32	2	20.00	2	14.29
20-30	6	28.57	3	15.79	0	0.00	4	28.57
Below 20	2	9.52	1	5.26	0	0.00	0	0.00
TOTAL	21	100.00	19	100.00	10	100.00	14	100.00

workers in primary sector. All the districts of Rayalseema, shows a female participation ranging between 38 percent to 45 percent (Table 3.19, Fig.8a,11).

In secondary sector, Guntur is the only district having female work participation rates more than 47 percent. Ongole from Coastal Andhra and Adilabad, Nizamabad, Karimnagar, and Wrangal from Rayalseema are having, female participation rate between 38 percent to 47 percent (Table 3.20; Fig.8b,9), 11 percent to 29 percent in 57 percent of the districts understudy (Table 3.20).

Tertiary sector employs a significant proportion of workers in Andhra Pradesh. It varies from 17 percent in Karimnagar to 68 percent in Hyderabad. In contract to rural female participation rate in this sector, urban female participation rate shows a wide variation over space (Fig.18c,21).

Karnataka:

The female work force is largely concentrated in the tertiary sector (39.37 percent). Secondary and primary sector account for 28.15 percent and 32.42 percent of the female work force respectively. However the uniformity of the picture is disturbed when one moves to district level. In a majority of districts, the low portion of female workers in the tertiary sector varies between 30 percent to 60 percent. Banglore is the only district where more than 60 percent of females are employed in tertiary activities. While in Bijapur only 19.75 percent of females are employed in tertiary activities (table 3.20 and Fig.8c,21).

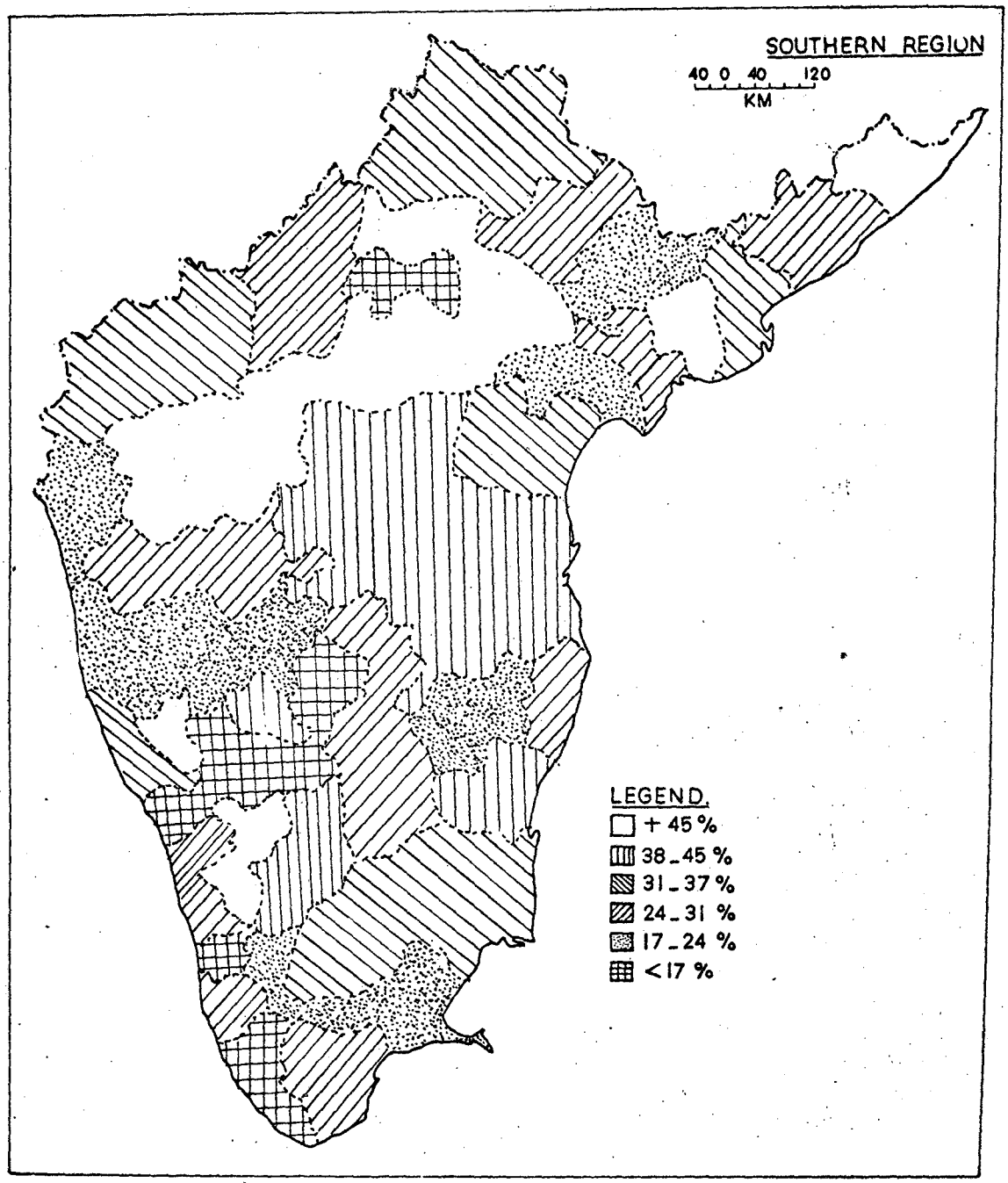

FIG. 19, FEMALE PARTICIPATION RATES IN PRIMARY SECTOR URBAN AREA.

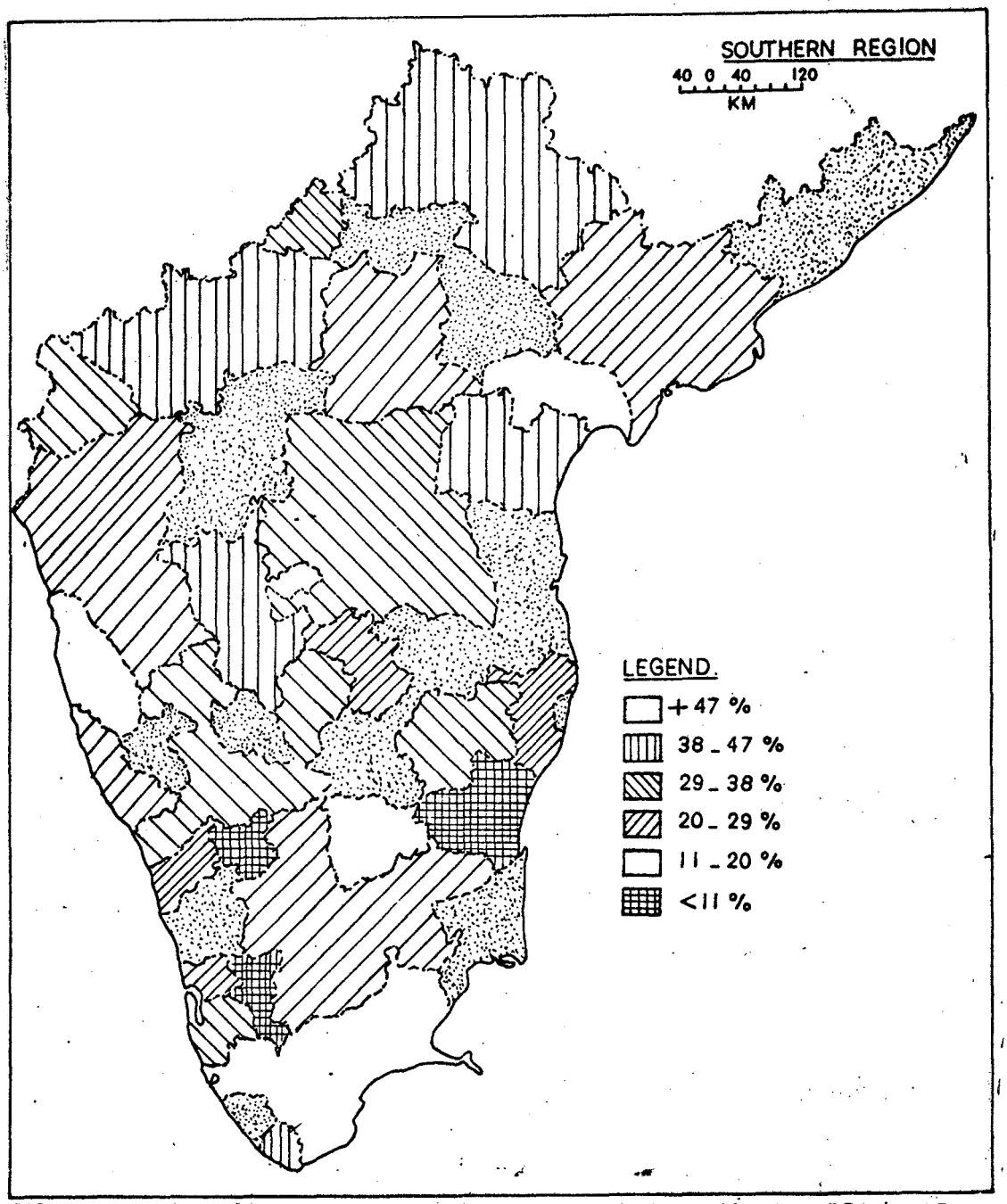

FIG. 20 FEMALE PARTICIPATION RATES IN SECONDARY SECTOR, URBAN AREA.

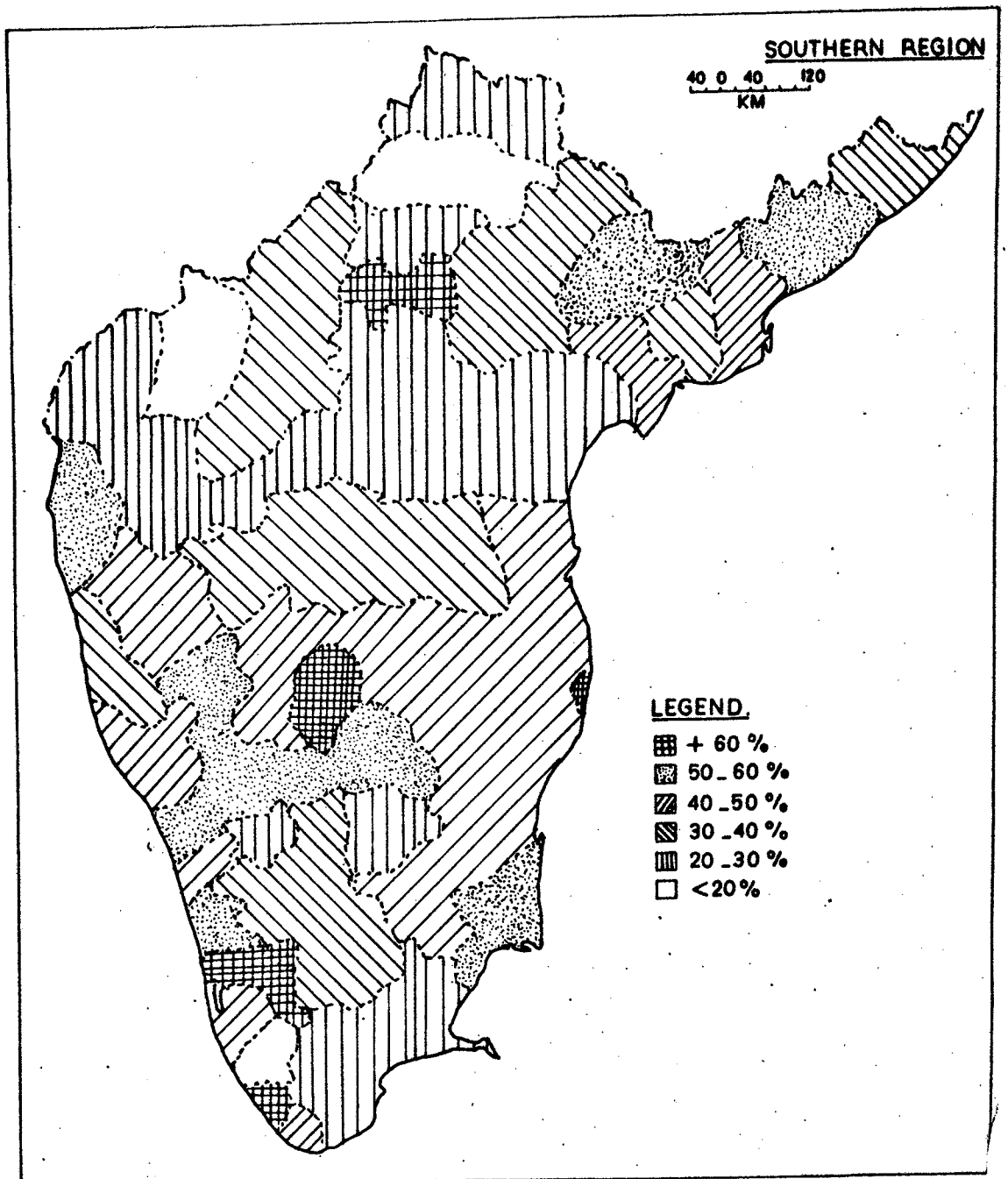

FIG. 21. FEMALE PARTICIPATION RATES IN TERTIARY SECTOR URBAN AREA.

Table 3.20 and Fig.3a,20) shows it quite clearly that the share of female workers in secondary sector varies from 13 percent in Coorg to 50 percent in South Kanara. Most of the northern and eastern districts of Karnataka, are having female participation rates ranging between 29 percent to 47 percent. Proportion of workers in primary sector are much lower in comparison to secondary and tertiary sectors. It varies between 24 percent to 45 percent in 18 out of 21 districts (i.e. 86 percent of the districts). Female participation in primary sector is very low in the districts of Bangalore, Mysore, Chickmaglur, Hassan and Tumkur. Coorg, Bellary, Raichur and Dharwar forms a region of high female participation in primary sector (45 percent, Table 3.19; Fig.8a,19).

Kerala

At the state level, the female work-force is extremely concentrated in the tertiary sector. The employment of females in tertiary sector is 55.42 percent whereas the secondary and primary sector accounts for 24.34 percent and 20.25 percent of the female work-force respectively.

The share of workers tertiary activity is highest in the Trivandrum with 72.9 percent of work force. Excepting Quilon and Palghat, proportion of female workers in tertiary sector varies between 30 percent to 60 percent, claiming 80 percent of the districts. Trivendrum, Ernakulum and Kottayam are having extremely high proportion of workers in tertiary activities (Table 3.21; Fig.18c,21).

Table No.3.22 Sectoral Distribution of Rural Female Workers by Levels of Education

Andhra Pradesh

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+ MTD+ TD	Gd & above
1	Primary	88.03	88.73	80.51	80.39	39.37	9.00	5.52
2	Secondary	5.90	5.72	10.35	11.39	8.53	2.31	1.72
3	Tertiary	6.07	5.55	9.14	8.22	52.10	88.70	92.76

Karnataka

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+ MTD+ TD	Gd & above
1	Primary	85.77	87.38	68.02	77.03	63.05	17.10	4.71
2	Secondary	8.03	7.20	23.79	16.32	15.45	7.00	6.04
3	Tertiary	6.20	5.43	8.19	6.66	21.54	75.90	89.25

Kerala

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+ MTD+ TD	Gd & above
1	Primary	64.61	75.65	59.96	58.91	42.95	2.45	0.74
2	Secondary	20.42	16.57	28.71	30.44	30.79	2.66	0.86
3	Tertiary	14.97	7.77	11.33	10.64	26.26	94.85	98.40

Tamil Nadu

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+ MTD+ TD	Gd& above
1	Primary	87.12	89.88	26.28	74.30	33.23	7.02	0.65
2	Secondary	7.24	6.31	17.97	18.47	8.97	4.25	2.32
3	Tertiary	5.64	3.81	5.75	7.23	57.80	88.73	96.84

Table No.3.23 Sectoral Distribution of Urban Female Workers by Levels of Education

Andhra Pradesh

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+MTD+TD	Gd & above
1	Primary	33.13	38.64	19.29	18.84	3.89	0.40	0.29
2	Secondary	27.95	29.48	44.41	38.91	14.27	6.69	2.55
3	Tertiary	38.91	31.88	36.31	42.25	81.84	92.91	97.16

Karnataka

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+MTD+TD	Gd & above
1	Primary	28.15	36.54	20.20	17.35	8.01	0.93	0.20
2	Secondary	32.42	33.49	46.10	52.33	32.65	16.25	4.92
3	Tertiary	39.37	29.97	33.70	30.32	59.34	82.82	94.87

Kerala

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+MTD+TD	Gd & above
1	Primary	20.25	32.32	19.81	19.64	12.73	0.58	0.05
2	Secondary	24.34	25.40	30.97	38.86	33.54	4.28	1.67
3	Tertiary	55.42	42.28	49.22	41.50	53.73	95.13	98.28

Tamil Nadu

S.No.	Name of the Sector	Total	Illi-terate	Literate without education level	Primary	Middle	Mt+MTD+TD	Gd & above
1	Primary	29.58	39.79	21.38	20.29	4.84	0.42	0.04
2	Secondary	31.47	33.76	53.38	51.04	16.90	6.97	2.39
3	Tertiary	47.69	26.44	25.05	28.67	78.26	92.62	97.57

and South Arcot. Only 2 districts out of 13 show a lower proportion of workers in primary sector (Table 3.19, Fig.8a).

3.4 Sectoral Distribution of Rural/Urban Females by Levels of Education :

At the lower levels of education, a significant proportion of female workers are engaged in primary activities. At the middle level of education, maximum proportion of workers are engaged in tertiary sector and it continues after that at all the levels of education. However, in urban areas of Andhra Pradesh and Kerala, female participation in tertiary sector starts just after the literate without education level. Table 3.22 and 3.23 indicate that with an increase in level of education, proportion of female workers in tertiary sector increases and at higher levels of education (graduate and above) almost 90 percent of female workers are engaged in it. However this picture does not remain constant if we analyse it at district level in rural/urban areas of all the states under study.

Looking at the district level both in rural/urban areas, at higher levels of education (matriculation and above), variation in the proportion in primary sector are enormous comparative to lower levels of education. In almost all the districts female workers with graduate and above qualification are employed in tertiary sector with a few exception. In some of the districts female workers with graduate and above level are employed in primary sector as cultivators or in plantation. This may be explained in terms of non-availability of suitable jobs or socio-culture norms restricting the participation of women in economic

activity outside home town.

Conclusion:

(1) Female workers in rural areas of all the states are concentrated in the primary sector while in urban areas they are concentrated in secondary and tertiary sector.

(2) In the rural areas of all the states except a few coastal districts of Kerala, female participation in primary sector is very high and opposite is true in case of secondary and tertiary sector.

(3) In the urban areas of all the states under study, female participation in primary sector is quite high in the districts of Rayalseema, Srikakulam and West Godavari from Coastel Andhra and few districts of Telangana, Coorg Dharwar, Bellany, Raichur from Karnataka and Nilgiris, Coimbator and South Arcot from Tamil Nadu. Secondary sector share maximum proportion of workers in Northern districts of Andhra and Karnataka, Southern districts of Tamil Nadu, whereas proportion of workers in tertiary sector is good in coastal districts of Kerala, Mysore, North-Kanara from Karnataka and all the capital cities of Southern Region.

(4) Education leads to tertiarization i.e. with the increase in levels of education, female participation intertiary sector starts increasing and higher level almost 100 percent of workers are employed in it.

CHAPTER - 4

FACTORS INFLUENCING FEMALE PARTICIPATION IN NON-DOMESTIC WORK: AN ATTEMPT AT EXPLANATION

4.1 Introduction

As observed in the preceeding chapter, female participation rate varies widely from one region to other. The present chapter is devoted to an analysis of the influencing factors, particularly with reference to the participation of women in economic activity. The task of identifying these factors is, however, not simple as it involves a number of difficulties: Firstly women participation in non-domestic work depends not only on economic variables but also on socio-cultural and demographic factors which influences women more than their male counterparts. Secondly socio-cultural factors vary from one region to other and are difficult to quantify;

and finally women's reproductive behaviour also affects the participation rate. All the above mentioned factors add to the complexity of the problem. Viewed thus, Raju[1] puts women participation in economic activity in India as a multi-dimensional interaction of social attitude, the institutional infrastructure and the traditional norms regarding females and these vary tremendously in different regions. Therefore, it would be altogether unwise to work at the impact of any one of the single variables on women activity rate. In this study some of the important factors influencing female participation rates are chosen and for the sake of convenience have been considered independently.

Section 4.2 begins with an analysis of correlation results for identifying the factors responsible for high or low female participation rates. Section 4.3 brings out the importance of various factors in explaining spatial variations in female participation rates with the help of step-wise and multiple regression analysis.

4.2 Influence of Economic, Demographic and Socio-Cultural Variables on Women Participation Rates:

The women participation rates are considered with respect to the following variables:

4.21 Economic Variables: Economic variables influencing the the demand and supply of workers are important in determining the pattern and extent of women activity rate. Demand is

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1. Raju, S.; "Sites in the city: A Socio-geographic analysis of Female Employment in Urban India", University of Syracuse, Discussion Papers, 1981 pp.13.

determined by the availability of jobs for women and supply by the economic needs of the family. The influence of selected economic factors on women participation rate is discussed here. As indicated earlier, the following economic factors have been considered for the present analysis.

(A) Manufacturing Establishments Per 1000 of Women Population (Urban Areas)

Manufacturing establishments[2] per 1000 of women population are expected to have a favourable impact on female employment as their existence in a region enhances the employment opportunities available to women. This may be possible because a large proportion of manufacturing establishments consists of household industries and unregistered factories which relatively require lower levels of education and skill, and therefore, offer enough employment to women who generally possess lower levels of education and skill than their male counterparts. Moreover, the lower wages offered and insecurity of jobs in these industries attract a lower proportion of male workers relative to their female counterparts[3]. These factors result in a higher employment of women in such industries. This probably explain the positive relationship between female participation rate and number of manufacturing establishments

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2. Manufacturing establishments consist of household industries, registered and unregistered factors as defined Census, 1971, Establishment Table, p.1.

3. Female workers accept lower wages than male workers as they have to earn a subsistence when male member of the household do not accept lower wages for the fear of losing either his value in labour market or in the social sphere.

TABLE No. 4.1

CORRELATION BETWEEN FEMALE PARTICIPATION RATE AND EXPLANATORY VARIABLE (RURAL AREAS)

Name of Variable	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	Southern Region
X_1	.244	.585**	.429	.462	.581***
X_2	.541*	- .326	.423	.036	.122
X_3	-.550**	.022	.521	.087	.279*
X_4	.478*	470*	-.278	*.322	*.213
X_5	-.685***	- .101	-.605	-.636	-*.477***
X_6	-.576**	- .204	.038	-.761**	-.603***
X_7	-.561**	.155	-.150	.149	-.021
X_8	-.031	.217	.199	.350	.513***
X_9	-.582**	.022	.206	.044	.094
X_{10}	-.299	- .001	.034	-.002	-.012
X_{11}	.167	.434	.596	.434	.126
X_{12}	.447	- .332	-.246	-.322	.047
X_{13}	.096	.517*	.396	.377	-.053
X_{14}	-.658**	.483*	-.349	-.489	-.447***
X_{15}	.281	-.435	.439	.193	.067
X_{16}	-.339	.658**	-.059	-.169	.274*
X_{17}	.519*	-.334	-.073	.519	.567***
X_{18}	.005	.092	.422	.527	.441
X_{19}	.346	.540*	-.247	-.583*	-.289*
X_{20}	.040	-.575**	.591	.593	.314*
X_{21}	.376	.497*	-.209	-.251	-.152
Female participation rate vs. proportion of literate with low levels of education	.213	-.670*	-.043	-.500	.198
Female participation rate vs. proportion of literates with medium levels of education	-.292	.294	.239	.475*	-.119
Females participation rate vs. proportion of literates with high levels of education.	.098	- .209	.167	.501*	-. 303*

Levels of significance : 1 * P > .05
2 ** P > .01
3 *** P > .001

TABLE NO.4.2

CORRELATION BETWEEN FEMALE PARTICIPATION RATES AND EXPLANATORY VARIABLES (URBAN AREAS)

Name of Variable	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	Southern Region
X_1	.644**	.278	.719*	.160	.327**
X_2	.598**	.224	.311	.559*	.435***
X_3	.538*	.346	- .184	.308	.293*
X_4	.308	.124	.072	.119	.150
X_5	-.651	-.470*	.038	-.675**	-.459**
X_6	-.431*	-.424	- .219	-.544*	-.439
X_7	-.805	-.402	-.423	-.728**	-.471***
X_8	.302	.522**	.225	.143	.290*
X_9	.263	.350	-.585	-.128	-.091
X_{10}	-.422	-.093	-.334	.778	.008
X_{11}	.453	.614**	-.123	.168	.235*
X_{12}	-.468*	.114	.205	-.336	-.128
X_{13}	-.262	-.433**	.578	.421	-.066
X_{14}	.058	.211	.061	.613*	.228
X_{15}	.018	-.588**	-.271	.260	-.051
X_{16}	.270	.570*	-.188	-.415	.209
X_{17}	.047	.474*	.133	.273	.150
X_{18}	- .182	-.152	.539	-.272	.066
X_{19}	.178	-.059	-.544	-.029	-.051
X_{20} Female participation rates vs. literates with low levels of education	.331	.260	-.592*	.253	-.271*
X_{21} Female participation rates vs. literates with medium level of education.	- .337	-.537*	.619	-.293	-.186
X_{22} Female participation rates vs. literates with high level of education	-.255	.28	.243	-.187	.497*

Levels of significance :
1. * P > .05
2. ** P > .01
3. *** P > .001

in Andhra Pradesh ($r = 0.644^{**}$)[4], Kerala ($r = 0.719^{**}$) and Southern Region[5] ($r = 0.327^{**}$). Tamil Nadu and Karnataka show a weak and statistically insignificant positive relationship between the two (Table 4.1). This may be due to the non-availability of female based occupations in manufacturing establishments as is clear from the relationship between female participation and proportion of female workers in household industry in these two states (Tables 4.1,4.2). Thus our hypothesis is accepted in Andhra Pradesh, Kerala and Southern Region only. From the above analysis it concludes that although presence of manufacturing establishments enhances female participation in economic activity in urban areas yet the tendency depends on the availability of female prone occupation in them.

(B) Proportion of Workers in Household Industry and Urban Female Participation

The female participation is positively correlated with the proportion of work force in the household industry with the exception of Kerala ($r = -.183$). However, the positive relationship is strong and statistically significant in Andhra Pradesh and Southern Region ($r = .538^{*}$ and $r = .273^{*}$ respectively) which indicates that existence of household industry in these regions enhances female participation rates. So our hypothesis is accepted in Andhra Pradesh and Southern Region and rejected in all other states under study.

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4. The 'asterisk' denotes the significance levels of regression co-efficient.

5. Southern Region denotes the four states namely Andhra Pradesh, Karnataka, Kerala and Tamil Nadu considered as one unit.

(B.1) Proportion of Workers in Other Services and Urban Female Participation

The 'other services' category includes all those white-collar occupation which require some formal education and training as well as all those "blue-collar" occupations where most of the illeterate and unskilled persons are employed. As further break down is beyond the scope this study, it is difficult to decide the proportion of white collar and blue collar occupations and it is probably a higher proportion of white collar jobs in other services category which resulted in negative relationship between women work participation and proportion of workers in other services. The relationship is, however, strong and significant in Andhra Pradesh ($r = -.804^{**}$), Tamil Nadu ($r = .729^{**}$) and Southern Region ($r = -.471^{***}$). A rise in other services seems to reduce female employment significantly in Andhra Pradesh, Tamil Nadu and Southern Region while in other states relationship is statistically weak.

(B.2) Sectoral Distribution of Women Workers and Women Participation in Rural Areas

The female participation is positively correlated with the proportion of female cultivators and agricultural labourers. The relationship also holds good with the proportion of workers in the secondary sector in some of the states under study. Table 4.1 shows that the relationship between female participation and proportion of cultivators is positive in all the states under study except Karnataka. However, the positive correlation co-efficient is strong and significant only in Andhra Pradesh ($r = .541^{*}$). This may be due to the fact that

working on one's own farm is associated with high social status and provides incentive to put more work in order to earn better.

An increase in proportion of agricultural labourers results in an increase in proportion of workers in the female population in all the states except Andhra Pradesh as agriculture labour provides an additional avenue of employment rather than a competing occupation within the occupational spectrum for most of the unskilled rural women. However, the positive relationship is statistically significant in the case of Southern Region. Andhra Pradesh shows a negative and significant relationship between these ($r = -.550^{***}$). The negative relationship may have resulted from the unfavourable socio- cultural conditions for working on other farms where work is available.

A positive relationship is expected between female participation rates and proportion of women workers in secondary sector because it offers employment to women in household industry and construction where household chores can be combined with work.

A positive and significant relationship emerged between female participation and proportion of workers in secondary sector in Andhra Pradesh and Karnataka (Table 4.1). In all other states the relationship is negative but insignificant. The positive relationship resulted from a higher employment of women workers in certain localised and household industries, (e.g. In Andhra Pradesh, a significant proportion of women

workers are engaged in 'bidi' making; 1971 Census).

Women employment in tertiary sector shows a negative relationship with total female employment. However, the negative relationship is statistically significant in Andhra Pradesh ($r = -.477^{***}$). A rise in tertiary occupations dampens the women participation due to the fact that jobs in this sector require certain specific skill and fixed duty hours to which rural women are not accounted. The results obtained thus, support the views expressed by De'Souza[6] and Raju[7]. The Committee on Status of Women[8], on the basis of the studies for other regions, ~~showed~~ that a developed primary sector enhances women participation rate while a developed tertiary sector dampens development. However, results obtained do not support our hypothesis in all the states under study.

(C) Growth of Income and Women Participation in Rural Areas

The hypothesis that in rural areas, higher income (defined in terms of growth of agricultural output) restricts women participation in gainful employment holds good in Andhra Pradesh, Tamil Nadu and Southern Region. The correlation coefficients are moderately significant in case of Andhra Pradesh ($r = -.576^{*}$) and Tamil Nadu ($r = -.761^{**}$) and is highly significant, for the Southern Region ($r = -.603^{***}$), but the negative relationship in Karnataka and positive relationship in Kerala (Table 4.1) is weak and statistically insignificant. The results

6. De'Souza, V.; (1969) op.cit.
7. Raju, S., (1981) op.cit.
8. The Committee on Status of Women (1974) op.cit.

obtained, thus, support the popular belief that keeping wives inside home is considered prestigious in rural India. However, the positive correlation in Kerala may be due to the fact that at very low levels of productivity increase in agricultural output may not be substantial to encourage the withdrawal of women workers from gainful employment.

With further breakdown, it is the women cultivators whose participation is adversely affected by growth of agricultural output. Prosperity in agriculture increases productivity and investment of capital and technology which requires more skills and output per hour in handling the agricultural operations. It may involve longer and more ordous hours of work over certain time periods, then would be possible for the female members of the household. Obviously in such a situation it would be beneficial to hire labour from outside and pay little more than mess around with inefficient unpaid family workers. The resultant productivity would pay not only for the hired labour which could be utilized within the household for some other work (e.g. dairy). The negative correlation obtained (Table 4.1) between proportion of female cultivators and growth of agricultural output more or less supports it but statistically significant relationship is obtained only in case of Andhra Pradesh.

(D) Concentration of Wealth and Participation Rates of Women Workers (Rural Areas)

Concentration of wealth in few hands (measured in terms of concentration of holdings) is expected to have a positive impact on female wage earners (agricultural labour) and a

negative impact on family female workers (cultivators). As agricultural labourers form bulk of the rural women workers, total female employment is expected to have a positive relationship with concentration of holdings. The positive relationship between female participation rates and concentration of holding is observed in all the states except Andhra Pradesh (Table 4.1). However, the positive relationship is statistically significant only in case of Southern Region ($r = 0.513^{***}$) while the negative correlation in Andhra Pradesh is weak and not significant statistically ($r = -.031$).

Concentration of holdings leads to the concentration of wealth in a few hands which encourages the withdrawal of family females (cultivators) from economic activity. The matrix of inter-correlations (Appendix 1) supports this view in Andhra Pradesh, Tamil Nadu and Southern Region but the correlation coefficients are statistically insignificant. The withdrawal of family workers is compensated by an increase in wage earners and, therefore, a positive relationship is expected between female wage earners and concentration of holding. This holds true in all the states except Karnataka (Table 4.2). In Karnataka a negative and weakly significant relationship is observed ($r = -.688^{*}$) against expectations. This negative relationship may be explained in terms of socio-cultural reasons limiting female activity on others farms as wage earners.

The hypothesis regarding the relationship between female participation rate and concentration of holding is accepted only in Southern Region.

(B) Modernization of Agriculture and Female's Economic Activity (Rural Areas)

Advancement in agriculture in terms of high cropping intensity, better irrigation and mechanization gradually reduces the importance of female workers leads to their withdrawl. Because women hardly have any training in the modern implements and this makes agriculture male-dominated. Besides agriculture, a limited work is available to women workers in rural areas. As a net result, women participation in gainful employment reduces. Thus, women are confined to household work and productive activities at home, where they are not counted as workers.

Increased cropping intensity due to modernization increases the agricultural output thereby reducing the need of employing household female labour which otherwise is necessary to supplement family income. This relationship holds true in Andhra Pradesh where correlation co-efficient is statistically significant ($r = -.561^{**}$). Positve correlation in case of Karnataka and Tamil Nadu and negative correlation in case of Kerala and Southern Region are weak and statistically insignificant(Table 4.2). Therefore, our hypothesis is accepted in Andhra Pradesh only.

The speculated negative relationship between area irrigated and women's gainful employment is statistically significant only in Andhra Pradesh ($r = -.582^{**}$) while in other states the relationship is positive (Table 4.2). But this positve relationship is very weak which shows that in these states irrigation has no relationship with female employment.

Index of modernization by increasing mechanization, number of tubewells and fertilizers available per hectare reduces female employment. The negative relationship is observed in all the states except Kerala, but these correlation co-efficients are not statistically significant. Thus, our hypothesis is rejected.

4.22 Role of Demographic Variables

The demographic variables are important in influencing female decisions about economic participation. Some of the demographic variables influencing women participation rates are discussed below.

(A) Urbanization and Women Participation Rates (Urban Area)

Urbanization results in an increase in production, income and a shift from subsistence agriculture to commercialized agriculture. These changes have varying impact on different sections of population. The opportunities resulting from urbanization are unequally divided between urban educated and the illiterate and unskilled rural migrants. Urbanization in developing countries, by increasing complexities in production procedures, very often displaces female workers from traditional occupations by making their skills obsolete and reducing them to the status of unskilled and unwanted labourers. The alternative occupations favouring educated and skilled workers can hardly compensate for displaced females, therefore an increase in urbanization is expected to reduce women employment. Although a negative relationship is observed in Andhra Pradesh, Karnataka, and Kerala, it is not very strong. Contrary to expectations a

positive and statistically significant relationship is found between urbanization and female participation rate in Tamil Nadu ($r = .778^{**}$), which seems to have arisen because of an increase in employment opportunities for women in white collar occupations (e.g. domestic servants) of tertiary sector. A higher proportion of latter probably explains the positive relationship between the two variables in Tamil Nadu. In the Southern Region no relationship is found between the two variables ($r = .008$) indicating that, in Southern Region, urbanizationdoes not play any role in enhancing or reducing female participation rates.

(B) Reproductive Behaviour and Work Participation Rates of Females in Rural and Urban Areas

A high child-women ratio participation in economic activity. But this does not necessarily restrict the employability of women in rural areas of Andhra Pradesh where a positive and significant relationship is observed between the two variables ($r = 0.477^{*}$). This may be possible as Riddley[9] points out that in rural areas the nature of work available to women is such that women can look after their children while working. Moreover, the family structure in rural areas is such that relatives and older members of family are easily available to look after the children, thereby freeing women to take non-domestic work. While in Kerala, Karnataka and Tamil Nadu, a higher child woman ratio seems to dampen females

9. Riddley, J., (1968), op. cit.

participation rates (correlation co-efficient, Table 4.2). Negative correlations observed, however, are weak and statistically insignificant.

The relationship between child woman ratio and women participation rates turns out to be negative in urban areas excepting Andhra Pradesh (Table 4.2). The negative relationship may be explained in terms of responsibilities of motherhood, nuclear family system, and complexities of work available (jobs available are non-compatible with child care). These correlations, however, are not strong and statistically significant. In case of Southern Region, negative relationship in urban areas and positive relationship in rural areas is very weak, suggesting that, to a larger extent, existence of children do not influence women's decision to join the labour force in Southern India.

The evidence obtained from above analysis is mixed. Although it is dubious but quite logical to conclude that the demand for child care time does not act as a constraint on female participation in non-domestic work in rural areas where domestic employment is available and in urban areas a negative relationship is more likely to appear, due to the non-availability of jobs where work can be combined with child care and relatives and servants are also not available. However, the results obtained in our analysis do not supports our hypothesis.

4.23 Role of Socio-Cultural Variables:

Women's participation in economic activity is much sensitive to changing socio-cultural conditions relative to

their male counterparts because they are considered secondary bread-winners in the society. Some of the important socio-cultural variables namely female heads of household, scheduled caste component of population, literacy and marital status are chosen and related to women participation rates.

(A) Female Heads of Households in Rural and Urban Areas

Female heads of households are those who because of marital dissolution, dissertion, abandonment, male selective migration and absence of spouse are structurally placed in a situation by which they become economically responsible for their families, thus making participation in economic activity as a necessary condition for survival. Cetrius paribus, a higher proportion of female heads of household does have a positive impact on women's gainful work. The expected relationship holds in all the states except Kerala. However, the positive correlation co-efficients are strong and statistically significant in urban areas of Andhra Pradesh ($r = .453^{*}$), Karnataka ($r = .614^{**}$) and Southern Region ($r = .235^{*}$). Positive correlation in urban areas of Tamil Nadu and negative ~~in signi-~~ correlation in urban areas of Kerala are week and insignificant (Table 4.1, 4.2).

The rural areas of all the states show a positive relationship between propertion of female heads of households and women work participation rates. The positive relationship, however, is strong only in case of Karnataka where correlation co-efficient is statistically significant ($r = .517^{*}$). In other states correlation co-efficients are positive but week (Table 4.2

The reasons for this weak relationship may be given in terms of male selective outmigration. This results in a regular money flow from outside and consequently females are not compelled to work outside. In rural areas strong family ties inhibit females from joining the labour force. However, the hypothesis is accepted in urban areas of Karnataka, Andhra Pradesh and Southern Region and rural areas of Karnataka only and this relationship in other states is found to be weak.

(B) Literacy, Levels of Education and Female Participation Economic Activity in Rural and Urban Areas

Literacy is another important socio-cultural variable influencing women participation in economic activity. A high level of educational attainment generally indicates that economic development has reached a level which should result in higher participation rates. Quite contrarily, expansion of literacy has discouraged female workers to accept the agriculture and other similar jobs (i.e. lower status jobs). Interestingly these literate females lack enough education and skill required for modern occupations of high prestige, resulting, in an overall decline in women work participation rate. Further, sanskritization, particularly in rural areas has led to the withdrawal of women workers from economic activity. Moreover, the demand for workers in 'prestigious occupations' is limited in rural areas, thereby further reducing the women work participation rates. These factors probably explain a negative relationship between proportion of literate females and total female participation rates (Table 4,)) in the rural areas of all the states. However, the negative

correlation coefficient is significant at 99% level in Andhra Pradesh ($r = -.658^{**}$) and at 99.9 per cent level in Southern Region ($r = -.447^{***}$) and at 10% level in Tamil Nadu ($r = -.468^{*}$). Karnataka shows positive and statistically significant correlation between two ($r = .489^{*}$). This positive relationship may be due to the availability of more jobs to literate women in rapidly expanding tertiary sector.

No significant relationship is observed between proportion of literate females and total female participation rates in urban areas of all the states under study, except Andhra Pradesh. Urban areas of Andhra Pradesh, compared to rural areas of the state shows a negative and statistically significant correlation ($r = -.468^{**}$). However, the negative relationship in Tamil Nadu and Southern Region and positive relationship in Kerala and Karnataka is not statistically significant.

It is believed that lower[10] and higher[12] levels of education enhance work participation rates of women while middle level[11] of education reduces it. It may be possible that women with lower levels of education are likely to belong to poor households where all members of family are liable to work to earn subsistence (Standing)[13]. The women folk go for manual job in agriculture and industry, thus raising total women participation rates. Middle level educated females are less likely to join manual work due to sanskritization. Also, they are at

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10. Lower level of education: upto primary excluding illiterate.
11. Middle level of education: above primary and upto middle.
12. Higher level of education: matriculation and above.
13. Standing, G.; op.cit.

competitive disadvantage for 'prestigious' jobs as they lack required education and skill, thereby resulting in a decline in women employment. Women with higher levels of education have a necessary competitive advantage in the labour market and job opportunities with higher wages, available in the market. Moreover, the opportunity cost of inactivity is higher and these factors results in a higher participation ratio of high educated women. A 'U' shaped pattern in levels of female education and participation rates is imperative and the hypothesis is examined below for the study area.

However, the relationship between females at variou levels of education and their work force participation shows divergent trends in all the four states and Southern Region. In rural areas of Andhra Pradesh and Kerala, increase in the proportion of literate females in primary level category, results in a decline in the proportion of workers. In Andhra Pradesh, a positive and significant relationship exists between proportion of workers and females with medium (above primary and below higher secondary) and high level (above higher secondary) levels of literacy. A similar but statistically non-significant relationship exists in case of rural areas of Tamil Nadu (Table No.4.1). In rural Karnataka, female participation in work is positively correlated with the proportion of literate females with lower and higher level of literacy, whereas a negative relationship is observed between proportion of workers and literate females with medium level of literacy (i.e. 'U' shaped pattern). However, the correlation

co-efficients are not statistically significant.

In rural areas of Southern Region a negative significant relationship exists between proportion of workers and literate females with higher levels of education. It may be explained in terms of the socio-cultural factors which inhibits women from taking work in order to maintain than newly earned status and non-availability of appropriate jobs for this type of workers.

Urban areas of Karnataka shows a 'U' shaped pattern in relation to women education and their participation rates. Correlation co-efficients, however, is significant only with medium level of education ($r = .537^{*}$). In Andhra Pradesh and Tamil Nadu a positive relationship exists between proportion of gainfully employed females and literate females with lower levels of education while negative relationship exists between proportion of workers and literate females with medium and higher levels of education. Kerala shows an opposite pattern to that of Andhra Pradesh and Tamil Nadu (Table 4.1). The negative relationship with lower levels of education is significant ($r = -.592^{*}$).

In urban areas of Southern Region a negative relationship exists between proportion of workers and literate with lower levels of education ($r = -.271^{*}$) and significantly positive relationship exists between proportion of workers and literates with higher levels of education ($r = .497^{**}$).

The above discussion indicates that no clear-cut pattern emerges from the relationship between female participation rates and the proportion of women at various levels of education in area of study.

In rural areas of Southern Region a negative relationship is observed between females with high levels of education and proportion of female workers while in urban areas of Southern Region a positive relationship is observed.

(C) Influence of Scheduled Component of Population on Women Work Participation Rates

Bardhan[14], Rao[15], Tripathi[16] and various other researchers convincingly argued that in India, within the same region, lower caste women have a higher participation rate than the higher caste women even after correcting for the income differentials. Other things remaining equal, a higher proportion of Scheduled Caste women results in higher overall participation rate of women in a region/state. Present data also indicates a positive relationship between proportion of women workers and proportion of scheduled caste females; in all the states except Karnataka. But the positive correlation co-efficients in Kerala, Tamil Nadu, Andhra Pradesh and Southern Region and the negative correlation coefficient in Karnataka are not statistically significant (Table 4.2). A significant positive relationship exists between women work participation rate and proportion of Scheduled Tribe women population in the rural areas of Karnataka and Southern Region ($r = .658^{**}$, $r = .274^{*}$). Negative relationship between the

14. Bardhan, P.K.; "Labour Supply in a Poor Agrarian Economy", American Economic Review, Vol.69, No.1, March 1979.

15. Rao, N.J. Usha; "Female Labour Force Participation Rates among Scheduled Caste of Karnataka", Indian Journal of Labour Economics, January, 1978.

16. Tripathi, B.L.; "Female Work Participation in Rural Area", Indian Journal of Labour Economics, April-July, 1978.

two, however, is non-significant in all other states (Table 4.2).

Non-significant relationship has emerged between proportion of women workers and proportion of Scheduled Caste women population in the urban areas of all the states under study. As far as ScheduledTribe women are concerned, a positive relationship is observed between two in all the states. Positive relationship, however, is significant only in Tamil Nadu (r = 613*) indicating that a higher proportion of Scheduled Tribe women raise the total women participation rates. Using state level data, Gulati[17] could not find any significant relationship between the Scheduled component of women and female employment, the above analysis using district level data, however, confirmed the positive association between the two at least in some of the states.

It is apparent from the above discussion that scheduled component in women population enhances women participation rates, yet their proportion in total population cannot be considered as a good indicator of level of female employment because their participation also depends on the culture of the region. Boserup[18] observedin Uttar Pradesh that even agricultural labourers prefer their women to stay at home and shun participation in agriculture as wage labourers.

(D) Marital Status and Women Work

A higher proportion of married female in total female population is expected to have negative impact on female

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17. Gulati, L. (1975), op. cit.

18. Boserup, E.(1970), op. cit.

participation in gainful work. At the same time a higher proportion of widowed/divorced/separated women are expected to have a positive impact on total female employability. In the urban areas, this advocated relationship holds true only in case of Karnataka. The correlation co-efficients between women participation rate and married women and widowed/divorced/separated females are $r = -.588^{**}$ and $r = .570^{*}$ respectively. The negative relationship with married females may be explained in terms of increased responsibilities after marriage whereas the positive relationship with divorced/widowed/separated families may be due to the fact that participation in economic activity becomes necessary for them to support themselves and their children. In all other states and regions, the relationship between marital status and women work participation is not significant (Table 4.2).

In the rural areas of Andhra Pradesh, Tamil Nadu and Southern Region, a higher proportion of married women, contrary to expectation, enhances women's activity rates significantly (Table 4.1), whereas in Karnataka and Kerala the relationship is negative and statistically insignificant. Proportion of widowed/divorced/separated women enhances the female participation rate in all the states. The positive correlation co-efficient, however, are relatively significant in Tamil Nadu ($r = .527^{*}$) and Southern Region ($r = .441^{***}$). The positive association between married females and total females employment indicate that in rural area marriage do not necessarily discourage work participation of women. The possible

reason for this may be the easy availability of those jobs where household work can be combined with them availability of relatives for looking after children and other responsibilities. Moreover the women who work, do so under the pressure of augmenting household income and the marriage system in India is such that in most of the cases depressed class women are married to men from the same caste, which may not be in a position to take extra burden and, therefore, women continue working after marriage also. Moreover, in Southern Region in most of the cases marriages take place within the relations which reduces the distinction between daughter and daughter-in-laws[19] thereby the employment of daughters and daughters-in-laws enhancing the total women employability.

After analysing the impact of various variables on women participation rate, a discussion on the relative importance of these variables in explaining the spatial variation in female participation rate with the help of multiple and stepwise regression analysis follows.

4.3 Multiple and Stepwise Regression Analysis

In the preceeding section, with the help of zero order correlation co-efficients, some negative and positve relationships have been established between women participation rate and different variables. However in this type of study it is

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19. Generally daughter-in-laws are not allowed to work outside home while daughters are. Jha has worked out this phenomenon in a village survey.

not enough to know the positive or negative impact of variables on women participation but it is important to analyse whether a particular set of variables can explain variations in dependent variable. For this purpose two methods can be used. One is to make the factor analysis of the explanatory variables in order to examine the relationship between dependent variable and principal components. But this approach suffers from a drawback that principal components are the result of several variables and therefore involve the problem of their exact identification. In this case the extent of explained variation depends on the eigen values of different components.

Second approach is the stepwise regression. Stepwise regression analysis shows an interplay of combination of different factors and their relevance for explaining spatial variations in female participation rates.

Results of the regression analysis will be discussed for each state separately and for Southern Region separately. In this regression analysis, $\bar{R}^2$ shows the total variation explained after adjustment for the loss of degree of freedom at each step. A'B' co-efficients explains the amount by which Y will change in response to a unit change in X. Thus $B = \frac{dy}{dx}$. The results of stepwise and multiple regression for each state are listed below.

TABLE NO. 4.3

RESULT OF STEPWISE REGRESSION IN ANDHRA PRADESH

(A) RURAL AREAS

Step	Variable		R^2	$\uparrow \bar{R}^2$	S.E.
1.	Proportion of female workers in tertiary sector	(-)	.441***	-	.453
2.	Proportion of married females in total female population(X_{14})	(+)	.630***	.789	.219

Total variation explained 63 per cent (The mathematical sign in the parenthesis denotes slope of the 'b' co-efficient)

(B) URBAN AREAS

Steps	Variables		R^2	$\uparrow \bar{R}^2$	S.E.
1.	Proportion of female workers in other services (X_7)	(-)	.629***	-	.042
2.	Proportion of female heads of households (X_{11})	(+)	.721	.092	.132
3.	Proportion of urban population (X_{10})	(+)	.769**	.048	.037
4.	Proportion of married females (X_{15})	(+)	.789*	.020	.215
5.	Child-women ratio (X_9)	(-)	.810***	.031	.018
6.	Proportion of female in household industry (X_3)	(-)	.859*	.049	.076

Total variation explained 85.9 percent (Mathematical sign in parenthesis denotes slope of the b - co-efficient).

(A) Andhra Pradesh (Rural)

Proportion of female workers in tertiary sector turns out as the most important variable explaining 44.1% of the total districtwise variations in female participation rate. Addition of the other variable i.e. proportion of married females, explain the additional 18.9% of variations. Both these variables taken together, therefore, explain 63.0% of total districtwise variations.

$$Y_F = 5.391 - 1.722\ X(5) + .718\ X(12) \quad ....(1)$$

The above equation shows that a higher proportion of married women and a less developed tertiary sector for women enhance their participation in gainful employment in rural areas of Andhra Pradesh.

(B) Andhra Pradesh (Urban)

Proportion of female workers in 'other services' is the single important variable explaining the maximum variation (62.9%). Proportion of female heads of household explain the additional 9.2% of total variations. Addition of third variable i.e. proportion of urban population raise the total explained variation to 78.9%. The next three variables i.e. X_{17}, X_{10} and X_3 taken together adds only 10.1% to the total explained variations. All these variables taken together explain 85.9% of the total district wise variations.

$$Y_P = 42.236 - .192\ X(3) - .389\ X(7) - .056\ X(8) + .131\ X(10) + 1.102\ X(11) + .424\ X(15) \quad .....(2)$$

Equation 2 shows that with better urbanization, high proportion of female heads of households and higher proportion

TABLE NO. 4.4

RESULTS OF STEP-WISE REGRESSION IN KARNATAKA

(A) RURAL AREAS

Steps	Variables		R^2	$\uparrow R^2$	S.E.
1.	Proportion of Scheduled tribe among females (X_{10})	(+)	.400**	-	.535
2.	Sex-ratio (X_{11})	(+)	.656**	.256	.026
3.	Proportion of agricultural labourer (X_3)	(+)	.707**	.049	.047
4.	Proportion of literate among females (X_{14})	(+)	.753*	.046	.117
5.	Child women ration (X_{12})	(-)	.789	.036	23.42

Total variation explained 78.9 per cent (Mathematical sign in the parenthesis denotes slope of the 'b' co-efficient)

TABLE NO. 4.4 (B)

URBAN AREAS

Steps	Variables		R^2	$\uparrow R^2$	S.E.
1.	Proportion of female heads of households (X_{11})	(+)	.340	-	.193
2.	Proportion of workers in trade and commerce (X_9)	(-)	.529**	.189	.259
3.	Proportion of married among females (X_{13})	(-)	.772**	.243	.114
4.	Proportion of workers in other services (X_7)	(-)	.804	.032	.050

Total variation explained 80.4 per cent (Mathamtical sign in the parenthesis denotes the slope of 'b' co-efficient)

of married females, the female participation is higher in urban areas of Andhra Pradesh. At the same time areas with high child women ratio, more women workers in household industry and other services category, reduce the participation rates.

Table 4.3a and 4.3b show that the porportion of married women is the single common variable explaining variation in female participation rate in both rural and urban areas; but in rural areas its impact is much stronger. It may be due to subsistence economy that both male and female must work and also indicates large male outmigration leaves behind the married women in rural areas to support the family.

(C) Karnataka (Rural)

Table 4.4a shows that five variables taken together explain 78.9% of the total districtwise variations of female participation in economic activity. Proportion of scheduled tribe among females alone explain 40% of the variation. The next important variable turns out to be the sex-ratio explaining additional 25.8% of the variation in female participation rates. Addition of the next variable (X_3) raises the total explained variation to 70.7%. Proportion of literate among women adds another 4.6% to the explanation of variations. The last variable is child-women ratio raising the explained variation in districtwise female participation rate to 78.9%.

$$Y_F = -52.494 + 0.211\ X(3) + .083\ X(11) - 43.211\ X(12) + .241\ X(14) + 1.60\ X(16) \quad \ldots\ldots(3)$$

This equation 3 shows that a higher level of female literacy, favourable sex-ratio, higher proportion of scheduled tribes among women and larger percentage of women agricultural labourers will enhance female participation rate in the rural areas of Karnataka.

(D) Karnataka (Urban)

Table 4.4b shows that the proportion of female heads of households is the most important variable explaining 34% of total districtwise variation in female activity rate in urban areas of Karnataka. The next important variable is the proportion of women in trade and commerce explaining an additional 18.9% of the total variations. Married component of the female population, explaining additional 24.3% of the variations raises the total explained variation in districtwise female participation rates to 77.2%. Proportion of women in other services adds only 3.2 percent to the explained variation. Total 80.4% of districtwise variation in female participation rates are explained with all the variables taken together.

$$Y_p = 37.612 - 0.791\ X(5) - 0.095\ X(7) + .214\ X(11) - .559\ X(10) \quad \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

The equation 4 shows that areas with less developed trade and commerce and with lower proportion of married female are marked with high female participation in economic activity. Though proportion of female heads of household explains maximum variation in female activity rate, its b co-efficient turns out to be insignificant.

TABLE NO.4.5

RESULTS OF STEP-WISE REGRESSION IN KERALA

(A) RURAL AREAS

Steps	Variables		$\bar{R}^2$	$\uparrow \bar{R}^2$	S.F.
1.	Proportion of workers in tertiary sector (X_5)	(-)	.287***	*	.290
2.	Proportion of married females (X_{17})	(-)	.671***	.384	.824
3.	Growth rate of agricultural output (X_6)	(+)	.876***	.205	.754
4.	Proportion of Hindu women population in total women population (X_{20})	(+)	.952***	.075	.031
5.	Proportion of literates among females (X_{14})	(-)	.987***	.036	.27
6.	Number of manufacturing establishments per 1000 of women (X_1)	(-)	.995*	.008	.085

Total variation explained 995 per cent (Mathematical sign is the parenthesis denotes slope of the b co-efficient).

The above discussion indicates that in rural and urban areas of Karnataka, none of the factors is common in explaining the districtwise variations in participation rates. But in both the areas socio-cultural variables entered in the first step explaining the maximum amount of districtwise variations.

(E) Kerala(Rural)

Table No. (4.5a) represents the step-wise regression results for rural Kerala. It is quite clear from the data that all the six variables taken together explain almost 100% of the total variations, total districtwise variations in female participation rates. The most significant variable explaining the 28.7% of the total variations is the proportion of female workers in tertiary sector. Proportion of married females explains additional 58.4% of the variations in female activity rate which is more than the variations explained by first factor but X_5 entered first in the regression because its correlation co-efficient is quite high while in combination the influence of X_{19} seems to be much stronger. The level of explained variations reached to 87.6% with the addition of growth of agricultural output in the next step. The last three variables (X_{22}, X_{16} and X_1) taken together explain only 11.9% of the additional districtwise variations in female participation rates.

$$Y_F = 151.85 + 0.248\ X(1) - 0.931\ X(5) + 3.408\ X(6) - 0.125X(14) - 3.658\ X(17) + 0.112\ X(20) \quad \ldots\ldots\ldots(5)$$

The equation 5 indicates that with higher number of manufacturing establishments, lower proportion of women in

TABLE NO. 4.5 (B)

(URBAN AREAS)

Steps	Variables		$\bar{R}^2$	$\uparrow \bar{R}^2$	S.E.
1.	Number of manufacturing establishments per 1000 of women population (X_1)	(+)	.456***	-	.200
2.	Population of Scheduled caste among women (X_{13})	(+)	.789***	.333	.178
3.	Proportion of scheduled tribe among women (X_{14})	(+)	.891***	.102	.601
4.	Proportion of married among females (X_{15})	(-)	.918***	.027	.244
5.	Proportion in widowed/ divorced separated among women (X_{16})	(+)	.965***	.047	.176
6.	Proportion of Chnistive women among total women (X_{17})	(+)	.488**	.023	.024
7.	Proportion of worker in other services (X_7)	(+)	.996***	.008	.009
8.	Proportion of WOmen among total women (X_{19})	(-)	.999***	.003	.007

Total variation explained is 99.9 percent (Mathematical sign in the parenthesis denotes slope of the b co-efficient.

tertiary sector in areas of higher growth in agriculture having higher proportion of married females, lower levels of female literates and high proportion of Hindu women population, the female participation is high in rural areas of Kerala.

(F) Kerala(Urban)

Table (4.5b) shows that eight variables taken together explain 99.9% of total districtwise variation in female activity rate. This indicates all the important variables explaining the variation in female activity rate in urban areas of Kerala. Number of manufacturing establishments per employment. Addition of next variable i.e. proportion of scheduled caste among women explains the additional 33.3% of the total variations. Proportion of scheduled tribe female raises the total variations explained to 89.1% by explanaining additional 10.2% of the districtwise variations. In the fourth and fifth step martial status variables (X_{17} and X_{12}) add another 7.4% to the explanation of variation, thereby raising explanatory power to 96.5%. The last three variables taken together explain only 3.4% of additional variation in districtwise female participation rates and are not very significant for the purpose of explaining variation in districtwise female participation rates. However, number of manufacturing establishment per 1000 of women population explaining maximum variation in districtwise women participation rate is removed in the last step which shows that in combination with other factors, it is insignificant in explaining variation in female participation rates. This variable, therefore, is not included in the multiple regression equation.

TABLE NO. 4.6 (A) RURAL AREAS

RESULTS OF STEP-WISE REGRESSION IN PANEL MAIN

Steps	Variables		R^2	$\uparrow R^2$	S.E.
1.	Growth of agricultural output (X_6)	(-)	.537***	-	.669
2.	Percentage of widowed/ divorced or separated females (X_{38})	(+)	.754***	.217	.553
3.	Index of modernisation (X_{40})	(-)	.875***	.121	.522
4.	Number of manufacturing establishments per 000 of women population (X_4)	(+)	.929***	.054	.451
5.	Cropping intensity (X_7)	(+)	.975***	.046	3.544
6.	Proportion of women among total women (X_{21})	(-)	.994***	.019	.089
7.	Proportion of scheduled caste female population (X_{35})	(+)	.996	.002	.019

Total variation explained 99.6 per cent (Mathematical sign in the parenthesis denotes the slope of the 'b' co-efficient)

TABLE NO. 4.6 (B) URBAN AREAS

1.	Proportion of urban population (X_{40})	(+)	.573*	-	.080
2.	Proportion of working in other services (X_7)	(-)	.645*	.072	.066
3.	Percentage of Hindu women among total women (X_{38})	(+)	.697	.052	.009

Total variation explained 69.7 per cent (Mathematical sing in the parenthesis denotes the slope of the 'b' co-efficient)

$$Y_p = 5.548 - 0.065\ X(7) + 1.41\ X(13) + 2.48\ X(14) - .307\ X(15) + .866\ X(16) + .094\ X(17) - .028\ X(19) \quad \ldots\ldots\ldots\ldots (6)$$

The equation 6 shows that the 'b' co-efficients of all the variables entered in regression equation are highly significant. Thus urban areas of Kerala with less workers in other services category, high proposition of scheduled caste component of women population, higher proportion of widowed/divorced/separated women and lower proportion of married females are marked with high female activity rate. As far as religion is concerned, a higher proportion of Christian women and a lower proportion of Muslim women encourages women participation in economic activity.

The results of stepwise regression in rural and urban areas show that although some of the factors explaining districtwise variations in female activity rate are common yet their importance is not same in rural and urban areas in explaining the variation

(G) Tamil Nadu (Rural)

Growth of agricultural output, proportion of widowed/divorced and separated females, index of modernisation, number of manufacturing establishments, cropping intensity proportion of muslim and scheduled caste women are some of the variables which turns out as important ones simultaneously explaining variations in rural female participation in economic activity. Together all these variables explain 99.6 percent of the total

districtwise variations. Growth of agricultural output accounts for more than 50% of cover the total variations. Addition of the variable (i.e. proportion of widowed/ divorced or separated women) at the second step increases the explanation to 75.4%. These two variables together with index of modernization, number of manufacturing establishment and cropping intensity explain 97.5% of the variation. As far as contribution of last two variables in explaining the variations is concerned, is insignificant.

$$Y_F = -13.846 + 0573\ X(1) - 1.858\ X(6) + 17.421\ X(7) - 2.784\ X(10) + 0.040\ X(15) + 2.404\ X(18) - 0.430\ X(21) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

The equation 7 points out that higher number of manufacturing establishments in areas of low agricultural growth, low levels of modernization in agriculture, having higher cropping intensity, higher proportion of widowed/ divorced and separated women with larger population of muslim among women results in high participation of women in economic activity.

(H) Tamil Nadu (Urban)

Proportion of urban population, an indicator of urbanization, comes out as the most important variable (Table 4.6) explaining the variations in female participation in urban areas of Tamil Nadu. This variable alone explains as much as 57.3% of the total districtwise variations. Addition of the second variable (proportion of workers in other services) increases the explanation to 64.5%. Proportion

TABLE NO. 4.7 (A) RURAL AREAS

RESULTS OF STEP-WISE REGRESSION IN SOUTHERN REGION

Step	Variables		R^2	$\uparrow R^2$	S.E.
1.	Growth of agricultural output (X_6)	(-)	.352**	-	.339
2.	Proportion of workers in tertiary sector (X_3)	(-)	.473**	.121	.148
3.	Concentration of land holdings (X_8)	(+)	.579**	.106	13.59
4.	Number of mfg. establishments per 1000 of women population (X_4)	(+)	.620**	.041	.142
5.	Proportion of female cultivators among female workers (X_2)	(-)	.635	.013	.098
6.	Proportion of Scheduled tribe among women (X_{16})	(+)	.645	.010	.152

Total variation explained is 64.5 per cent (Mathematical sign in the parenthesis denotes the slope of 'b' co-efficient)

(B) URBAN AREAS

			$\bar{R}^2$	$\uparrow \bar{R}^2$	
1.	Proportion of workers in other services (X_7)	(-)	.309***	-	0.032
2.	Proportion of christians among total women population (X_{17})	(+)	.428*	.119	.045
3.	Proportion of workers in transport and communications (X_5)	(-)	.520**	.092	.092
4.	Proportion of workers in trade and commerce (X_5)	(-)	.558*	.038	.086
5.	Proportion of Scheduled caste among women (X_{14})	(-)	.574	.016	.047

Total variation explained is 57.4 per cent (Mathematical sign in the parenthesis denotes the slope of 'b' co-efficient)

of Hindu women entered in the last step explain only additional 5.2% of the variation, thereby raising explanatory power of all these variables to 69.7%.

$$Y_p = 22.227 - 0.183\ X(7) + 0.209\ X(10) - 0.151\ X(18) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

The equation 8 indicates that areas with lower proportion of workers in 'other services' category and higher proportion of urban population are marked with high levels of women activity rate.

Economic indicators come out as the most important variable explaining the total districtwise variation in female participation rates in rural areas. Whereas in urban area non-economic factor emerged as most important one.

(I) Southern Region (Rural)

Table 4.7a shows that six variables together explain 64.5% of the total districtwise variation in female activity rate in rural areas of southern region. Growth of agricultural output comes out as the most important variable explaining 35.2% of variations. The next important variable is the proportion of female workers in tertiary sector explaining an additional 12.1% of total districtwise variation in female activity rate. These two variables taken together explain 17.3% of total districtwise variations. Concentration of holdings comes as the next important variable raising the explanatory power to 57.9%. Number of manufacturing establishments per 1000 of female population entered in the fourth step adds over 5.2% percent in explaining variation in female participation

rate. Proportion of cultivators among workers and proportion of scheduled tribe among women are less influential variable adding only 2.5% to the explanation.

$$Y_p = 1.232+0.411\ X(1) - 0.103\ X(2) - 0.626\ (X(5) + 100\ X(6) + 39.709\ X(8) + 0.226\ X(16) \ldots\ldots\ (9)$$

The equation 9 shows that higher number of manufacturing establishments, a lower proportion of workers in tertiary sector with less growth in agricultural output and a greater concentration of holdings, enhance female participation in economic activity.

(J) Southern Region (Urban)

Variables explaining the districtwise variations in female participation rates are: proportion of workers in 'other services', proportion of workers in transport and communication, trade and commerce and scheduled caste women. Proportion of workers in other services and Christian women population together explain 42.8% of variations. Proportion of workers in transport and communication and trade and commerce together explain additional 13.0% of total district-wise variation in female activity rate. The last variable (proportion of scheduled caste among total women population) is rather less influential variable explaining only 1.6% of additional variations in trade participation rates. All these variables taken together explain 57.4% of total district-wise variations.

$$Y_F = 24.563 - 0.187\ X(5) - 0.354\ X(6) - 0.187\ X(7) - 0.163\ X(15) + 0.109\ X(17) \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (10)$$

The equation 10 indicates that a lower proportion of workers in trade and commerce, transport and communication, lower proportion of scheduled caste among women and high proportion of Christian among women, encourage female participation rates in the urban areas of Southern Region.

Conclusion:

In the analysis of multiple and stepwise regression economic, demographic and socio-cultural factors selected in this study emerge quite important in explaining the spatial variation in female participation rates. However their importance varies from one state to another and between rural and urban areas.

In the rural and urban areas of Southern Region economic indicators emerge as the the most important in explaining the spatial variation in female participation rates (explaining 63 percent of total districtwise variation in rural and 34 percent in urban areas). However, this summary picture does not remain same at state level.

The stepwise regression analysis shows that in the rural areas of all states except Karnataka, economic factors entered in the first step (proportion of workers in tertiary sector and growth of agricultural output) and socio- cultural in the second step (proportion of married females and proportion of widowed/divorced/separated females) explaining the maximum variations. In Karnataka, proportion of scheduled tribe females

explain the maximum variation in female participation rates at district level (— 40 percent).

In the urban area's of all the states non-economic factors turns out to be more important in explaining the spatial variations. However, in Andhra Pradesh, economic factors explain maximum variation in female participation rates over districts level. Proportion of female workers in other services alone explains the 62.9 percent of variations in female participation rates. In urban areas of Karnataka proportion of female heads of households and proportion of married females taken together explain around 58 per cent of variation. Tamil Nadu (urban) is the only state where demographic variable i.e. proportion of urban population, entered in the first step explaining the 57.3 percent of variation in female participation rate.

Although no uniform pattern is observed at state level, yet economic factors turns out as the most important in rural area's and non-economic in urban areas is certainly a conclusion which needs more investigation by further research.

CHAPTER - 5

Conclusions

Considering the fact that a number of difficulties arise while analyzing the female participation in economic activity, its relationship with education, and their sectoral distribution; an attempt has been made to generalise certain conclusions in this study of Southern Region - comprising of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu states.

The generally held view that literacy and education increases the female participation in economic activity via broadening the job opportunities available, more knowledge about the job market etc., is not true in the Southern India. Moreover, in this region an inverse relationship is seen (e.g. Keral with highest level of literacy is having lowest participation rate of females while Andhra Pradesh with lowest

level of literacy is having highest female participation rate). This inverse relationship may be explained in terms of sociological factors, economic factors, non-availability of jobs, higher income earned by male members. This question needs further investigation to highlight the finer points.

No consistent relationship has been observed between education and female participation rate. In Andhra Pradesh and Tamil Nadu, women participation decline as one moves from illiterate to literate without education level and after that female participation rate improves with every improvement in the level of education. In Kerala and Karnataka, female participation rate decline with a movement from illiterate to literate without education level and it continues upto middle level except a small increase at primary level. After middle level, participation rates of females improves at all levels of education. Decline in female participation at middle level of education in Kerala and Karnataka possess a very important question whether this is due to non-availability of required jobs or due to the fact that once attaining middle level females may like to join some training to improve their job prospects or some other socio-cultural and economic- reasons are responsible for it? These issues also throw some pertinent question on female status.

However, in general, women participation in economic activity is quite high in Southern Indian states, particularly in Andhra Pradesh. But in the capital cities of Southern India namely Hyderabad, Banglore, Trivendrum and Madras is very low .

Some of the reasons for this may be the excess supply of labour, lack of basic skills and formal education required for jobs available in the cities. All these reasons require further investigation.

Even the areas in Andhra Pradesh, Tamil Nadu, where female participation in work is very high, it cannot be said to have been due to the presence of scheduled caste/scheduled tribe. Contiguous belt of high female participation in Andhra Pradesh and Tamil Nadu has the least proportion of females belonging to scheduled communities with the only exception Coorg and Nilgiris. In these two districts, presence of scheduled caste/scheduled tribe females is one of the reasons for higher female participation rate. A further inquiry into the reasons for higher female participation rates in these areas may be an interesting research avenue.

The analysis of sectoral distribution of women workers shows that in the rural areas of all the states except Kerala, female workers are concentrated in primary sector (almost 80 percent) as agricultural labourer (Appendix I). In the context of a very high female participation rates and the drudgery of agricultural operations a majority of women workers are suffering from a burden which is popularly known as double day. In rural areas of Kerala, however, female workers in primary sector are around 64 percent followed by secondary and tertiary sector. This shift in occupational structure may be due to a less developed primary sector and availability of labour intensive household and small scale industries and relatively developed tertiary activities resulting from secondary activities.

In the urban areas of all the states under study, women workers are concentrated in the tertiary sector of the economy followed by secondary rural primary sector.

With an increase in the level of education women participation in tertiary activities increases i.e. education leads to tertiarization of the economy.

It was observed in this study that the explanation of female participation in economic activity at aggregate level (state level) differ a lot within themselves in terms of socio-cultural factors. Such explanation should be sought at the level of lower spatial units to locate sub-regional and local conditions.

In the Southern Indian states, generally the female participation in economic activity, is positively associated with the activities which are not paid for like cultivating one's own farm (Table 4.1) and working in household industries (Table 4.2). The inference drawn is that presence of these type of activities in a region increases the female participation rates. However, the overall participation rates are negatively correlated with the paid jobs like agricultural labourer, other services, trade and commerce and transport and communication (Table 4.2).

A number of hypothesis, on the basis of correlation results, have been tested in the area of study. The generally held view that presence of scheduled component of population would influence the female participation rate holds true in a few regions (rural/urban) which strengthens the belief that scheduled communities do not behave in total vacuum[1]. The

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1. Raju, S.; (1981). op.cit.

another important factor (child-women ratio) expected to influence female participation rates negatively does not turn out at important. However, In the rural areas of some states (e.g. Andhra Pradesh) child-women ratio shows a positive correlation with total female participation rates. Some other important hypothesis put for trial are influence of female heads of households and levels of education on total female participation rate. Female heads of households raise the total participation rate in rural as well as in urban areas. Levels of education with female participation shows a different pattern in all the states under study.

It is interesting to note that the explanation for the variation in female participation rates vests on economic factors in rural areas and non-economic factors in urban areas. However in urban areas of Andhra Pradesh, economic factors explain maximum variation in female participation rate. In Karnataka, female deals of homechild turns out to be most important factor. In rural areas of all the states except Karnataka economic factors explain maximum spatial variation. In Karnataka, proportion of scheduled tribe female is the only factor explaining 40 percent of total districtwise variation in female participation rate.

This study in rural and urban areas of Southern India raises a number of vital question related with women's economic activity, impact of education on their participation and their occupational structure. These questions about the socially and economically important but unexploral field of study can be answered satisfactorily by further research at smaller units with the help of primary data.

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Table 1: Correlation Matrix
Southern Region (Rural)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}	x_{21}	x_{22}
x_1	1.0	.580	.098	.279	-.213	-.477	-.472	.468	.509	.287	.447	.299	.453	.217	.114	.428	.319	.567	.355	.289	.314	-.155
x_2		1.00	.077	.078	.093	-.232	-.399	.374	.375	.171	.548	.142	.334	-.029	-.088	.357	.126	.357	.172	-.093	.140	-.111
x_3			1.00	-.295	-.372	-.566	-.002	.179	.211	.112	.048	-.007	.188	.047	-.192	.290	.073	.297	.033	-.557	.589	-.282
x_4				1.00	-.488	-.364	.009	-.001	-.013	.134	.135	.134	.028	-.062	-.145	.044	-.032	.374	.329	-.232	.104	.120
x_5					1.00	.672	-.007	-.076	-.096	-.229	-.062	-.161	-.111	-.035	.283	-.113	-.134	-.458	-.197	.593	-.523	.119
x_6						1.00	.127	-.142	-.177	-.364	-.195	-.105	-.179	.005	.390	-.262	-.076	-.608	-.318	.787	-.754	.254
x_7							1.00	-.534	.538	-.104	-.441	-.439	.531	-.390	-.286	-.354	-.335	-.288	-.171	.127	-.120	.037
x_8								1.00	.987	.217	.828	.783	.979	.658	.532	.732	.576	.292	.090	-.223	.173	-.012
x_9									1.00	.274	.794	.798	.978	.663	.565	.732	.569	.322	.100	-.239	.205	-.044
x_{10}										1.00	.288	.229	.268	.129	-.147	.202	.149	.326	.008	-.225	.342	-.274
x_{11}											1.00	.626	.776	.355	.184	.619	.434	.281	.151	-.175	.125	.000
x_{12}												1.00	.837	.539	.477	.444	.309	.277	-.026	-.197	.130	.025
x_{13}													1.00	.676	.541	.690	.517	.320	.065	-.249	.191	-.011
x_{14}														1.00	.507	.380	.720	-.012	-.017	-.154	.102	.029
x_{15}															1.00	.267	.343	-.212	-.095	.333	-.364	.182
x_{16}																1.00	.364	.472	.169	-.299	.354	-.205
x_{17}																	1.00	.008	.011	-.143	.180	-.116
x_{18}																		1.00	.335	-.522	.584	-.307
x_{19}																			1.00	-.202	.140	.014
x_{20}																				1.00	-.764	.025
x_{21}																					1.00	-.659
x_{22}																						1.00

x_1 = Dependent variable
x_2 ... x_{22} = independent variables.

Table 2: Correlation Matrix
Andhra Pradesh (Rural)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}	x_{21}	x_{22}
x_1	1.00	.244	.541	-.530	.478	-.685	-.576	-.561	-.031	-.581	-.298	.166	.471	.096	-.657	.281	-.339	.518	-.055	-.346	.040	.376
x_2		1.00	.310	-.514	.646	-.004	-.333	-.076	.229	-.198	-.258	.304	.042	-.185	-.409	.255	-.312	.677	.050	-.224	.221	-.064
x_3			1.00	-.943	.313	-.625	-.428	-.453	-.030	-.409	-.647	.380	.088	.065	-.764	.155	.092	.424	.340	-.678	.519	-.022
x_4				1.00	-.587	.499	.481	.384	-.080	.342	.607	-.461	-.012	-.019	.731	.193	-.010	-.579	-.353	.631	-.504	.056
x_5					1.00	-.177	-.494	-.157	.260	-.100	-.195	.352	-.007	-.045	-.315	.206	-.289	.672	.166	-.161	+.061	.109
x_6						1.00	.454	.701	.257	.568	.302	.009	-.397	-.219	.626	-.108	.163	-.112	-.216	.324	.089	-.580
x_7							1.00	.440	-.092	.318	.461	-.268	-.235	-.098	.397	-.191	.301	-.396	-.088	.285	-.025	-.339
x_8								1.00	.421	.871	.401	-.194	-.520	.107	.753	-.154	-.160	-.025	.011	.337	.094	-.556
x_9									1.00	.439	.222	.172	-.331	-.078	.203	.174	-.348	.381	-.089	.035	.110	-.214
x_{10}										1.00	.368	.292	-.662	.269	.812	-.166	-.124	-.151	.200	.309	.070	-.479
x_{11}											1.00	-.098	.375	.357	.567	-.199	-.223	-.394	.144	.668	-.634	.204
x_{12}												1.00	-.456	.497	-.055	-.074	.128	.733	.625	-.192	.366	-.406
x_{13}													1.00	-.411	-.497	.058	.047	.096	-.606	-.150	-.059	.304
x_{14}														1.00	.100	.242	-.177	-.378	-.775	-.018	-.042	.071
x_{15}															1.00	-.150	-.091	-.332	-.083	.610	-.291	-.264
x_{16}																1.00	-.244	.453	-.245	-.589	.324	.097
x_{17}																	1.00	-.280	.060	-.138	.301	-.401
x_{18}																		1.00	-.185	-.286	.297	-.131
x_{19}																			1.00	-.136	.069	.009
x_{20}																				1.00	-.802	.166
x_{21}																					1.00	-.712
x_{22}																						1.00

Table 3: Correlation Matrix
Karnataka (Rural)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}	x_{21}	x_{22}
x_1	1.00	.584	-.325	.022	.470	-.101	-.203	.154	.216	.022	-.006	.433	-.332	.516	.483	-.434	.658	-.334	.092	.540	-.575	.497
x_2		1.00	.028	.107	.703	-.316	-.353	-.139	.145	.214	.252	.682	-.056	.634	.296	-.580	.169	-.212	.292	.496	-.491	.312
x_3			1.00	-.563	.799	-.271	.073	.079	.363	.526	.279	.048	-.474	.190	.107	.118	-.188	-.237	.047	-.080	.389	-.690
x_4				1.00	-.264	-.387	.130	.174	-.608	-.241	.252	.142	.740	-.003	-.590	.065	-.388	.609	.376	-.528	-.144	.910
x_5					1.00	.084	-.263	-.001	.145	.340	.086	.733	-.326	.725	.322	-.407	.241	-.370	.131	.713	-.394	.068
x_6						1.00	-.155	-.370	.283	-.316	-.639	-.219	-.129	-.211	.102	-.088	.169	-.064	-.186	.380	-.193	-.008
x_7							1.00	.602	-.264	.221	.322	-.288	.022	-.005	-.181	.449	-.277	.038	-.047	-.381	.491	-.450
x_8								1.00	-.290	.289	.349	.118	-.106	.313	-.203	.416	.125	-.009	.047	-.282	.364	-.349
x_9									1.00	.129	-.338	-.192	-.540	.007	.693	-.415	.426	-.567	-.188	.374	-.144	-.168
x_{10}										1.00	.355	.295	-.280	.313	.323	.013	-.054	.473	-.143	.273	.065	-.306
x_{11}											1.00	.139	-.035	.272	-.206	.204	-.150	.165	.155	-.231	.214	-.240
x_{12}												1.00	.005	.711	.092	-.301	-.114	.014	.421	.533	-.479	.342
x_{13}													1.00	-.344	-.529	-.043	-.512	.512	-.094	-.225	-.150	.377
x_{14}														1.00	.160	-.394	.030	-.324	.599	.308	-.051	-.049
x_{15}															1.00	-.500	.656	.099	-.418	.503	-.198	-.028
x_{16}																1.00	-.341	.386	-.247	.476	.429	-.314
x_{17}																	1.00	-.423	-.408	.396	-.352	.188
x_{18}																		1.00	.300	-.384	-.084	.261
x_{19}																			1.00	-.206	.024	.094
x_{20}																				1.00	-.739	.387
x_{21}																					1.00	-.818
x_{22}																						1.00

Table 4: Correlation Matrix
Kerala (Rural)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}	x_{21}	x_{22}
x_1	1.00	.429	.423	.521	-.277	-.605	.038	-.150	.198	.206	.034	.595	-.246	.396	-.349	.439	-.59	-.072	.422	-.247	.590	-.209
x_2		1.00	.232	.140	.117	-.032	-.377	-.461	.040	.091	-.396	.175	-.497	.216	.275	.065	-.152	-.467	-.016	.259	.374	-.512
x_3			1.00	.773	-.622	-.780	-.089	-.172	.747	-.008	.211	.381	.565	.660	-.773	-.525	.564	.459	.673	-.623	.130	.472
x_4				1.00	-.786	-.696	.395	-.239	.718	.287	.506	.582	.470	.430	-.702	-.219	.254	.526	.695	-.539	-.041	.522
x_5					1.00	.517	-.584	-.035	-.905	-.259	-.746	-.179	-.566	-.037	.506	.406	-.429	-.573	-.274	.191	.258	-.365
x_6						1.00	-.160	.277	-.520	.123	-.319	-.358	-.438	-.471	.769	.198	-.457	.651	-.710	.681	-.266	-.424
x_7							1.00	.133	.417	.116	.913	-.133	.307	-.575	-.153	.053	.043	.572	-.082	.182	-.476	.238
x_8								1.00	.041	-.318	.320	-.400	.127	-.202	-.179	.041	.190	-.006	-.240	.093	-.106	-.007
x_9									1.00	.121	.683	.070	.668	.054	-.516	-.579	.533	.542	.189	-.148	-.310	.984
x_{10}										1.00	-.007	.642	-.081	.030	.174	.146	-.210	-.245	-.031	.121	-.023	-.092
x_{11}											1.00	.175	.590	-.432	-.401	-.190	.277	.691	.001	-.008	-.543	.408
x_{12}												1.00	.022	.627	-.371	.34	-.275	-.120	.608	-.494	.263	.256
x_{13}													1.00	.100	-.683	-.563	.429	.717	.309	-.463	-.602	.866
x_{14}														1.00	-.545	-.166	.244	.019	.828	-.788	.547	.315
x_{15}															1.00	.273	-.476	-.659	-.804	.859	-.051	-.745
x_{16}																1.00	-.807	-.525	-.158	.230	.198	-.355
x_{17}																	1.00	.622	.297	-.391	.202	.206
x_{18}																		1.00	.472	-.547	-.252	.684
x_{19}																			1.00	-.944	.360	.594
x_{20}																				1.00	-.277	-.706
x_{21}																					1.00	-.483
x_{22}																						1.00

Table 5: Correlation Matrix
Tamil Nadu (Rural)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}	x_{21}	x_{22}
x_1	1.00	.462	.036	.086	-.322	-.636	-.761	.149	.350	.044	-.002	.435	-.322	.377	-.489	.193	-.169	.519	.527	-.583	.593	-.250
x_2		1.00	-.550	-.129	.178	.014	-.553	-.006	-.088	.074	.437	-.119	-.779	-.049	.004	-.302	-.253	.098	-.032	-.057	.118	-.439
x_3			1.00	.191	-.662	-.493	.045	.300	-.012	.086	-.297	-.006	.392	-.084	-.519	.215	.063	.388	.073	-.510	.465	.294
x_4				1.00	-.558	-.472	.346	-.076	.504	.618	-.009	-.010	.090	-.365	-.347	.713	.089	.264	.632	-.459	.409	.169
x_5					1.00	.891	.081	.055	-.120	-.542	.022	.162	-.202	.413	.929	-.643	-.320	-.842	-.576	.930	-.913	.071
x_6						1.00	.347	.056	-.341	-.463	.062	-.188	-.116	.065	.938	-.689	-.234	-.858	-.706	.967	-.941	.042
x_7							1.00	-.358	.112	.332	-.342	-.298	.252	-.471	.330	.183	.317	-.269	-.078	.340	-.376	.257
x_8								1.00	.003	-.145	.512	.251	-.017	.365	.166	-.175	-.768	-.173	-.022	.032	-.067	.318
x_9									1.00	.435	-.205	.679	-.109	.382	-.041	.541	-.338	.001	.638	-.175	.096	.402
x_{10}										1.00	.148	-.206	-.169	-.533	-.414	.687	.074	.532	.551	-.523	.496	-.019
x_{11}											1.00	-.153	-.268	-.109	.040	-.092	-.456	-.001	.125	-.012	.029	-.072
x_{12}												1.00	-.042	.393	.087	.190	-.426	-.184	.369	.017	-.110	.615
x_{13}													1.00	.020	-.152	.331	.381	-.004	.073	-.074	.067	.068
x_{14}														1.00	.269	-.134	-.502	-.374	.005	.235	-.290	.446
x_{15}															1.00	-.586	-.399	-.910	-.512	.968	-.969	.195
x_{16}																1.00	.246	.524	.700	-.654	.592	.193
x_{17}																	1.00	.444	.025	-.262	.300	-.354
x_{18}																		1.00	.557	-.917	.932	-.338
x_{19}																			1.00	-.609	.559	.080
x_{20}																				1.00	-.989	.152
x_{21}																					1.00	-.285
x_{22}																						1.00

Table 6: Correlation Matrix
Southern Region(Urban)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}
x_1	1.00	.327	.435	.292	.149	-.458	-.438	-.471	.289	-.091	.008	.235	-.128	-.066	.227	-.051	.209	.150	-.065	-.051
x_2		1.00	.013	.680	.212	-.220	-.192	-.436	.096	-.022	-.119	.069	-.141	-.272	.031	.074	.224	-.080	.031	.035
x_3			1.00	-.108	-.504	-.146	-.256	-.615	-.039	.238	-.127	.057	-.534	.212	.184	.305	.214	-.320	.169	.063
x_4				1.00	.150	-.272	-.017	-.464	.154	.106	-.041	.063	-.218	-.221	-.080	.126	.132	-.127	-.47	.151
x_5					1.00	-.334	-.125	-.026	.166	-.120	.053	.079	.204	-.193	.014	-.174	-.003	.214	-.184	.038
x_6						1.00	.102	.154	-.240	-.093	-.019	-.221	-.140	.088	.173	.194	.066	-.295	.556	-.836
x_7							1.00	.016	-.570	.437	.080	-.338	-.109	.169	-.271	-.018	-.550	-.228	-.054	.218
x_8								1.00	.185	-.449	.121	.123	.774	-.138	-.145	-.449	-.097	.531	-.249	-.149
x_9									1.00	-.439	-.220	.730	.373	-.437	.028	-.316	.661	.394	-.199	-.074
x_{10}										1.00	-.175	-.337	-.632	.278	-.238	.355	-.376	-.445	-.175	.535
x_{11}											1.00	-.173	.101	.256	-.014	.009	-.283	.019	.090	-.132
x_{12}												1.00	.313	-.488	.100	-.464	.652	.083	-.270	.251
x_{13}													1.00	-.318	-.138	-.753	-.072	.721	-.290	-.262
x_{14}														1.00	-.052	.332	-.482	-.212	.268	-.144
x_{15}															1.00	.149	.315	-.051	.078	-.049
x_{16}																1.00	.020	-.493	.349	.022
x_{17}																	1.00	-.128	.107	.021
x_{18}																		1.00	-.478	-.292
x_{19}																			1.00	-.697
x_{20}																				1.00

X_1 = Dependent variable
$X_2 \ldots X_{22}$ = Independent variables.

Table 7: Correlation Matrix
Andhra Pradesh (Urban)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}
x_1	1.00	.644	.597	.538	.307	-.651	-.431	-.804	.302	.263	-.422	.453	-.469	-.262	.057	.017	.270	.046	-.182	.177
x_2		1.00	.364	.311	.241	-.475	-.436	-.597	.111	-.007	-.290	.263	-.276	-.442	.158	-.031	.330	.006	-.289	.302
x_3			1.00	.320	-.392	-.326	-.459	-.632	.359	.288	-.667	.444	-.347	-.130	-.169	-.173	.318	-.339	.114	-.024
x_4				1.00	.175	-.632	-.144	-.654	-.048	.124	-.297	.195	-.398	-.342	-.034	-.012	.032	.027	-.465	.462
x_5					1.00	-.570	.074	-.369	-.003	-.028	.081	-.176	-.220	-.171	.188	.293	-.087	.457	-.223	.111
x_6						1.00	-.041	.754	.094	-.538	.215	.120	.572	.022	.264	-.330	.280	.043	.502	-.513
x_7							1.00	.346	-.347	.238	.448	-.444	.051	.374	-.353	.142	-.551	-.205	-.101	.142
x_8								1.00	-.160	-.357	.710	-.173	.695	.174	.059	-.209	-.098	.048	.167	-.187
x_9									1.00	-.491	-.183	.827	.174	-.404	.186	-.394	.815	.249	.610	-.659
x_{10}										1.00	-.156	-.440	-.719	.604	-.557	.430	-.676	-.504	-.435	.551
x_{11}											1.00	-.167	.492	.022	-.078	-.318	-.224	.134	-.272	.228
x_{12}												1.00	.155	-.525	.212	-.580	.850	.168	.354	-.389
x_{13}													1.00	-.413	.319	-.401	.257	.411	.247	-.350
x_{14}														1.00	-.300	.459	-.593	-.547	.016	.120
x_{15}															1.00	-.006	.394	.549	.036	-.168
x_{16}																1.00	-.548	.015	-.099	.094
x_{17}																	1.00	.228	-.516	-.559
x_{18}																		1.00	-.081	-.162
x_{19}																			1.00	-.970
x_{20}																				1.00

Table 8: Correlation Matrix
Karnataka (Urban)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}
x_1	1.00	.278	.224	.346	.124	-.470	-.423	-.402	.521	-.345	-.093	.613	.114	-.433	.211	-.588	.569	.473	-.152	-.059
x_2		1.00	-.210	.773	.250	-.129	-.384	-.298	-.076	-.110	-.115	.104	.071	-.393	.043	-.130	.318	-.098	.049	-.047
x_3			1.00	-.228	-.688	-.535	-.267	-.628	-.004	.059	-.218	.267	-.576	.030	.022	.315	.428	-.320	-.098	.242
x_4				1.00	.160	-.319	-.042	-.501	-.328	.234	-.159	.030	-.272	-.292	-.056	.001	.305	-.104	-.430	.398
x_5					1.00	.464	-.237	.316	-.230	-.318	.426	.236	.579	-.164	.198	-.524	.018	.467	.250	.449
x_6						1.00	.114	.505	-.082	-.192	.027	-.030	.486	.139	-.090	-.235	-.311	.093	.531	-.499
x_7							1.00	.102	-.173	.669	-.119	-.549	-.268	-.036	-.449	.364	-.504	-.252	-.414	.499
x_8								1.00	-.275	-.341	.325	-.257	.703	.257	.157	-.229	-.566	.365	.409	.525
x_9									1.00	-.181	-.233	.771	-.052	-.215	.287	-.494	.720	.508	-.296	.039
x_{10}										1.00	-.349	-.535	-.587	.148	-.470	.521	-.324	-.404	-.575	.683
x_{11}											1.00	-.078	.194	.043	.099	.119	-.207	.181	.200	-.263
x_{12}												1.00	.077	-.323	.461	-.492	.842	.414	.109	-.269
x_{13}													1.00	-.127	.161	-.749	-.273	.650	.525	-.759
x_{14}														1.00	-.059	.283	-.392	.004	-.049	.054
x_{15}															1.00	-.246	.319	.243	.279	-.384
x_{16}																1.00	-.219	-.813	-.264	.594
x_{17}																	1.00	.084	-.094	.046
x_{18}																		1.00	-.008	-.436
x_{19}																			1.00	-.889
x_{20}																				1.00

Table 9: Correlation Matrix
Kerala (Urban)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}
x_1	1.00	.718	.310	-.183	.072	.039	-.218	-.422	.224	-.585	-.333	-.123	.204	.577	.061	-.217	-.187	.133	.539	-.543
x_2		1.00	.508	-.022	-.152	-.082	-.219	-.409	.304	-.557	-.489	-.062	.287	.018	.336	-.332	-.055	.341	.139	-.435
x_3			1.00	.316	-.609	-.246	-.291	-.493	.372	-.118	-.408	.547	-.430	-.124	.452	.501	.615	-.386	.344	.249
x_4				1.00	-.168	-.036	-.222	-.432	.160	-.072	.090	.368	-.198	-.559	.410	-.77	.598	-.386	.194	.213
x_5					1.00	-.302	-.379	-.327	-.153	.369	-.212	-.195	-.017	.159	-.189	-.312	-.192	-.007	-.108	.090
x_6						1.00	.736	.384	-.425	-.414	.525	.056	.208	-.121	.317	-.167	-.168	.120	.320	-.359
x_7							1.00	.613	-.379	-.178	.823	-.024	.195	-.166	.089	-.083	-.154	.205	.143	-.307
x_8								1.00	-.433	-.175	.534	-.543	.339	.163	-.529	-.155	-.641	.535	-.181	-.360
x_9									1.00	.143	-.459	.499	-.268	.014	.101	.166	.354	-.224	-.034	.228
x_{10}										1.00	-.146	.435	-.680	-.271	-.013	.529	.418	-.442	-.598	.877
x_{11}											1.00	-.181	.164	-.109	-.102	-.125	-.065	.006	.347	-.276
x_{12}												1.00	-.846	-.464	.727	.623	.867	-.787	.042	.703
x_{13}													1.00	.267	-.484	-.339	-.855	.905	.017	-.864
x_{14}														1.00	-.666	.004	-.559	.188	.332	-.429
x_{15}															1.00	.203	.687	-.472	.139	.293
x_{16}																1.00	.604	-.723	-.057	.728
x_{17}																	1.00	-.840	.099	.709
x_{18}																		1.00	-.332	-.683
x_{19}																			1.00	-.461
x_{20}																				1.00

Table 10: Correlation Matrix
Tamil Nadu (Urban)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}
x_1	1.00	.159	.559	.308	.118	-.675	-.544	-.722	.142	-.127	.778	.168	-.335	.421	.612	.260	-.415	.272	-.272	.029
x_2		1.00	-.421	.879	.795	-.305	-.325	-.423	.750	-.164	-.0008	.762	-.021	-.487	-.505	.279	.596	-.026	-.044	.242
x_3			1.00	-.408	-.489	-.292	-.480	-.543	-.171	.317	.664	-.143	-.503	.630	.729	-.101	-.442	.029	-.094	-.013
x_4				1.00	.665	-.410	-.283	-.447	.722	-.195	.041	.642	-.019	-.429	-.353	.368	.397	.083	.064	.078
x_5					1.00	-.410	-.178	-.228	.325	-.339	.152	.302	.258	-.350	-.449	.143	.240	.168	-.001	-.145
x_6						1.00	.566	.433	-.275	.352	-717	-.108	-.154	-.278	-.335	-.071	.158	-.554	.371	.231
x_7							1.00	,546	-.555	-.068	-.529	-.409	.073	.139	-.223	.159	.056	-.330	.265	.042
x_8								1.00	-.326	-.191	-.628	-.394	.669	.229	-.251	-.305	.048	.146	-.074	-.063
x_9									1.00	-.005	-.089	.888	.083	-.609	-.324	.109	.636	.167	-.327	.425
x_{10}										1.00	-.155	.045	-.376	.099	.243	-.251	-.133	-.230	.027	.269
x_{11}											1.00	-.097	-.293	.583	.594	.148	-.402	.227	-.090	-.287
x_{12}												1.00	-.079	-.496	-.227	.077	.653	.015	-.303	.598
x_{13}													1.00	-.442	-.197	-.383	.001	.709	-.487	-.156
x_{14}														1.00	.709	.129	-.503	-.072	.032	-.103
x_{15}															1.00	-.274	-.694	.353	-.429	.046
x_{16}																1.00	.240	-.359	.391	-.113
x_{17}																	1.00	-.372	.144	.440
x_{18}																		1.00	-.826	-.075
x_{19}																			1.00	-.489
x_{20}																				1.00

Table 11: Education-Specific Rural Female Participation Rates

S. No.	Name of the State/ Districts	Total female population	Total female workers	Female participation rate	Participation of Illiterate female workers	Participation of literate female workers
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Andhra Pradesh					
1.	Srikulam	1172640	327858	27.96	29.40	10.16
2.	Visakapatnam	1094543	281839	25.75	26.99	7.46
3.	East Godavari	1244690	244002	19.60	22.57	6.49
4.	West Godavari	973799	235089	24.14	28.79	4.65
5.	Krishna	892939	210117	23.53	27.33	10.58
6.	Guntur	1052613	277102	26.33	28.99	13.39
7.	Ongole	849150	210380	24.78	26.12	13.55
8.	Nellore	674211	173602	25.75	28.36	9.78
9.	Chittor	970841	228733	23.56	25.36	8.73
10.	Cuddapah	663149	150586	22.71	24.23	8.43
11.	Anantpur	847248	248577	29.34	30.97	10.41
12.	Kurnool	779143	247407	31.75	33.64	12.34
13.	Mehboobnagar	876063	313594	35.80	37.44	9.23
14.	Hyderabad	469463	159874	34.05	36.05	7.97
15.	Medak	667556	212821	31188	32.24	5.71
16.	Nizamabad	555190	192077	34.60	35.95	10.41
17.	Adilabad	537855	151408	28.15	28.91	8.69
18.	Karimnagar	872269	290450	33.30	34.47	9.16
19.	Wrangal	792891	219100	27.63	28.95	7.80
20.	Khamma	580194	148545	25.60	27.28	7.43
21.	Nalgonda	855497	259859	28.63	30.31	6.50
	Karnataka					
1.	Bangalore	729763	66936	9.17	9.83	5.17
2.	Belgaum	940735	151235	16.08	17.19	8.56
3.	Bellary	404841	90736	22.41	23.87	8.75
4.	Bidar	347100	45215	13.03	15.53	4.79

contd...

(1)	(2)	(3)	(4)	(5)	(6)	(7)
5.	Bijapur	776605	132453	17.06	18.01	8.63
6.	Chickmaglur	301253	45921	15.24	17.57	6.91
7.	Chitradurga	544358	108008	19.84	21.84	4.37
8.	Coorg	152850	39175	25.63	31.06	15.70
9.	Dharwar	787203	144320	18.33	20.56	8.97
10.	Gulburga	711200	109750	15.43	15.96	4.78
11.	Hassan	472543	42376	8.97	9.88	4.11
12.	Kolar	591954	85434	14.43	15.39	6.34
13.	Mandya	489652	40613	8.29	8.89	2.92
14.	Mysore	754233	79376	10.52	11.19	3.61
15.	North Kanara	341476	51095	14.96	17.87	7.36
16.	Raichur	595617	107924	18.12	18.92	7.41
17.	Shimoga	482048	58606	12.16	13.97	5.61
18.	South Kanara	798803	246416	30.85	34.03	23.50
19.	Tumkur	705548	77354	10.96	12.04	4.81
	Kerala					
1.	Cannore	1029713	157284	15.27	17.53	12.60
2.	Kozhikode	768470	79877	10.39	13.07	7,23
3.	Malappuram	883482	91369	10.34	12.51	7.14
4.	Palghat	757623	186996	24.88	32.90	12.15
5.	Trichur	977047	160256	16.40	19.57	14.07
6.	Ernakulum	860420	114132	13.26	14.82	12.17
7.	Kottayam	924851	114752	12.41	16.69	9.87
8.	Alleppy	896021	126059	14.07	15.88	13.13
9.	Quilon	1112746	142792	12.83	15.10	11.29
10.	Trivendrum	818203	097992	11.98	14.83	9.60

contd...

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Tamil Nadu					
1.	Madras	-	-	-	-	-
2.	Chengalpattu	931319	134695	14.46	16.38	5.97
3.	North Arcot	1465096	242312	16.54	18.22	7.51
4.	South Arcot	1530378	194053	12.68	13.83	5.43
5.	Dharampuri	755297	110832	14.67	15.54	7.01
6.	Salem	1080064	221855	20.54	22.36	9.58
7.	Coimbatore	1389709	337271	24.27	26.71	12.63
8.	Niligiris	0222868	37515	30.53	35.88	16.72
9.	Madurai	1305379	284303	21.78	24.04	11.97
10.	Tiruchirpalli	1496006	273923	18.31	19.98	9.85
11.	Thanjavur	1522102	193846	12.74	14.92	4.80
12.	Ramnathapuram	1033967	207318	19.12	20.62	12.80
13.	Tirunelveli	1112442	251898	22.64	25.57	15.08
14.	Kannyakumari	500980	29500	5.89	5.68	6.09

Table 12: Education - Specific Participation Rates in Urban Areas (females)

S. N.	Name of State/ Districts	Total Female population	Total female workers	Female participation rates (%)	Participation of Illiterate workers (%)	Participation of literate without education levels (%)	Participation rates of primary educated women (%)	Average (7+8)	Participation rates middle educated women (%)	Participation rate of matric & above educated women (%)	Participation rate of Non-technical diploma holders (%)	Participation rates of graduate & above (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Andhra Pradesh											
1.	Srikulam	138266	18900	13.67	17.22	2.21	2.57	2.40	5.78	21.82	17.24	66.40
2.	Visakapatnam	306042	24064	7.86	10.01	1.54	1.75	1.64	4.73	18.54	15.45	39.86
3.	East Godavari	295707	29990	10.14	13.83	2.70	2.72	2.71	5.48	18.89	16.21	38.92
4.	West Godavari	209569	24546	11.71	16.10	4.46	4.56	4.51	7.90	16.16	13.13	42.54
5.	Krishna	331236	27565	8.32	11.12	2.73	2.73	2.80	5.31	19.53	16.61	47.85
6.	Guntur	350818	49202	14.02	18.23	4.99	4.99	4.82	6.71	18.73	14.66	41.15
7.	Ongole	104665	15579	14.88	17.98	7.12	7.12	6.64	9.55	23.10	20.15	54.31
8.	Nellore	124705	15195	15.39	17.01	3.54	3.54	3.78	5.13	16.45	14.40	36.83
9.	Chittor	148463	14343	9.66	12.24	2.84	2.84	2.79	6.17	17.80	13.97	44.57
10.	Cuddapah	108602	10317	9.50	11.68	3.16	3.16	2.74	9.18	18.01	14.36	54.12
11.	Anantpur	181840	18985	10.44	13.25	3.67	3.67	1.16	6.30	16.87	13.85	45.20
12.	Kurnool	196426	30757	15.66	19.23	4.56	4.56	3.95	8.13	21.81	19.97	36.37
13.	Mahbubnagar	84037	14037	16.70	20.62	4.87	4.87	3.97	4.92	25.95	22.98	63.31
14.	Hyderabad	879927	64773	7.36	8.65	1.87	1.87	1.66	2.97	21.18	16.47	46.02
15.	Medak	61322	8351	13.62	17.18	2.07	2.07	1.69	4.55	21.53	19.57	29.80
16.	Nizamabad	100989	15190	15.04	18.33	4.51	4.51	3.04	3.74	25.43	23.41	51.52
17.	Adilabad	98433	8504	8.64	10.25	2.74	2.74	2.04	3.45	9.38	9.03	13.22
18.	Karimnagar	102087	15972	15.65	18.82	4.98	4.98	4.81	5.61	18.84	16.48	57.14
19.	Wrangal	121308	11863	9.78	12.17	2.83	2.83	2.14	3.55	20.80	15.09	61.17
20.	Khammam	89595	6435	7.18	8.86	1.23	1.23	1.35	4.35	10.82	18.30	45.15
21.	Nalgonda	58074	6546	11.27	14.72	2.11	2.11	2.03	4.33	29.67	27.17	54.54
	Karnataka											
1.	Bangalore	873227	60157	6.89	6.99	1.84	2.66	2.29	3.29	20.10	17.39	39.07
2.	Belgaum	237792	18464	7.76	9.98	2.01	3.10	2.63	2.96	14.04	11.99	36.50
3.	Bellary	147041	17184	11.69	14.69	1.88	2.64	2.32	4.05	13.71	12.58	31.31
4.	Bidar	57147	4956	8.67	9.93	3.40	1.64	2.38	5.30	20.57	17.79	45.45
5.	Bijapur	203419	22840	11.23	13.58	4.68	4.68	4.68	4.79	12.89	11.18	48.61
6.	Chickmaglur	55097	4017	7.29	9.39	2.41	3.08	2.81	3.27	14.23	13.26	43.33
7.	Chitradurga	132556	11822	8.92	12.31	3.16	3.34	3.26	2.94	9.80	8.51	29.70
8.	Coorg	27332	4035	14.78	20.26	5.88	6.90	6.49	4.80	23.58	21.80	46.35
9.	Dharwar	351416	37150	10.57	13.61	4.40	3.90	4.12	3.89	16.08	13.83	35.05
10.	Gulbarga	149848	16636	11.10	12.97	3.06	4.29	3.74	4.29	21.53	18.31	45.80
11.	Hassan	71371	4433	6.21	7.60	3.00	2.37	2.63	8.65	11.90	9.90	49.16
12.	Kolar	151399	9664	6.40	7.76	2.56	2.66	2.02	3.29	14.38	13.00	40.79
13.	Mandya	75808	5345	7.05	8.42	1.80	2.17	2.01	4.02	14.09	13.27	32.26
14.	Mysore	253101	17939	7.09	8.21	1.58	2.72	2.24	3.22	16.66	13.04	44.32
15.	North Kanara	73683	5781	7.85	10.85	2.68	3.14	2.93	2.77	14.66	12.89	39.43
16.	Raichur	105373	11322	10.74	12.89	3.76	1.87	2.72	2.82	11.50	9.69	41.26
17.	Shimoga	145461	9535	6.57	8.57	1.87	2.86	2.42	2.79	12.97	11.30	37.26
18.	South Kanara	198017	42125	21.27	24.75	14.33	21.86	18.71	18.17	22.05	20.41	38.51
19.	Tumkur	90314	8005	8.86	11.27	3.27	5.66	4.63	3.94	13.48	11.96	38.26

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Kerala											
1.	Cannore	163113	18422	11.29	12.80	7.25	10.15	8.94	5.63	24.16	23.66	42.89
2.	Kozhikode	280055	19574	6.99	6.77	4.64	5.32	5.04	4.66	5.16	26.05	46.66
3.	Malappuram	63365	4860	7.67	8.37	4.53	5.62	5.16	4.79	29.86	27.77	56.67
4.	Palghat	108148	15746	14.56	20.03	6.98	8.40	7.82	4.98	25.44	22.95	46.95
5.	Trichur	128976	15695	12.17	12.90	9.05	10.82	10.15	4.53	25.93	22.63	55.49
6.	Ernakulum	320812	30808	9.60	8.64	7.81	8.09	7.98	3.81	26.42	23.44	55.49
7.	Kottayam	105318	10479	9.95	9.38	9.83	8.32	8.91	3.76	23.12	19.29	43.42
8.	Alleppy	181619	20348	11.20	11.66	10.19	10.94	10.64	4.79	22.77	19.74	44.66
9.	Quilon	94355	12532	13.28	13.87	12.57	13.69	13.25	6.10	21.53	17.79	43.32
10.	Trivendrum	285227	31904	11.19	11.12	7.74	8.32	8.09	4.73	28.52	21.65	57.29
	Tamil Nadu											
1.	Madras	1172254	59546	5.08	3.93	1.22	1.87		4.97		20.61	40.37
2.	Chengalpattu	483302	31955	6.61	7.32	1.84	2.16	2.01	6.30	23.85	22.41	43.50
3.	North Arcot	385341	28263	7.33	8.47	2.32	2.97	2.65	7.16	26.48	24.11	62.70
4.	South Arcot	250395	13854	5.53	6.76	1.14	1.40	1.27	4.76	19.47	3.13	40.32
5.	Dharampuri	70204	4930	7.02	8.15	2.02	2.24	2.13	7.28	7.78	23.54	82.35
6.	Salem	388223	50742	13.07	16.33	5.83	5.63	5.74	7.17	22.15	20.11	52.55
7.	Coimbatore	748430	100302	13.40	17.09	5.89	6.10	6.00	7.37	22.35	20.69	41.35
8.	Nilgiris	117027	25078	21.43	27.73	10.18	11.02	10.58	11.11	27.03	25.28	42.10
9.	Madurai	649913	62537	9.62	11.89	4.01	4.73	4.38	7.51	22.47	20.21	48.53
10.	Tiruchirpalli	420259	30751	7.32	9.53	2.29	2.76	2.53	5.18	19.19	17.64	41.67
11.	Thanjavur	392587	20465	5.21	6.10	1.71	1.77	1.75	4.63	21.14	19.13	55.90
12.	Ramanathapuram	375405	51151	13.63	16.40	8.83	8.92	8.87	8.51	22.60	20.57	76.35
13.	Tirunelvelli	520515	68654	17.15	16.55	7.51	7.44	7.47	8.52	20.82	18.94	45.99
14.	Kanyakumari	101685	7354	7.23	5.92	6.04	6.04	6.04	5.49	22.30	19.58	48.48

Table 13: Economic Indicators in Rural Areas

Sl. No.	Name of State/ Districts	No. of manufacturing establishments per 1000 of women population	Proportion of workers in primary sector (% terms)	Propotion of cultivators among total workers	Propottion of agricultural resources among total workers	Proportion of workers in secondary sectors	Proportion of workers in Tertiary sectors
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh							
1.	Srikakulam	13.28	39.20	32.18	55.84	4.36	6.44
2.	Vishakapatnam	8.78	90.46	40.24	49.77	3.53	6.01
3.	East Godavari	16.81	85.03	7.22	77.18	5.68	9.90
4.	West Godavari	7.80	89.57	5.50	83.35	2.75	7.68
5.	Krishna	8.73	86.67	3.29	82.74	5.34	8.99
6.	Guntur	9.60	87.72	8.61	78.15	5.61	6.67
7.	Ongole	20.72	86.88	11.56	71.98	6.20	6.93
8.	Nellore	8.61	88.33	8.77	77.99	4.20	7.48
9.	Chittor	12.68	92.73	30.99	59.55	2.67	4.61
10.	Cuddapah	13.04	87.64	12.09	73.91	6.09	6.27
11.	Anantpur	7.54	93.27	23.32	68.88	3.02	3.71
12.	Kurnool	6.87	92.55	12.99	79.14	3.06	4.38
13.	Mehbubnagar	14.97	89.73	23.20	65.99	6.59	3.68
14.	Hyderabad	11.97	88.63	30.38	57.18	6.06	5.31
15.	Medak	17.52	90.61	32.91	57.30	5.46	3.93
16.	Nizamabad	20.81	75.20	35.16	39.56	20.62	4.19
17.	Adilabad	14.81	87.99	30.56	56.83	7.01	5.00
18.	Karimnagar	18.43	81.47	26.95	54.06	12.09	6.43
19.	Wrangal	16.29	88.44	19.64	68.18	4.75	6.81
20.	Khamman	9.92	89.14	11.92	76.17	3.72	7.14
21.	Nalgonda	18.15	85.35	20.11	63.75	6.51	8.08
Karnataka							
1.	Bangalore	86.06	35.88	46.17	8.81	7.13	5.95
2.	Belgaon	91.12	37.78	51.58	5.74	3.14	15.90
3.	Bellary	88.11	19.50	67.88	6.51	5.38	7.58
4.	Bidar	85.66	12.60	71.79	3.04	10.49	5.35

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5.	Bijapur	16.27	90.02	13.75	74.05	5.72	4.26
6.	Chickmagalur	5.88	83.93	14.32	30.23	3.51	12.69
7.	Chitradurga	9.68	90.28	30.35	57.80	5.56	4.22
8.	Coorg	4.04	85.35	17.27	25.46	4.61	10.09
9.	Dhanwar	15.41	91.22	13.45	76.78	4.45	4.35
10.	Gulbarga	6.84	83.84	13.37	69.45	6.89	9.28
11.	Haccan	3.46	86.19	42.57	23.06	7.46	6.25
12.	Kolar	5.11	94.08	44.34	43.86	2.62	3.30
13.	Mandya	6.79	88.62	35.94	49.53	3.93	7.45
14.	Mysore	6.20	76.95	28.63	44.59	11.03	12.02
15.	North Kanara	9.83	80.38	38.37	30.70	8.33	11.29
16.	Raichur	5.71	88.91	18.98	67.73	4.57	6.53
17.	Shimoza	4.88	93.06	23.08	66.26	4.01	2.93
18.	South Kanara	29.01	71.91	32.00	38.00	22.13	5.96
19.	Tumkur	9.79	88.60	39.69	45.14	6.23	5.17
	Kerala						
1.	Cannore	10.38	79.49	10.02	65.26	9.77	10.74
2.	Kozhikod	5.98	72.63	5.06	51.76	13.18	14.18
3.	Malapuram	6.07	77.77	6.26	69.63	8.49	13.74
4.	Palghat	8.48	87.09	7.74	77.27	5.18	7.74
5.	Trichur	8.96	62.94	5.10	55.79	19.86	17.20
6.	Ernakulam	9.85	58.91	3.74	52.66	21.78	19.31
7.	Kottayam	7.01	75.48	2.52	30.53	6.78	17.74
8.	Alleppy	9.52	56.67	2.08	53.80	25.82	17.51
9.	Quilon	8.11	29.21	1.83	23.89	55.17	15.62
10.	Trivandrum	7.71	37.49	2.54	32.90	41.34	21.17

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tamil Nadu							
1.	Madras	-	-	-	-	-	-
2.	Chengalpattu	8.40	88.49	12.88	74.66	5.42	6.09
3.	North Arcot	8.61	91.79	19.19	71.56	3.23	4.98
4.	South Arcot	4.65	93.75	18.02	75.01	1.79	4.46
5.	Dharampuri	9.11	93.44	32.96	40.41	1.75	4.81
6.	Salem	18.43	86.57	18.72	29.25	8.27	5.16
7.	Coimbatore	5.21	84.06	3.23	63.92	9.74	6.10
8.	Nilgiris	5.32	91.48	22.90	10.23	3.59	4.92
9.	Madurai	9.08	91.95	34.03	65.89	2.92	5.12
10.	Tiruchirapalli	6.56	91.01	13.37	55.69	4.01	4.38
11.	Thenjavur	6.18	91.55	29.87	77.70	2.39	6.06
12.	Ramanathapuram	10.77	83.48	16.89	52.43	11.49	5.24
13.	Tirunelevet	6.27	73.73	10.77	55.66	19.60	6.67
14.	Kanyakumari	6.27	37.26	2.52	31.16	38.81	25.93

Table 14: Economic indicators in rural areas

Sl. No.	Name of State/ districts	Growth of agricultural output 1962-65 to 1972-75	Cropping Intensity	Given co-efficient of concentration of land widip	Percentage of irrigated area	Index of agricultural modernisation
		(9)	(10)	(11)	(12)	(13)
Andhra Pradesh						
1.	Srikakulam	-0.29	1.17	0.588	40.90	1.42
2.	Visakhapatnam	-0.29	1.17	0.588	40.90	1.42
3.	East Godavari	-0.85	1.33	0.611	62.78	4.02
4.	West Godavari	1.53	1.31	0.617	79.27	4.98
5.	Krishna	0.61	1.30	0.594	56.70	4.80
6.	Guntur	0.74	1.16	0.593	30.25	7.64
7.	Ongole	0.74	1.14	0.593	30.25	7.64
8.	Nellore	0.74	1.12	0.593	30.25	7.64
9.	Cuddapah	-1.26	1.05	0.576	30.20	2.01
10.	Chittor	2.82	1.14	0.593	39.64	4.15
11.	Anantpur	-1.52	1.02	0.581	15.80	2.10
12.	Kernool	0.74	1.14	0.593	30.25	7.64
13.	Mahbubnagar	-1.84	1.03	0.547	10.31	1.65
14.	Hyderabad	-3.72	1.04	0.592	14.11	1.73
15.	Medak	-5.32	1.04	0.612	17.02	1.30
16.	Nizamabad	-4.47	1.10	0.609	36.23	1.95
17.	Allesad	00.89	1.03	0.563	85.29	0.37
18.	Kaninmajar	-0.57	1.09	0.643	26.83	3.17
19.	Wrangal	0.37	1.20	0.624	23.17	2.11
20.	Khemmen	-0.14	1.00	0.572	15.38	1.27
21.	Nelgonda	1.22	1.20	0.576	25.16	2.29
Karnataka						
1.	Bangalore	1.16	1.13	0.514	25.12	5.96
2.	Belgaum	0.99	1.04	0.549	13.35	4.83
3.	Bellory	2.40	1.39	0.498	10.68	3.66
4.	Bidar	0.12	1.01	0.494	04.12	1.25
5.	Bijapur	1.65	1.09	0.481	4.99	3.51

		(9)	(10)	(11)	(12)	(13)
6.	Chickmagalur	3.28	1.09	0.551	4.10	1.81
7.	Coorg	-0.36	1.08	0.579	7.52	1.11
8.	Chitradurga	6.91	1.42	0.512	21.56	3.93
9.	Dharwar	0.49	1.01	0.479	86.33	2.95
10.	Gulbarga	-0.26	1.15	0.481	2.68	1.20
11.	Hassan	0.59	1.17	0.502	12.78	1.94
12.	Kolar	1.14	1.13	0.509	38.55	3.98
13.	Mandya	1.92	1.20	0.514	34.99	2.69
14.	Mysore	4.00	1.10	0.468	16.22	3.06
15.	North Kanara	0.26	1.00	0.620	23.65	0.62
16.	Raichur	6.64	1.22	0.466	16.06	4.28
17.	Shimoga	5.56	1.22	0.484	48.44	3.58
18.	South Kanara	-1.06	1.15	0.541	47.89	3.76
19.	Tumkur	4.53	1.16	0.549	17.87	2.88
	Kerala					
1.	Cannanore	0.90	1.23	0.622	3.54	2.19
2.	Kozhipoode	2.78	1.72	0.585	7.57	5.63
3.	Malappuram	2.78	1.42	0.585	7.71	5.83
4.	Palghat	2.78	1.57	0.585	7.43	5.43
5.	Trichur	1.49	1.34	0.566	22.32	1.95
6.	Ernakulam	2.78	1.68	0.585	7.57	5.52
7.	Kottayam	2.78	1.68	0.585	7.57	5.52
8.	Alleppy	2.35	1.02	0.512	13.38	2.26
9.	Quilon	1.23	1.32	0.476	0.88	0.98
10.	Trivandrum	0.92	1.90	0.486	2.15	0.65
	Tamil Nadu					
1.	Madras	3.39	0.49	0.584	72.03	2.86
2.	Chengalpathy	1.31	0.62	0.488	40.62	4.37
3.	North Arcot	5.01	0.25	0.542	52.49	0.27

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		(9)	(10)	(11)	(12)	(13)
4.	South Arcot	1.08	0.51	0.485	40.09	2.25
5.	Dharampur	1.08	0.51	0.485	48.03	2.25
6.	Selam	0.33	0.47	0.531	54.80	3.35
7.	Coimbatore	-	-	-	-	-
8.	Nilgiri	1.97	0.60	0.564	38.93	1.00
9.	Madurai	1.91	0.49	0.582	56.38	3.74
10.	Tiruchirappalli	4.64	0.61	0.584	71.74	2.80
11.	Thanjavoor	0.88	0.51	0.633	41.16	1.56
12.	Ramanathapuram	1.38	0.51	0.633	41.16	1.56
13.	Tirunveli	4.06	0.52	0.480	26.82	2.68
14.	Kannyakumari					

Table 15: Demographic Indicators in Rural Areas

Sl. No. (1)	Name of State/ Districts (2)	Sex ratio (3)	Child-women Ratio (4)
Andhra Pradesh			
1.	Srikakulam	1027	0.58
2.	Vishakapatnam	1009	0.55
3.	East Godavari	997	0.57
4.	West Godavari	994	0.56
5.	Krishna	969	0.59
6.	Guntur	974	0.59
7.	Ongole	989	0.59
8.	Nellore	989	0.54
9.	Chittor	964	0.57
10.	Cuddapah	960	0.59
11.	Anantpur	950	0.68
12.	Kurnool	973	0.69
13.	Mahboobnagar	992	0.67
14.	Hyderabad	972	0.64
15.	Medak	988	0.65
16.	Nizamabad	1012	0.62
17.	Adilabad	987	0.66
18.	Karimnagar	990	0.59
19.	Warangal	954	0.68
20.	Khamman	961	0.73
21.	Nalgonda	969	0.66
Karnataka			
1.	Bangalore	948	0.66
2.	Belgaum	955	0.70
3.	Bellary	980	0.66
4.	Bijapur	970	0.70
5.	Bidar	986	0.66
6.	Chicknagalur	940	0.76
7.	Chitradurga	954	0.71
8.	Coorg	917	0.66
9.	Dhanwar	963	0.67
10.	Gulbarga	990	0.59
11.	Hassan	984	0.72
12.	Kolar	968	0.72
13.	Mendya	958	0.67
14.	Mysore	950	0.61
15.	North Kanara	956	0.69
16.	Raichur	988	0.63
17.	Shimoga	941	0.65
18.	South Kanara	1069	0.69
19.	Tumkur	964	0.73

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(1)	(2)	(3)	(4)
Kerala			
1.	Cannanore	1019	0.59
2.	Kozhikode	990	0.60
3.	Malappuram	1042	0.66
4.	Palghat	1042	0.66
5.	Trichur	1062	0.55
6.	Ernakulam	1083	0.55
7.	Kottayam	994	0.55
8.	Alleppy	976	0.56
9.	Quilon	1030	0.48
10.	Trivandrum	1002	0.53
Tamil Nadu			
1.	Madras	965	0.58
2.	Chengalputtu	972	0.59
3.	North Arcot	972	0.58
4.	South Arcot	970	0.55
5.	Dharampur	974	0.55
6.	Salem	974	0.43
7.	Coimbatore	961	0.55
8.	Nilgiri	998	0.56
9.	Madurai	1000	0.51
10.	Tiruchirappalli	994	0.51
11.	Tanjavoor	1053	0.56
12.	Ramanathapuram	1051	0.53
13.	Tirunelali	1069	0.53

Table 16: Socio-Cultural Variables in Rural Areas

Sl. No.	Name of State/ districts	Female Heads of House-holds	Proportion of litera-te females	Proportion of SC Female Popula-tion	Proportic of ST Female Popula-tion
(1)	(2)	(3)	(4)	(5)	(6)
	Andhra Pradesh				
1.	Srikakulam	15.37	7.48	9.32	8.95
2.	Vishakapatnam	15.27	6.52	7.70	13.45
3.	East Godavari	13.64	20.76	18.29	4.68
4.	West Godavari	12.19	25.28	15.64	2.49
5.	Krishna	10.40	22.69	11.91	2.38
6.	Guntur	12.35	17.10	5.14	3.95
7.	Ongob	13.62	10.67	9.87	2.80
8.	Nellore	14.17	14.03	21.97	8.06
9.	Chittor	11.82	10.83	19.15	3.12
10.	Cuddapah	11.95	9.61	12.01	1.81
11.	Anantpur	13.53	7.92	14.57	3.58
12.	Kurnool	15.86	8.88	11.90	1.75
13.	Mahbubnagar	15.30	5.83	17.75	0.31
14.	Hyderabad	10.54	7.09	21.57	0.11
15.	Medak	11.61	4.94	16.44	0.01
16.	Nizamabad	13.08	5.19	16.63	0.04
17.	Adilebad	7.85	3.74	18.14	15.52
18.	Karim Nagar	11.37	4.65	19.59	0.89
19.	Warangal	7.41	6.21	16.61	2.66
20.	Khamman	7.89	8.43	12.13	17.02
21.	Nalgonda	9.77	7.04	16.11	0.03
	Karnataka				
1.	Bangalore	11.55	14.10	17.14	0.37
2.	Belgaum	10.71	12.92	9.99	2.53
3.	Bellary	17.29	9.61	17.04	2.36
4.	Bidar	6.17	5.76	16.15	0.06
5.	Bijapur	13.34	10.18	11.21	0.36
6.	Chickmagalur	9.19	21.80	17.63	1.62
7.	Chitradurga	13.41	15.21	20.23	0.05
8.	Coorg	9.19	35.37	10.13	8.26
9.	Dharwar	14.09	19.22	8.93	0.75
10.	Gulbarga	11.95	4.75	16.25	0.08
11.	Hassan	12.01	15.78	15.98	0.16
12.	Kolar	11.95	10.59	24.26	0.06
13.	Mendya	12.14	9.99	12.26	0.16
14.	Mysore	13.97	8.83	19.26	1.20
15.	North Kanara	15.54	27.63	4.16	0.23
16.	Raichur	16.09	6.93	11.12	0.06
17.	Shimoga	9.88	21.65	16.36	0.77
18.	South Kanara	22.01	30.23	5.37	3.74
19.	Tumkur	12.99	14.93	17.75	0.14

(1)	(2)	(3)	(4)	(5)	(6)
Kerala					
1.	Cannanore	25.02	45.70	2.54	4.07
2.	Kazhikodi	15.88	45.84	3.75	5.39
3.	Malappuram	18.27	40.40	7.78	0.49
4.	Palghat	21.69	39.18	13.16	1.62
5.	Trichur	20.27	56.06	10.52	0.47
6.	Ernakulam	10.31	58.61	9.46	0.64
7.	Kottayam	7.82	62.74	9.14	1.23
8.	Alleppy	15.67	65.92	10.27	0.02
9.	Quilon	14.90	59.63	12.04	0.16
10.	Trivandrum	21.80	54.60	10.66	0.67
Tamil Nadu					
1.	Madras	12.84	18.44	32.26	1.21
2.	Chengalpethi	13.70	16.11	21.24	2.29
3.	North Arcot	12.05	13.09	28.37	8.44
4.	South Arcot	14.30	10.20	14.11	1.89
5.	Dharampur	14.54	14.25	18.47	4.29
6.	Salem	13.40	17.35	17.71	0.87
7.	Coimbator	10.44	27.98	18.51	5.57
8.	Nilgiri	15.65	18.71	19.05	0.20
9.	Madurai	14.55	16.48	20.66	0.48
10.	Tiruchirappalli	13.16	21.57	25.85	0.02
11.	Thanjavoor	19.25	19.14	28.15	0.02
12.	Ramanathapuram	18.94	27.93	18.75	0.04
13.	Tirunelveli	15.03	50.43	4.06	0.27

Table 17: Socio-Cultural Indicators in Rural Areas

Sl. No.	Name of States/ Districts	Proportion of married among females	Proportion of widowed/ divorced/ separated females	Proportion of Christian women population	Proportion of Hindu women population	Proportion of Muslim women population
(1)	(2)	(7)	(8)	(9)	(10)	(11)
	Andhra Pradesh					
1.	Srikakulam	44.01	14.44	0.71	99.16	0.13
2.	Vishakapatnam	44.70	15.59	0.35	99.29	0.29
3.	East Godavari	45.39	13.03	2.23	96.94	0.83
4.	West Godavari	46.35	12.03	7.75	90.93	1.31
5.	Krishna	44.94	10.83	12.23	83.82	3.94
6.	Guntur	44.72	18.61	12.07	76.12	8.01
7.	Ongoli	44.42	13.52	11.17	82.72	6.09
8.	Nellore	43.32	14.09	2.11	87.92	6.95
9.	Chittor	44.16	13.47	1.27	91.88	6.85
10.	Cuddapah	42.70	13.73	4.91	83.61	11.48
11.	Anantpur	41.70	12.29	0.47	92.16	7.36
12.	Kurnool	42.57	12.80	6.53	80.72	12.75
13.	Mahboobnagar	47.36	13.03	1.27	91.87	6.87
14.	Hyderabad	47.69	11.03	1.15	89.20	9.63
15.	Medak	48.94	12.68	3.22	86.52	9.75
16.	Nizamabad	50.83	14.50	1.19	90.70	8.08
17.	Adilibad	49.14	12.15	0.94	92.77	5.41
18.	Karim Nagar	50.54	11.93	0.65	96.13	3.22
19.	Warangel	48.75	10.13	1.48	95.13	3.39
20.	Khamman	43.13	9.96	4.73	90.97	4.27
21.	Nalgonda	47.73	11.49	2.24	93.72	4.02
	Karnataka					
1.	Bangalore	41.98	9.64	1.25	94.40	4.29
2.	Belgaum	43.61	11.40	0.39	88.09	6.75
3.	Bellary	42.04	12.17	0.24	93.48	6.21
4.	Bidar	47.39	9.02	4.00	81.24	14.58

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(1)	(2)	(7)	(8)	(9)	(10)	(11)
5.	Bijapur	44.30	12.84	0.08	89.47	9.76
6.	Chickmagalur	38.05	8.73	2.57	92.06	4.96
7.	Chitradurga	40.89	10.55	0.03	95.57	4.36
8.	Coorg	37.35	7.84	2.63	87.62	9.74
9.	Dhanwar	39.97	11.85	0.13	93.74	11.93
10.	Gulbarga	45.41	12.48	0.81	86.18	12.80
11.	Hassan	39.02	9.82	0.74	96.49	2.66
12.	Kolar	42.93	11.82	0.17	92.79	6.98
13.	Mendya	42.30	10.74	0.17	97.96	1.84
14.	Mysore	42.56	11.35	0.95	96.01	2.54
15.	North Kanara	36.24	13.16	3.02	90.50	5.65
16.	Raichur	43.34	13.79	1.11	90.17	8.67
17.	Shimaga	37.27	8.49	0.55	92.06	6.97
18.	South Kanara	35.94	10.92	8.23	80.12	11.01
19.	Tumkur	41.40	10.65	0.06	95.43	4.39
<u>Kerala</u>						
1.	Kannanore	36.63	12.14	9.89	67.22	22.82
2.	Kozhikode	38.39	11.18	8.43	62.12	29.32
3.	Malappuram	37.87	12.40	2.01	34.53	63.40
4.	Palghat	37.03	13.29	2.40	76.79	20.81
5.	Trichur	34.67	10.28	22.92	62.98	14.10
6.	Ernakulam	35.62	8.35	43.52	46.13	10.20
7.	Kottayam	39.99	7.17	47.58	48.73	3.56
8.	Alleppy	35.85	10.81	28.57	66.81	4.61
9.	Quilon	35.64	9.47	23.48	64.36	12.16
10.	Trivandrum	34.49	10.68	17.85	70.13	12.01

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(1)	(2)	(7)	(8)	(9)	(10)	(11)
Tamil Nadu						
1.	Madras	42.78	11.96	2.91	95.33	4.73
2.	Chengalpettu	43.00	12.27	2.25	95.80	2.47
3.	North Arcot	43.84	12.32	3.53	93.52	2.77
4.	South Arcot	43.11	9.92	1.00	97.05	3.24
5.	Dharampur	45.83	11.56	1.03	98.10	0.85
6.	Salem	43.79	12.10	1.60	97.19	1.20
7.	Coimbatore	40.47	7.94	9.78	85.24	4.50
8.	Nilgiri	42.57	12.09	3.47	93.96	2.56
9.	Madurai	43.56	13.63	4.89	92.57	2.51
10.	Tiruchirappalli	43.16	12.56	3.93	89.83	6.08
11.	Thanjavoor	41.78	12.33	6.15	87.96	5.88
12.	Ramanathapuram	41.78	12.33	6.15	87.96	3.87
13.	Tirunnelveli	36.83	9. 16	41.19	55.65	3.15

Table 18: Economic Indicators in Urban Areas

Sl. No.	Name of State/ District		Number of manufacturing establishments per 1000 of women population	Proportion of workers in primary sectors	Proportion of workers in household industry	Proportion of workers in non-household industry	Proportion of workers in trade & commerce	Proportion of workers in transport & communication	Proportion of workers in other services
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Andhra Pradesh		x_1	x_2	x_3	x_4	x_5	x_6	x_7
1.	Srikakulam	1	22.07	57.03	06.94	04.11	12.97	00.61	17.66
2.	Vishakapatnam	2	10.94	27.73	03.80	03.67	18.80	02.90	37.40
3.	East Godavari	3	17.79	31.95	05.57	03.67	13.78	01.53	31.28
4.	West Godavari	4	19.80	47.74	08.54	09.03	07.67	00.97	24.06
5.	Krishna	5	16.89	30.54	09.75	08.70	12.44	02.79	30.53
6.	Guntur	6	22.05	23.86	07.30	39.95	08.13	00.60	18.19
7.	Ongole	7	34.91	34.91	16.30	21.61	07.74	00.40	16.35
8.	Nellore	8	28.53	38.14	09.36	08.93	14.67	00.41	26.95
9.	Chittor	9	25.18	39.15	10.63	03.74	14.56	00.66	26.58
10.	Cudappah	10	29.09	38.95	20.52	07.35	09.23	00.20	21.32
11.	Anantpur	11	25.32	39.26	14.40	11.04	10.00	01.48	19.64
12.	Kurnool	12	23.62	42.60	17.77	11.73	08.06	00.30	15.28
13.	Mahboobnagar	13	31.78	55.95	17.35	03.41	06.56	01.45	12.52
14.	Hyderabad	14	11.02	11.45	04.67	09.37	12.24	06.10	50.53
15.	Medak	15	24.62	58.71	00.67	09.37	12.24	06.10	15.16
16.	Mezamabad	16	53.08	37.97	10.91	24.23	04.26	01.52	11.05
17.	Adilabad	17	12.44	31.24	08.22	19.92	07.17	02.86	20.08
18.	Karimnagar	18	21.12	37.95	18.68	21.22	04.01	01.57	11.50
19.	Varangal	19	12.41	27.00	13.93	21.44	07.53	08.14	18.83
20.	Khammam	20	11.43	22.21	02.61	04.90	15.99	01.86	34.93
21.	Nal Gonda	21	11.45	40.95	02.47	03.50	12.04	00.64	24.46
	Karnataka								
1.	Bangalore	1	19.09	06.52	06.04	19.94	09.27	10.29	43.20
2.	Belgaum	2	32.02	36.08	17.40	14.17	07.24	02.78	19.41
3.	Bellary	3	15.21	61.55	06.24	05.11	04.86	05.39	13.35

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(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
4.	Bidar	4	19.09	06.52	35.49	06.40	04.40	16.59	17.29
5.	Bijapur	5	42.74	33.57	33.42	11.51	06.07	02.79	10.89
6.	Chickmagalur	6	18.89	23.23	06.90	11.70	08.14	10.75	29.13
7.	Chitradurga	7	24.54	25.20	11.07	21.33	10.54	07.48	18.10
8.	Coorg	8	22.68	46.52	00.67	04-05	04.75	03.04	30.06
9.	Dhawar	9	25.66	47.89	10.50	12.13	07.45	10.09	15.74
10.	Gulbarga	10	20.19	30.44	24.33	09.67	06.08	08.66	15.02
11.	Hassan	11	19.43	21.41	06.32	11.17	10.35	03.39	37.92
12.	Kolar	12	16.90	30.23	05.54	12.59	09.56	08.00	30.70
13.	Mendya	13	19.26	43.74	03.40	05.07	09.90	06.33	23.70
14.	Mysore	14	21.25	15.45	08.52	16.25	10.09	10.33	30.56
15.	North Kaveri	15	20.53	21.78	01.34	15.05	11.21	10.97	31.07
16.	Raichur	16	13.20	55.10	04.50	05.19	07.60	10.56	11.58
17.	Shimoga	17	16.03	29.89	05.62	10.60	10.91	10.56	23.87
18.	South Kanara	18	29.14	19.40	24.57	23.36	08.04	02.32	20.42
19.	Tunkur	19	34.52	17.14	24.70	10.29	11.12	09.86	23.02
<u>Kerala</u>									
1.	Cannanore	1	21.32	35.56	11.29	11.75	08.55	02.29	29.93
2.	Kozhikode	2	14.70	12.18	09.24	22.53	03.38	02.36	49.92
3.	Malappuram	3	14.87	29.91	06.98	18.02	01.03	01.01	40.99
4.	Palghat	4	21.47	49.22	06.06	04.55	02.03	01.50	34.78
5.	Tnehir	5	21.97	27.19	04.38	13.68	03.64	02.19	47.21
6.	Ernakulam	6	17.52	08.49	04.34	15.70	07.11	03.63	58.20
7.	Kottayam	7	20.13	21.68	05.61	04.72	05.32	01.63	50.48
8.	Alleppy	8	18.89	27.10	14.65	15.53	03-39	01.15	37.44
9.	Quilon	9	19.19	01.95	04.25	54.96	03.31	00.81	34.47
10.	Trivandrum	10	14.85	10.87	05.70	09.59	10.23	03.12	59.55

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Tamil Nadu								
1.	Madras 1	12.23	00.71	02.69	09.14	14.17	08.49	60.71
2.	Chengalpettu 2	22.38	27.16	09.03	16.25	09.05	05.45	30.40
3.	North Arcot 3	30.10	23.71	15.24	14.32	09.81	05.28	29.18
4.	South Arcot 4	14.99	44.23	02.87	04.14	10.76	03.02	31.98
5.	Dharampur 5	19.67	29.17	04.46	05.29	22.54	05.15	29.76
6.	Salem 6	27.54	24.05	30.53	14.12	09.52	04.22	13.92
7.	Coimbatore 7	25.29	40.91	04.72	17.26	08.54	01.61	21.93
8.	Nilgiri 8	08.15	73.39	00.12	02.78	02.05	00.69	18.77
9.	Madurai 9	21.59	36.93	08.47	14.78	09.87	00.75	26.85
10.	Tiruchenappalli 10	21.56	31.05	07.13	11.12	10.48	05.24	30.85
11.	Thaya 11	21.57	31.55	09.18	05.87	12.84	01.22	38.80
12.	Ramanathpuram 12	47.20	21.49	32.56	21.60	05.50	00.24	17.18
13.	Tirunelveli 13	36.84	27.15	33.56	15.93	03.85	01.70	16.61
14.	Kanyakumari 14	29.97	07.32	22.23	20.22	05.90	01.59	42.39

Table 19: Demographic Indicators in Urban Areas

Sl. No.	Name of State/ Districts		Sex-Ratio	Child-Women Ratio	Proportion of Urban Population
(1)	(2)		(3)	(4)	(5)
Andhra Pradesh			x_{10}	x_{11}	x_{12}
1.	Srikakula	1	1077	00.54	10.65
2.	Vishakapatnam	2	0958	00.55	22.89
3.	East Godavari	3	0993	00.50	19.23
4.	West Godavari	4	0994	00.51	17.71
5.	Krishna	5	0951	00.52	27.25
6.	Guntur	6	0975	00.52	24.98
7.	Ongole	7	0969	00.50	11.07
8.	Nellore	8	0966	00.46	13.77
9.	Chittor	9	0934	00.52	13.45
10.	Cudappah	10	0944	00.52	14.18
11.	Anantpur	11	0938	00.55	17.77
12.	Kurnool	12	0953	00.62	20.30
13.	Mahboobnagar	13	0941	00.66	08.97
14.	Hyderabad	14	0917	00.58	65.88
15.	Medak	15	0963	00.69	08.51
16.	Nizamabad	16	0932	00.63	15.94
17.	Adilabad	17	0923	00.67	15.92
18.	Karimnagar	18	0942	00.63	10.72
19.	Warangal	19	0934	00.58	13.43
20.	Khamman	20	0928	00.59	13.59
21.	Nalgonda	21	0913	00.64	06.69
Karnataka					
1.	Bangalore	1	0880	00.55	55.44
2.	Belgaum	2	0915	00.58	20.54
3.	Bellary	3	0932	00.57	27.14
4.	Bidar	4	0922	00.74	14.46
5.	Bijapur	5	0934	00.61	21.21
6.	Chickmagalur	6	0919	00.59	15.62
7.	Coorg	7	0881	00.63	20.25
8.	Chitradurga	8	0881	00.63	15.62

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(1)	(2)	(3)	(4)	(5)
		x_{10}	x_{11}	x_{12}
9.	Dharwar	9	0909	00.51	31.51
10.	Gulbarga	10	0940	00.65	17.78
11.	Hassan	11	0915	00.58	13.54
12.	Kolar	12	0936	00.59	20.65
13.	Mandya	13	0914	00.62	13.76
14.	Mysore	14	0917	00.52	25.47
15.	North Kanara	15	0959	00.58	17.72
16.	Raichur	16	0940	00.61	15.36
17.	Shimoga	17	0899	00.65	23.61
18.	South Kanara	18	1015	00.50	20.27
19.	Tumkur	19	0900	00.57	11.71
Kerala					
1.	Cannanore	1	1008	00.50	13.74
2.	Kozhikode	2	0995	00.54	26.66
3.	Malappuram	3	1031	00.61	06.73
4.	Palghat	4	1021	00.48	12.70
5.	Trichur	5	1067	00.50	11.74
6.	Ernakulam	6	0955	00.52	27.56
7.	Kottayam	7	0977	00.46	10.22
8.	Alleppy	8	1020	00.48	16.92
9.	Quilon	9	0988	00.52	07.87
10.	Trivandrum	10	0996	00.48	26.01

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(1)	(2)	(3)	(4)	(5)	
Tamil Nadu			x_{10}	x_{11}	x_{12}
1.	Madras	1	0904	00.48	100.01
2.	Chengalpettu	2	0916	00.55	34.76
3.	North Arcot	3	0959	00.53	20.85
4.	South Arcot	4	0954	00.58	14.18
5.	Dharampur	5	0954	00.60	08.57
6.	Salem	6	0953	00.51	26.58
7.	Coimbatore	7	0926	00.48	35.59
8.	Nilgiri	8	927	00.54	49.24
9.	Madurai	9	964	00.54	33.62
10.	Tiruchirappalli	10	962	00.49	22.27
11.	Thanjavoor	11	993	00.51	20.52
12.	Ramanathpuram	12	1011	00.54	25.11
13.	Tirunelveli	13	1023	00.50	32.17
14.	Kanyakumari	14	0990	00.51	16.72

Table 20: Socio-Cultural Variables in Urban Areas

Sl. No.	Name of State/ District	Proportion of female heads of households	Proportion of literate females	Proportion of SC females	Proportion of ST females	Proportion of married among females	Proportion of widowed/ divorced/ separated female	Proportion of Christian females	Proportion of Hindu females	Proportion of Muslim females
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Andhra Pradesh										
1.	Srikakulam	17.17	27.37	08.01	00.56	40.70	14.47	01.88	96.77	01.32
2.	Vishakapatnam	14.08	35.91	08.67	00.22	42.28	12.97	02.94	93.52	03.36
3.	East Godavari	15.09	39.37	09.50	00.38	42.87	13.08	03.63	92.02	04.17
4.	West Godavari	13.26	42.57	07.17	00.76	43.95	12.32	05.66	88.18	06.02
5.	Krishna	10.11	43.72	04.88	01.07	43.70	10.86	07.33	82.13	10.33
6.	Guntur	12.78	35.96	03.47	02.83	43.95	12.11	10.97	72.64	16.24
7.	Ongole	14.91	32.25	03.96	03.15	44.21	13.49	08.98	76.14	14.88
8.	Nellore	14.25	41.28	07.46	06.67	43.19	13.63	05.45	78.22	16.12
9.	Chittor	11.03	37.85	06.70	01.49	41.81	12.05	02.72	82.99	14.26
10.	Cudappah	12.12	31.84	04.57	00.71	43.27	12.34	04.81	62.14	32.98
11.	Anantpur	12.65	33.38	06.90	00.79	41.60	10.69	02.99	68.82	28.05
12.	Kurnool	13.82	28.11	08.82	01.12	42.05	11.16	06.52	61.40	31.82
13.	Mahboobnagar	13.39	27.34	07.85	00.06	43.95	10.75	01.93	68.92	29.12
14.	Hyderabad	09.64	42.49	10.47	00.19	41.75	09.39	03.20	60.28	35.84
15.	Medak	13.78	28.01	08.66	00.01	44.62	11.04	02.90	70.02	26.92
16.	Nizamabad	09.30	24.92	08.63	00.04	45.92	11.02	01.86	62.19	30.42
17.	Adilabad	06.43	21.26	14.71	00.94	45.92	09.32	01.97	73.19	24.33
18.	Karimnagar	11.53	23.64	11.12	00.30	47.41	10.39	01.58	78.46	19.65
19.	Warangal	08.70	30.76	09.80	00.14	45.55	09.45	04.09	72.29	18.34
20.	Khammam	08.40	31.80	12.65	02.13	49.19	09.22	05.87	79.12	14.90
21.	Nalgonda	08.62	33.56	10.54	00.02	44.70	10.04	02.54	75.61	21.24
Karnataka										
1.	Bangalore	07.96	49.27	10.56	00.22	41.44	07.32	06.98	76.24	15.88
2.	Belgaum	12.63	39.93	06.75	01.04	40.69	10.29	02.08	74.91	19.03
3.	Bellary	16.11	28.26	09.66	00.77	42.90	10.24	02.02	71.20	25.81
4.	Bidar	06.42	26.49	08.51	00.20	45.03	08.36	03.81	50.78	42.22

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
5.	Bijapur	14.33	30.04	06.69	00.22	42.47	11.52	00.26	72.72	25.30
6.	Chickmagalur	08.88	44.92	08.64	00.29	36.78	09.10	03.45	76.77	19.03
7.	Chitradurga	10.10	40.76	09.97	00.07	39.23	08.41	00.92	75.11	22.96
8.	Coorg	10.99	51.33	08.17	00.48	36.19	08.79	06.56	74.39	18.94
9.	Dharwar	13.44	38.04	05.75	00.27	39.33	10.93	02.91	71.46	24.54
10.	Gulbarga	11.24	26.71	09.08	00.21	43.34	09.99	01.02	57.51	40.67
11.	Hassan	10.81	45.93	09.32	00.04	38.25	08.81	02.84	74.76	20.65
12.	Kolar	11.86	42.83	22.95	00.35	38.24	08.90	09.53	67.11	22.58
13.	Mandya	12.14	32.83	11.53	00.58	40.66	09.49	01.94	81.11	16.09
14.	Mysore	13.42	43.80	10.81	01.59	39.80	09.44	03.08	78.67	17.66
15.	North Kanara	17.69	48.29	03.76	00.37	36.51	10.48	07.59	69.85	22.30
16.	Raichur	15.16	22.84	10.12	00.18	43.86	11.03	01.15	66.88	31.05
17.	Shimoga	09.15	44.32	07.66	00.17	38.64	07.91	04.11	76.95	18.44
18.	South Kanara	21.35	54.46	03.60	00.95	24.28	11.75	15.52	72.09	11.99
19.	Tumkur	09.44	44.77	08.62	00.04	38.99	08.45	01.31	74.02	23.74
<u>Kerala</u>										
1.	Cannanore	31.00	52.42	01.34	02.13	35.64	13.93	04.05	61.56	34.38
2.	Kozhikode	19.99	56.03	03.24	00.36	35.65	12.52	03.06	62.04	33.98
3.	Malappuram	27.90	46.07	04.48	00.21	37.68	13.09	00.97	31.79	68.24
4.	Palghat	21.08	53.44	07.73	00.44	37.06	12.59	03.30	75.82	20.86
5.	Trichur	19.15	66.10	05.45	00.13	34.51	10.36	38.00	49.33	11.66
6.	Ernakulam	12.39	64.28	04.68	00.02	35.13	10.24	38.09	45.13	16.53
7.	Kottayam	10.60	71.04	03.19	00.04	34.90	09.11	42.57	47.29	10.11
8.	Alleppy	16.45	65.14	04.75	00.01	34.27	11.77	22.94	60.25	16.75
9.	Quilon	13.56	62.39	07.34	-	34.39	09.71	23.80	58.30	17.80
10.	Trivandrum	19.84	61.88	07.50	00.02	35.72	10.14	14.66	73.67	11.65

...3/...

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Tamil Nadu										
1.	Madras	08.11	52.54	10.67	00.04	42.10	09.91	06.69	84.62	07.99
2.	Chengalpettu	09.85	43.57	15.43	00.39	42.48	10.08	06.15	88.67	04.74
3.	North Arcot	13.69	41.49	12.63	00.17	40.14	11.77	04.25	73.33	22.09
4.	South Arcot	10.10	43.03	11.57	00.03	41.05	10.37	04.57	86.09	08.99
5.	Dharampur	14.04	39.33	07.75	00.43	40.68	10.63	02.08	79.26	18.45
6.	Salem	11.51	37.23	09.51	00.04	43.08	09.73	02.04	92.71	05.20
7.	Coimbatore	10.80	41.29	12.62	00.06	42.27	09.66	05.74	86.76	07.39
8.	Nilgiri	10.43	42.17	19.78	02.54	39.10	07.69	18.63	66.52	10.99
9.	Madurai	10.90	45.96	06.75	00.08	40.51	10.16	06.87	84.75	08.34
10.	Tiruchirappalli	13.81	49.30	08.47	00.01	40.82	11.54	08.88	79.27	11.77
11.	Tanjavoor	14.46	43.85	07.05	00.04	40.43	11.87	04.92	82.91	11.99
12.	Ramanathapuram	17.07	43.33	07.05	00.07	40.60	11.57	04.12	83.48	12.40
13.	Tirunelveli	15.95	43.90	09.44	00.07	47.12	11.45	12.65	72.83	14.50
14.	Kanyakumari	13.25	60.56	03.26	00.03	37.90	09.79	20.15	62.03	09.78