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**BUREAU OF ECONOMICS & STATISTICS  
KERALA STATE**

*Population Studies No. 116*

**A STUDY OF THE PECULIARITIES  
IN THE WORKER-PARTICIPATION RATE  
IN KERALA**

**OCTOBER, 1971**

**POPULATION DIVISION  
DEMOGRAPHIC RESEARCH CENTRE**





POPULATION STUDIES No.11A Study of the peculiarities in the  
participation rate in Kerala.P R E F A C E.

The socio-economic variables like the size and composition of work force, the proportion of adult population actively engaged in economically gainful pursuits etc. are of fundamental importance for any Community or Nation as a great deal can be inferred about the social well-being of the Community or Nation from these basic facts. In the present report the peculiarities of the worker participation in Kerala State in relation to the other States and between the regions within the State are studied using the cross-tabulated data of workers by age and industry made available through the publications of the 1961 population Census. It is hoped that the material presented in the report will be interesting and instructive.

Sri N.V. George, Research Officer prepared this report. Sri P.S.G. Nair, Assistant Director and Sri S.B. Iyer, Deputy Director were also associated in the work especially in the editing and finalisation of the report.

Bureau of Economics and  
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N. GOPALAKRISHNAN NAIR  
Additional Director.

Dated 11-10--1971.

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A Study of the Economic Situation in the Worker -  
Industrial Areas of Canada

REPORT

The socio-economic conditions like the rate and position  
of work force, the provision of adult education with its emphasis  
in some specially trained persons etc. are of fundamental im-  
portance for the Community as a whole and on the in-  
terest about the social well-being of the Community of Canada  
from these basic facts. In the present report the author has  
of the worker participation in Canada States in relation to  
other States and between the regions within the State and studied  
using the cross-tabulated data of workers by age and industry  
made available through the publication of the 1951 population  
Canada. It is hoped that the material presented in the report  
will be interesting and informative.

Dr. W. J. Bourke, Research Officer prepared this report.  
Dr. F. J. M. Smith, Research Director and Dr. E. A. M. ...  
A report was also prepared in the work ...  
adding and finalization of the report.

M. GOPALAKRISHNAN IAS  
Additional Director

Director of Economic and  
Statistics, Government of India

Date: 11-10-1951

OFFICIAL



A STUDY OF THE PECULIARITIES IN THE WORKER PARTICIPATION  
RATE IN KERALA.

....

1. Introduction.

The object of this paper is to study the peculiarities in the worker participation rate in the State and in its districts. The 1961 set up of Districts and States are considered here. The study is based on the information available from the 1961 population census data. The various concepts followed in this paper also conform to those adopted in the 1961 census.

Kerala State possesses certain unique demographic characteristics which distinguish it from other States in India. The State has the highest density among the States. The birth rate in the State is the lowest in India except for Madras. But due to the very low death rate, the growth rate is comparatively high inspite of considerable out-migration. The peculiarities are not confined to the growth pattern. The characteristics of the population of the state are also different from those of other States. Kerala has the highest literacy rate. As per the 1961 census Kerala and Orissa are the only two states in India where females outnumber males. In Orissa, the excess is only 1 per 1000 males. In Kerala there are 1022 females per 1000 males according to the 1961 census figures. In the worker participation rates also considerable differences are noted in the State when compared with the other States.

2. Concepts and definitions.

(i) Workers and non-workers.: The definition for the 1961 census was as follows:-

In the case of seasonal work like cultivation, livestock, dairying, household industry, etc. if a person had some regular work of more than one hour a day throughout the working season he was to be regarded as "worker".

In the case of regular employment in any trade, profession, service, business or commerce the basis for work would be satisfied if the person was employed during any of the 15 days preceding the day on which he was enumerated.

A person who was working but absent from his work during the 15 days preceding the day of enumeration due to illness or other causes was treated as a worker.

A person who was offered work but had not actually joined it, was treated as a "non-worker".

A person under training as apprentice with or without stipend or wages was regarded as a "worker".

A public or social service worker who was actively engaged in furthering political activity of his party was also regarded as a "worker".

For persons engaged in two or more kinds of work, the principal work was determined on the basis of time spent on each occupation.

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1. Introduction

The object of this paper is to study the population in the worker participation state in Kerala and in the districts. The 1961 and 1971 censuses are considered here. The study is based on the information available from the 1961 population census data. The various chapters in this paper also conform to those adopted in the 1961 census.

Kerala State possesses certain unique demographic characteristics which distinguish it from other States in India. The State has the highest fertility among the States. The birth rate in the State is the lowest in India except for Andhra. But due to the very low death rate, the growth rate is comparatively high. In spite of considerable out-migration, the population is not confined to the growth pattern. The characteristics of the population of the State are also different from those of other States. Kerala has the highest literacy rate. As per the 1961 census Kerala and Orissa are the only two States in India where female outnumber males. In Orissa, the excess is only 1 per 1000 males. In Kerala there are 102 females per 1000 males according to the 1961 census figures. In the worker participation states also considerable differences are noted in the State when compared with the other States.

2. Concepts and definitions

(1) Workers and non-workers: The definition of the 1961 census was as follows:-

In the case of seasonal work like cultivation, livestock raising, household industry, etc., if a person had some regular work of more than one hour a day throughout the year, he was to be regarded as "worker".

In the case of regular employment in any grade, profession, service, business or commerce the basis for work was either full or part-time work during any of the 12 months preceding the date when he was enumerated.

A person who was working but absent from his work during the 12 days preceding the day of enumeration due to illness or other causes was treated as a worker.

A person who was offered work but had not actually joined it, was treated as a "non-worker".

A person under training a apprenticeship with or without stipend or wages was regarded as a "worker".

A public or social service worker who was actively engaged in furthering political activity of his party was also regarded as a "worker".

For persons engaged in two or more kinds of work, the principal work was determined on the basis of their principal occupation.



(ii) Economic classification of the population:

In the 1961 census the whole population was divided into "workers" and "non-workers" unlike in 1951 census. In the census of 1951, the population was classified as self-supporting, earning dependent and non-earning dependent. It was felt that in the classification followed in the 1951 census based on income, persons who worked in family enterprises without wages in cash or kind but who shared the profits were likely to be omitted. Hence a classification of the population into "workers" and "non-workers" was adopted in the 1961 census.

(iii) Industrial classification of the "workers".

The 'workers' were classified under the following nine industrial categories:-

- (1) Cultivators
- (2) Agricultural labourers
- (3) In mining, quarrying, livestock, forestry, fishing, hunting and plantations, orchards and allied activities.
- (4) In household industry
- (5) In manufacturing other than household industry
- (6) In construction
- (7) In trade and commerce
- (8) In transport, storage and communications
- (9) In other services.

(iv). Worker participation rate:

The rate is worked out as the number of workers per 1000 population.

(v) Age-specific participation rate:

In each age group also the worker population rate is worked out. It is number of workers in an age-group, per 1000 persons in that age group.

3. Participation rates in the different States.

Table I below gives the worker participation rates for the different States for each sex separately.

Table - 1.

Worker participation rates for the various States.

STATE	Male	Female
1	2	3
India	571	280
Andhra Pradesh	622	413
Assam	541	309
Bihar	556	271
Gujarat	535	279







1	2	3
Jammu & Kashmir	578	256
Kerala	472	197
Madhya Pradesh	602	440
Madras	597	313
Maharashtra	571	381
Mysore	584	320
Orissa	608	266
Punjab	529	142
Rajasthan	581	359
Uttar Pradesh	582	182
West Bengal	540	94

The participation rate for males varies between 472 and 622. The participation rate for males is the least in Kerala and the highest in Andhra Pradesh. In 11 out of 15 States the rate varies between 540 and 608. The two other States (excluding Kerala and Andhra Pradesh) which are outside the range are Gujarat (535) and Punjab (529). Excluding Kerala, the range of variation is only 93. The rates are above 600 in the three States of Madhya Pradesh, Orissa and Andhra Pradesh.

The participation rates for females are comparatively very low in all States. The rates vary from 94 in West Bengal to 440 in Madhya Pradesh. In Madhya Pradesh the male participation rate is also comparatively high (602). Kerala which has the lowest rate for males, has a rate of (197) for females which is higher than the rates observed in Uttar Pradesh, West Bengal and Punjab.

#### 4. Participation rates in different countries of the world.

A comparison of the percentage of the economically active population in various countries with the participation rates in India will be interesting. The concepts used is however slightly different. The U.N. Demographic Year Book 1963 gives the percentage of economically active population by sex. The economically active population includes the following categories:-

1. Civilian employers, employees, own account workers and unpaid family workers
2. Armed forces
3. Employed and unemployed persons including those seeking work for the first time.
4. Persons engaged in part-time economic activities
5. Domestic servants.

The percentage of economically active population for some of the countries are given in Table II below:-



1	2	3
West Bengal	540	509
Uttar Pradesh	582	494
Rajasthan	582	494
Punjab	581	493
Orissa	589	492
Mysore	508	492
Madhya Pradesh	577	491
Kerala	602	490
Assam & West Bengal	578	489

The participation rate for males varies between 475 and 622. The participation rate for males is the least in Kerala and the highest in Andhra Pradesh. In four of 15 States the rate varies between 540 and 602. The two other States (excluding Kerala and Andhra Pradesh) which are outside the range are Gujarat (532) and Punjab (529). Excluding Kerala, the range of variation is only 92. The rates are above 600 in the three States of Madhya Pradesh, Orissa and Andhra Pradesh.

The participation rates for females are comparatively very low in all States. The rates vary from 94 in West Bengal to 440 in Madhya Pradesh. In Madhya Pradesh the male participation rate is also comparatively high (602). Kerala which has the lowest rate for males, has a rate of (197) for females which is higher than the rates observed in Uttar Pradesh, West Bengal and Punjab.

4. Participation rates in different countries of the world.

A comparison of the percentage of the economically active population in various countries with the participation rates in India is indicated in the following table. The countries are arranged in descending order of their percentage of economically active population by sex. The economically active population includes the following categories:

1. Civilian employers, employees, own account workers and unpaid family workers
2. Armed forces
3. Employed and unemployed persons including those seeking work for the first time.
4. Persons engaged in part-time economic activities
5. Domestic servants.

The percentages of economically active population for some of the countries are given in Table II below:-



Table II.  
Percentage of economically active population by sex.

COUNTRY	Reference date	Percentage of economically active population.	
		Male	Female
Canada	1-4-1960	51.3	19.7
U.S.A.	1-4-1960	53.8	24.6
Israel	22-5-1961	50.2	18.3
France	7-3-1962	64.0	33.2
Japan	1-10-1960	58.5	36.2
Germany	6-6-1961	65.9	33.2
Norway	1-11-1960	60.6	17.8
Poland	6-12-'60	54.7	40.6
Switzerland	1-11-1960	65.9	27.4
U.S.S.R.	15-1-1959	54.8	41.5
U.A.R.	20-9-'60	54.8	4.8

Source: U.N. Demographic Year Book 1963.

It is to be noted that these percentages include unemployed persons seeking work for the 1st time, which is not included in the worker participation rates mentioned earlier in Table I.

The percentages of economically active males are above 50 in all the countries considered. In the States in India also it is above 50% except in Kerala where the percentage is only 47. In the case of females, the range of variation is wider. It is as low as 4.8% in U.A.R. and more than 40% in Poland and U.S.S.R. Among the States in India also the women participation rates vary widely from 9.4% in West Bengal to 44.0% in Madhya Pradesh.

#### 5. Participation rates as estimated from the National Sample Survey.

The National Sample Survey conducted by Government of India collects information on gainfully employed in all its yearly rounds of the survey. The census definition and N.S.S. definition of "workers" differ slightly. The difference is mainly due to the reference period adopted and relating to seasonal workers. The reference period is 15 days in the case of the 1961 census, while it is taken as one week in the N.S.S. In the census a seasonal worker will be treated as worker if he had some regular work of more than one hour a day throughout the working season only. In the N.S.S. on the other hand, work during the reference period of one week is insisted on in the case of seasonal workers also. The results obtained from the 16th round of the N.S.S. conducted in 1960-61 are presented below. The participation rate for males compare well with the census results.

		No. of gainfully employed per 1000	
		<u>Male.</u>	<u>Female.</u>
Rural	..	483	143
Urban	..	419	158
T o t a l.	..	475	145







6. Correlation of participation rates with other factors.

The higher male participation rates are associated with higher participation rates in cultivation and agricultural labour. Correlation co-efficients have been worked out between:

- a) total participation rates of males and worker participation rate in cultivation for various States
- b) total participation rates of males and worker participation rate in cultivation and agricultural labour.

The figures are given in Table III below:-

Table III.

Participation rates of males in cultivation and agricultural labour in the various States.

STATES.	Total male workers.	Male workers in cultivation.	Male workers in cultivation and agri. labour.
(Per 1000 males).			
Andhra Pradesh	622	256	391
Assam	541	346	371
Bihar	556	297	408
Gujarat	535	265	329
Jammu & Kashmir	578	421	430
Kerala	472	108	170
Madhya Pradesh	602	358	439
Madras	597	250	335
Maharashtra	571	232	335
Mysore	584	312	386
Orissa	608	363	455
Punjab	529	274	318
Rajasthan	581	398	420
Uttar Pradesh	532	370	423
West Bengal	540	209	287
r =		0.60	0.82

The correlation co-efficient between total work participation rate and worker participation rate in cultivation is found to be 0.60. The correlation co-efficient between total work participation rate and the participation rate in cultivation and agricultural labour taken together works out to 0.82. This indicates that the total work participation rate and worker participation rate in agriculture are highly correlated.

In the States where employment opportunities in agriculture are scarce, the total worker participation rate is also low. This is corroborated by the high negative correlation between male worker participation rate in agriculture and the density of population i.e. the density for geographical area. In fact, the density of population per net area sown would be a more precise index of measuring employment opportunity in agriculture. Due to non-availability of this data for all







the States the density per geographical area is taken to work out the correlation. The correlation co-efficient in this case works out to 0.74. In other words the availability of land and participation rate are highly correlated. The high total participation rate is associated with high participation rate in agriculture which in turn is associated with availability of opportunities in the agricultural sector.

### 7. Participation rates in the Districts of Kerala.

The variation in the participation rates among the Districts of the State is small. For males the rates vary from 455 in Trichur District to 515 in Palghat District. For females the rates vary from 144 in Kozhikode District to 271 in Palghat District. Table IV below gives the participation rates for the different districts.

Table IV.  
Worker participation rates for the Districts in Kerala State.

DISTRICT	Male	Female
Trivandrum	461	160
Quilon	458	192
Alleppey	456	221
Kottayam	484	162
Ernakulam	470	193
Trichur	455	219
Palghat	515	271
Kozhikode	471	144
Cannanore	481	231

In the case of the various States there is high correlation between total work participation rate and rates in cultivation and agricultural labour. But when the corresponding correlation co-efficients are worked out for Kerala using the figures for the various districts, they are very low. The correlation co-efficient between total male work participation rate and worker rate in cultivation is 0.01. The correlation co-efficient between total male workers and those in cultivation and agricultural labour 0.33. This indicates that in the Districts of Kerala, the total worker participation rate is very little affected by the rates in cultivation and agricultural labour in the State.

The high negative correlation between worker participation rate in agriculture and per capita availability of land noticed in the case of the various States is also not seen in the case of Kerala. When the corresponding correlation co-efficient is worked out using the figures for the Districts, there is negative correlation between worker participation rate in cultivation and density per square kilometre, the correlation co-efficient being 0.16. Thus the per capita availability of land and worker participation rate in cultivation in Kerala are not so highly correlated as for the other States in the country.







The above two differences for Kerala State namely (i) the absence of a high positive correlation between the total worker participation rate and the rate of participation in cultivation and agricultural labour; and (ii) the absence of a high negative correlation between the worker participation rate in agriculture and the per capita availability of land can be explained by the low availability of land and consequent lack of opportunities for employment in the agricultural sector.

#### 8. Age specific participation rates in Kerala and other States.

The age specific participation rates are worked out as the number of workers in each age group per 1000 persons in the age group ~~per 1000 persons in the age group~~. The broad age groups of 0-14 years, 15-34 years, 35-59 years and 60 years and above are considered here. Rates are worked out separately for males and females. Table IV gives the rates for the various States.

Table IV.  
Worker participation rate for the different States in India  
by broad age-groups and sex.

STATE	Male					Female				
	0-14	15-34	35-59	60+	All ages.	0-14	15-34	35-59	60+	All ages.
All India	94	881	967	766	571	66	436	476	224	280
Andhra Pradesh	157	921	973	778	622	112	635	663	311	413
Assam	78	858	960	749	541	64	558	548	215	309
Bihar	96	876	974	823	556	59	414	483	231	271
Gujarat	73	869	963	663	535	66	464	464	171	279
Jammu and Kashmir	96	883	953	738	578	63	426	397	178	256
Kerala	22	765	944	656	472	19	326	373	148	197
Madhya Pradesh	113	931	977	805	602	108	686	725	360	440
Madras	93	885	966	734	597	67	457	514	258	313
Maharashtra	86	875	969	728	571	88	609	637	263	331
Mysore	119	901	970	764	584	82	508	559	247	320
Orissa	123	912	966	788	608	66	403	434	194	266
Punjab	79	850	955	709	529	38	234	246	105	142
Rajasthan	136	910	965	719	581	121	572	560	234	359
Uttar Pradesh	86	894	979	855	582	41	261	323	198	181
West Bengal	50	824	940	679	540	12	153	183	79	94

The worker participation is the lowest in the 0-14 years group both for males and females in all the States. Among the States the male participation rate in the 0-14 age group is the lowest in Kerala. Among the females the lowest participation rate in the 0-14 age group is reported in West Bengal. The lower participation rate of 0-14 years is associated with high rate of school enrolment.

The percentage of full time students among non-working population of 0-14 age-group, in Kerala is considerably higher than in India, in respect of both males and females as may be seen from the data given below:-







## Percentage of full time students among non-working population.

Age-group	Males		Females	
	Kerala	India	Kerala	India
0-14	44.0	28.2	38.2	13.4

In the next higher age-group of 15-34 also, the enrolment of students in colleges is higher in Kerala than India. According to the figures available for the year 1962-63 the number of students in colleges per lakh of population is 314 in Kerala as against 278 in India. Thus in both the age groups 0-14 and 15-34 the difference in the worker participation rate is mostly accounted for by the school and college enrolment of the students belonging to the age-groups. This is corroborated by the finding in the report on "Planning for Employment in Kerala" published by the Bureau of Economics and Statistics, Kerala, the relevant portion of which is reproduced below:-

The overall labour force participation rate in Kerala is only 32.0 %. The dependency load on a worker is thus very high. On an average one person works and learns to maintain himself and two others. The labour force participation rate in Kerala is much less than in India as a whole. In the absence of comparable data relating to 1965, the figures obtained from the census of India 1961 are used here to examine the reasons for the low participation rates in Kerala. The relevant figures are given in the table below:-

Classification of population by activity - Census 1961  
Percentage distribution.

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Sl. Activity No.	Kerala			India		
	Male	Female	Persons.	Male	Female	Persons.
1 Workers	47.2	19.7	33.3	56.8	27.8	42.8
2 Full time students	22.5	17.6	20.0	13.0	5.8	9.5
3 Engaged in Household duties	..	33.3	16.8	0.2	31.2	15.2
4 Dependents, infants and disabled	27.5	28.4	28.0	28.7	34.6	31.5
5 Others	2.8	1.0	1.9	1.3	0.6	1.0
T o t a l	100.0	100.0	100.0	100.0	100.0	100.0







"It is seen that 20.0% of the population of Kerala reported as students compared with only 9.5% in all India. The difference between all India and Kerala as regards the other categories not in the labour force are not very high. The percentage of workers in Kerala is only 33.3 as against 42.2 in the country as a whole. It may be seen that the bulk of the difference in the labour force participation rates between India and Kerala is accounted for by the higher proportion of students in Kerala".

The participation rate of males 0-14 years is above 100 in Andhra Pradesh, Madhya Pradesh, Mysore, Orissa and Rajasthan. Only in Kerala it is below 50. Most of the States have rates varying between 70 and 100.

It is seen that the participation rate for males below 15 years and total participation rate are highly correlated ( $r = 0.72$ ). The participation of children below 15 years is one of the reasons for high rates in some of the States.

The figures in table IV indicate a general trend that the States which have high male participation rates have also high female participation rates in the age group 0-14 years. The range of variation of female participation rates in 0-14 years is from 12 to 121. The highest rate of female participation in the 0-14 age group is reported from Rajasthan and the lowest rate from West Bengal. Kerala has the lowest male participation rate of 22 in 0-14 years of age. The States of Andhra Pradesh, Madhya Pradesh and Rajasthan have high female participation rates exceeding 100 in the age-group of 0-14.

In the case of males and females the rates of participation for the 15-34 age group are high. All the States except Kerala have rates above 820 for males. For females the rate is the lowest in West Bengal. In all the other States the rates are above 230. The range of variation of female participation rate in the age group is from 153 in West Bengal to 686 in Madhya Pradesh. Only four States, namely, Kerala, Punjab, Uttar Pradesh and West Bengal have female participation rates below 400.

The participation rates are found to be maximum in the age group of 35-39 in all the States both for males and females. A deviation from this observation is in respect of the female participation rates in the two States, namely Jammu and Kashmir and Rajasthan. For males, the participation rates in the age-group 35-39 are above 940 in all the States, the range being from 940 (West Bengal) to 979 (Uttar Pradesh). For females the range is wider varying from 183 in West Bengal to 725 in Madhya Pradesh.

In the older age-group 60 and above also there is a considerable percentage of workers. Among males the participation rate in this age group is above 650 in all the States. In all the States except Gujarat, Kerala and West Bengal the rates are above 700. In the case of females also the rates are not negligible. In most of the States it is above 170. Only in West Bengal the rate is below 100. Madhya Pradesh, which has the highest female participation rate, has the highest rate in this age group also.







Considering Kerala State alone the characteristics of the age specific participation rates are more or less the same in the various districts of the State. Table V below gives the rates for the different districts in the State.

Table V.  
Worker participation rate in the different districts of Kerala by age and sex.

DISTRICT	Male					Female				
	Age groups.					Age groups.				
	0-14	15-34	35-59	60+	All ages	0-14	15-34	35-59	60+	All ages
Trivandrum	20	732	953	694	461	21	249	321	170	160
Quilon	11	728	961	752	453	16	344	352	151	192
Alleppey	11	699	944	696	456	24	355	410	189	221
Kottayam	14	776	964	681	484	15	286	312	99	162
Ernakulam	16	758	947	612	470	18	325	371	125	193
Trichur	23	751	927	604	455	19	358	408	135	219
Palghat	53	844	943	643	515	32	434	487	182	271
Kozhikode	23	784	929	615	471	16	229	234	117	144
Cannanore	30	807	932	630	481	17	394	426	162	231

The variation in rates between the various Districts is small.

In 0-14 age group the rates vary between 11 and 53 for males and between 15 and 32 for females. The male rates are higher than the female rates in some of the Districts. The lower participation rate in 0-14 years may be probably associated with the high rate of school enrolment in the State. For males, the participation rate in 0-14 years and percentage of literates aged 5 years and above in the various districts are negatively correlated, the correlation coefficient being 0.93.

In the 15-34 age group the rates are high in all the districts. For males the rates vary between 699 and 844. For females the range of variation is much wider from 229 to 434. In both the age groups of 0-14 and 15-34 the highest rates of participation of males and females are in Palghat District, which has the lowest literacy rate in the State.

The participation rates among both the males and females touch the maximum level in the age group 35-39. This is so in the other States of India also. Between districts the range of variation in the rates is small in the case of males. The rates vary from 927 to 964 among males. Among females in the age group the variation of participation rates between the districts is more marked the rates varying from 284 to 487.







In the older age group of 60 and over also there is a considerable percentage of workers among males. The rates for males vary between 604 and 752 between the districts. The rates of participation of females in this group are much lower and the rates between the districts vary from 99 to 139.

An interesting fact revealed by the participation rates for the different age groups given in table V is that the rates of participation for all ages and that for the 0-14 age group are highly correlated giving a correlation coefficient of  $r = 0.84$ . This shows that the higher participation rate for all ages is associated with the higher rate of participation in the 0-14 age group.

9. Workers in various industrial divisions.

The distribution of the total work participation rates among the various industrial groups show wide variation between the States also. Table VI gives the distribution of workers in various industrial categories.

Table VI.

Distribution of 1000 persons in each sex among 9 Industrial categories and non-workers.

STATE	Sex.	Worker participation rates in									Non-workers.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1	2	3	4	5	6	7	8	9	10	11	12
India	M	294	77	18	32	32	8	39	13	67	429
	F	156	67	6	22	4	1	4	N	20	720
Andhra Pradesh	M	256	135	26	63	21	10	33	13	65	378
	F	159	162	5	37	5	3	12	N	30	587
Assam	M	346	25	46	4	14	6	28	12	60	459
	F	204	5	41	46	2	N	2	N	9	691
Bihar	M	297	111	23	26	17	4	19	10	49	444
	F	148	80	5	20	2	N	3	N	13	729
Gujarat	M	265	64	7	32	47	7	36	15	62	465
	F	170	57	3	21	4	2	3	N	19	721
Jammu and Kashmir	M	421	9	10	23	16	4	17	7	71	422
	F	213	1	4	32	1	N	N	1	4	744
Kerala	M	108	62	48	22	47	8	36	17	124	528
	F	32	54	10	35	16	N	3	1	46	803
Madhya Pradesh	M	358	84	23	32	18	9	21	9	48	398
	F	296	90	7	20	2	2	3	N	20	560
Madras	M	250	85	20	40	44	10	39	15	94	403
	F	133	83	6	31	6	2	6	N	46	687







1	2	3	4	5	6	7	8	9	10	11	12
Maharashtra	M	232	103	17	28	53	10	38	21	64	429
	F	209	135	9	14	6	2	6	1	16	639
Mysore	M	312	74	20	37	30	13	27	9	62	416
	F	178	76	8	22	5	3	6	N	22	680
Orissa	M	363	92	11	33	3	3	13	6	79	392
	F	133	57	4	28	2	N	4	N	38	734
Punjab	M	274	44	6	39	31	12	35	13	75	471
	F	107	6	1	13	2	1	N	N	12	858
Rajasthan	M	398	22	11	38	14	9	26	11	52	419
	F	297	17	5	21	2	1	2	N	14	641
Uttar Pradesh	M	370	53	4	34	20	5	26	10	60	418
	F	117	35	1	14	1	N	2	N	12	838
West Bengal	M	209	73	24	16	67	8	45	21	72	460
	F	35	20	9	11	5	N	2	N	12	906

\*(1) Cultivators. (2) Agricultural Labour (3) Mining, Quarrying livestock, etc. (4) Household industry (5) Manufacturing other than household industry (6) construction (7) Trade and Commerce (8) Transport, Storage and Communications (9) Other Services.

In all the States except Kerala, the largest percentage of workers are engaged in cultivation. In Kerala, the largest percentage of workers is reported from the 'other services' sector. As mentioned in the earlier section the participation rate in cultivation and availability of land are highly correlated. In the developing countries a high percentage of the workers will be usually in the primary sector. The tertiary sector occupies the second place and the secondary sector occupies only the third place. In the developed countries, the percentage in the primary sector will be quite low and the percentage in the tertiary sector will be high. Viewed from this perspective, the various states in India show the characteristics of the developing countries.

In order to get a clearer picture about this aspect the workers in the nine industrial categories in table VI are grouped into the three sectors, by combining the categories (1), (2) and (3) to form the primary sector, the categories, (4), (5) and (6) to form in the secondary sector and the categories (7), (8) and (9) to form in the tertiary sector. It may be noted that the industrial category (3) includes mining and quarrying which ought have been included in secondary sector. The percentage of workers in this category being small in most of the states, no attempt has been made to split the industrial category (3). The distribution of male and female workers in the three sectors is given below in table VII.



Year	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

(1) Cotton, (2) Tobacco, (3) Sugar, (4) Rice, (5) Wheat, (6) Corn, (7) Soybeans, (8) Apples, (9) Oranges, (10) Peaches, (11) Pears, (12) Grapes, (13) Citrus fruits, (14) Cattle, (15) Horses, (16) Sheep, (17) Poultry, (18) Swine, (19) Dairy products, (20) Lumber, (21) Coal, (22) Oil, (23) Iron, (24) Steel, (25) Textiles, (26) Paper, (27) Glass, (28) Rubber, (29) Chemicals, (30) Miscellaneous.

In all the states except Maine, the largest source of revenue is derived from the sale of liquor. In Maine, the largest source of revenue is derived from the sale of land. In the various states in which the liquor tax is levied, the revenue from this source is usually the largest. In the various states in which the land tax is levied, the revenue from this source is usually the largest. In the various states in which the tax on the sale of land is levied, the revenue from this source is usually the largest. In the various states in which the tax on the sale of land is levied, the revenue from this source is usually the largest.

In order to get a clearer picture about this subject the various states in which the liquor tax is levied, the revenue from this source is usually the largest. In the various states in which the land tax is levied, the revenue from this source is usually the largest. In the various states in which the tax on the sale of land is levied, the revenue from this source is usually the largest. In the various states in which the tax on the sale of land is levied, the revenue from this source is usually the largest.



Table VII.

Distribution of 1000 persons in each sex in the primary, secondary and tertiary sectors.

STATE	Number of workers per 1000 persons.					
	Primary		Secondary		Tertiary	
	M	F	M	F	M	F
All India	389	229	72	27	110	24
Andhra Pradesh	417	326	94	45	111	42
Assam	417	250	24	48	100	11
Bihar	431	233	47	22	78	16
Gujarat	336	230	86	27	113	22
Jammu and Kashmir	440	218	43	33	95	5
Kerala	218	96	77	51	177	50
Madhya Pradesh	465	393	59	24	78	23
Madras	355	222	94	39	148	52
Maharashtra	352	337	96	22	123	22
Mysore	406	262	80	30	98	28
Orissa	466	194	44	30	98	42
Punjab	324	114	82	16	123	12
Rajasthan	431	319	61	24	89	16
Uttar Pradesh	427	153	59	15	96	14
West Bengal	311	64	91	16	138	14

The participation rates ~~are~~ in the primary, tertiary and secondary sectors proceed in a descending order in all the States in the case of both males and females.

Considering only the male participation rate Orissa has the highest rate and Kerala the lowest rate in the primary sector. All States except Kerala have rates above 300 for males. In the case of tertiary sector, Kerala has the highest rate, while Bihar and Madhya Pradesh have the lowest rates. In the secondary sector Maharashtra tops the list with a rate of 96. Assam has the least rate in the secondary sector. The disparity in the rates for the various states is more pronounced in the case of secondary sector. Here, the least rate and the highest rate are 24 and 96 respectively; the highest rate being four times the lowest rate. In the primary and tertiary sectors the highest rate of male participation is only a little more than double the lowest rate.

The distribution of workers in the various industrial categories in the Districts of Kerala is given in Table VIII below:-







Table VIII.  
Distribution of 1000 persons in each sex among 9 industrial categories and non-workers.

DISTRICT	Sex	Workers in									Non-workers.
		(1)*	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Trivandrum	M	110	70	29	28	33	8	31	13	139	539
	F	24	21	2	43	15	N	9	1	45	840
Quilon	M	174	62	34	17	48	6	28	14	75	542
	F	32	27	6	40	63	N	2	N	22	808
Alleppey	M	103	68	37	24	49	7	39	19	110	544
	F	19	61	2	90	13	N	2	1	33	779
Kottayam	M	113	62	108	13	36	10	31	12	99	516
	F	16	36	55	17	3	N	2	N	33	838
Ernakulam	M	97	43	38	22	60	11	39	30	130	530
	F	40	50	4	30	14	N	3	1	51	807
Trichur	M	83	44	46	27	50	9	40	18	138	545
	F	30	56	6	37	13	N	2	2	73	781
Palghat	M	115	112	33	32	39	12	31	16	125	485
	F	46	132	5	22	6	1	2	N	57	729
Kozhikode	M	79	49	60	17	42	6	40	20	158	529
	F	19	38	N	23	9	N	1	1	53	856
Cannanore	M	105	54	39	27	66	7	40	13	130	519
	F	67	69	7	20	8	N	3	1	56	769

\* (1) Cultivators (2) Agricultural labour (3) Mining, quarrying, livestock, etc. (4) Household industry (5) Manufacturing other than household industry (6) Construction (7) Trade and Commerce (8) Transport, Storage and Communications (9) Other services.

The range of variation between districts in the distribution of workers in the various industrial categories is found to be very small. Among males the rate of participation as cultivators ranges between 79 in Kozhikode district and 174 in Quilon district. For agricultural labourers the range is from 43 in Ernakulam district to 112 in Palghat district. The industrial category mining, quarrying, livestock, etc. shows a wider range of variation of participation rate ranging from 29 in Trivandrum to 108 in Kottayam district.

When the participation rates in the nine industrial groups are combined into the three sectors namely, primary, secondary and tertiary, the position is as presented in table IX below:-



TABLE 1  
 Distribution of 2000 hours of work in various industrial categories  
 by sex and age group

Industrial Category	Sex	Age Group (Years)									
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64
Agriculture	M	100	120	150	180	200	220	240	260	280	300
	F	80	100	120	140	160	180	200	220	240	260
Manufacturing	M	120	150	180	200	220	240	260	280	300	320
	F	100	120	140	160	180	200	220	240	260	280
Retail Trade	M	80	100	120	140	160	180	200	220	240	260
	F	60	80	100	120	140	160	180	200	220	240
Transportation	M	150	180	200	220	240	260	280	300	320	340
	F	100	120	140	160	180	200	220	240	260	280
Education	M	120	140	160	180	200	220	240	260	280	300
	F	100	120	140	160	180	200	220	240	260	280
Health Services	M	80	100	120	140	160	180	200	220	240	260
	F	60	80	100	120	140	160	180	200	220	240
Government	M	100	120	140	160	180	200	220	240	260	280
	F	80	100	120	140	160	180	200	220	240	260

The figures in the table show the distribution of work hours among various industrial categories, broken down by sex and age group. The data indicates that men generally work longer hours than women, particularly in the manufacturing and transportation sectors. The distribution of work hours also varies significantly by age group, with younger workers (ages 15-24) typically working fewer hours than older workers (ages 45-64). The highest concentration of work hours is found in the manufacturing and transportation categories, while the lowest is found in the education and health services categories. The data also shows that the distribution of work hours is relatively stable across different age groups within each industrial category, suggesting that the nature of the work does not change significantly with age.



Table IX.

Distribution of 1000 persons in each sex in the primary, secondary and tertiary sectors of employment in Kerala State.

DISTRICT	No. of workers per 1000 persons					
	Primary		Secondary		Tertiary	
	M	F	M	F	M	F
Trivandrum	209	47	69	58	183	55
Quilon	270	65	71	103	117	24
Alleppey	203	82	80	103	68	36
Kottayam	283	107	59	20	142	35
Ernakulam	178	94	93	44	199	55
Trichur	173	92	86	50	196	77
Palghat	260	183	83	29	172	59
Kozhikode	188	57	65	32	218	55
Cannanore	198	143	100	28	183	60

The participation rates in the primary sector are found to be higher than that in the other two sectors in all districts except Trichur, Ernakulam and Kozhikode. In these three districts the highest participation rates are reported in the tertiary sector.

In the primary sector the ranges of variation in the male participation rate is from 173 in Trichur District to 283 in Kottayam District. In the secondary sector the rates vary between 59 in Kottayam district and 100 ~~highest~~ in Cannanore district. In the tertiary sector the lowest rate of 117 is in Quilon district and the highest rate of 218 is in Kozhikode district.

#### Conclusion.

The study of the variation in participation rate in the various states shows that total participation rate and the participation rate in cultivation and agricultural labour are highly correlated. In the Districts of the State such a relationship is not noticed.

The participation rates in 0-14 and 15-34 age-groups are the lowest in Kerala. This is an account of the higher proportion of School and college going students in these age groups in the State.

In all the States the highest participation rate is reported in the primary sector and the lowest rate in the secondary sector, which is a characteristic of developing countries.



Table IX.  
Distribution of 1000 persons in each sex in the  
primary, secondary and tertiary sectors of em-  
ployment in Kerala State.

% of workers per 1000 persons

District	Primary		Secondary		Tertiary
	M	F	M	F	
Tiruvananthapuram	209	47	69	128	53
Kollam	270	62	71	108	54
Alappuzha	203	32	30	78	38
Kottayam	223	107	39	122	38
Ernakulam	173	94	33	100	55
Thiruvananthapuram	173	92	38	100	55
Palakkad	250	183	33	173	59
Kozhikode	188	57	62	318	55
Changanassery	198	143	100	183	60

The participation rates in the primary sector are found to be higher than that in the other two sectors in all districts except Ernakulam, Tiruvananthapuram and Kozhikode. In these three districts the highest participation rates are reported in the tertiary sector.

The primary sector shows the highest rates of variation in the participation rate. It is from 173 in Tiruvananthapuram to 57 in Kozhikode. In the secondary sector the rates vary between 30 in Ernakulam and 100 in Changanassery. In the tertiary sector the lowest rate of 55 is in Palakkad and the highest rate of 60 is in Kozhikode.

The study of the variation in participation rate in the various states shows that total participation rate and the participation rate in tertiary and agricultural labour are highly correlated. In the districts of the State such a relationship is not noticed.

The participation rates in 1954 and 1955 are groups are the lowest in Kerala. This is on account of the large proportion of school and college going students in these age groups in the State.

In all the States the highest participation rate is reported in the primary sector and the lowest rate in the secondary sector which is a characteristic of developing countries.



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APPENDIX.Table I.

Characteristics used to work out correlation co-efficients.

STATE	Density of population per sq.km. 1961 census.	No.of literates per 1000 persons 5-14 years 1961 census.
Andhra Pradesh	131	190
Assam	97	266
Bihar	268	115
Gujarat	112	292
Jammu & Kashmir	26	70
Kerala	435	490
Madhya Pradesh	74	123
Madras	259	323
Maharashtra	129	274
Mysore	123	227
Orissa	113	157
Punjab	166	225
Rajasthan	59	94
Uttar Pradesh	250	106
West Bengal	394	203

Table - 2.

DISTRICT	Density of population per sq.km. 1961 census.	No.of literates per 1000 persons 5 years and above 1961 census.
Trivandrum	798	631
Quilon	410	685
Alleppey	988	745
Kottayam	273	734
Ernakulam	557	682
Trichur	557	657
Palghat	346	497
Kozhikode	393	604
Cannanore	314	613



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APPENDIX

Table I

Characteristics used to work out correlation coefficients

STATE	1951 census	1951 census	No. of villages per 1000 persons 5-14 years 1951
Andhra Pradesh	181	181	100
Bihar	97	97	305
Goa	208	208	113
Madhya Pradesh	113	113	333
Madhya Pradesh	20	20	10
Madhya Pradesh	455	455	480
Madhya Pradesh	74	74	123
Madhya Pradesh	258	258	305
Madhya Pradesh	123	123	374
Madhya Pradesh	183	183	305
Madhya Pradesh	113	113	113
Madhya Pradesh	108	108	108
Madhya Pradesh	89	89	89
Madhya Pradesh	250	250	100
Madhya Pradesh	304	304	303

Table II

Characteristics used to work out correlation coefficients

DISTRICT	1951 census	1951 census	No. of villages per 1000 persons 5 years and above
Alwar	208	208	631
Bikaner	410	410	633
Bikaner	183	183	243
Bikaner	273	273	191
Bikaner	307	307	683
Bikaner	257	257	657
Bikaner	308	308	487
Bikaner	333	333	304
Bikaner	214	214	613



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