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D. R. C. No. 68



**BUREAU OF ECONOMICS & STATISTICS
KERALA STATE**

Population Studies No. 119

**STERILISATIONS IN KERALA (1968-69)
AN APPRAISAL**

NOVEMBER, 1971

**POPULATION DIVISION
DEMOGRAPHIC RESEARCH CENTRE**



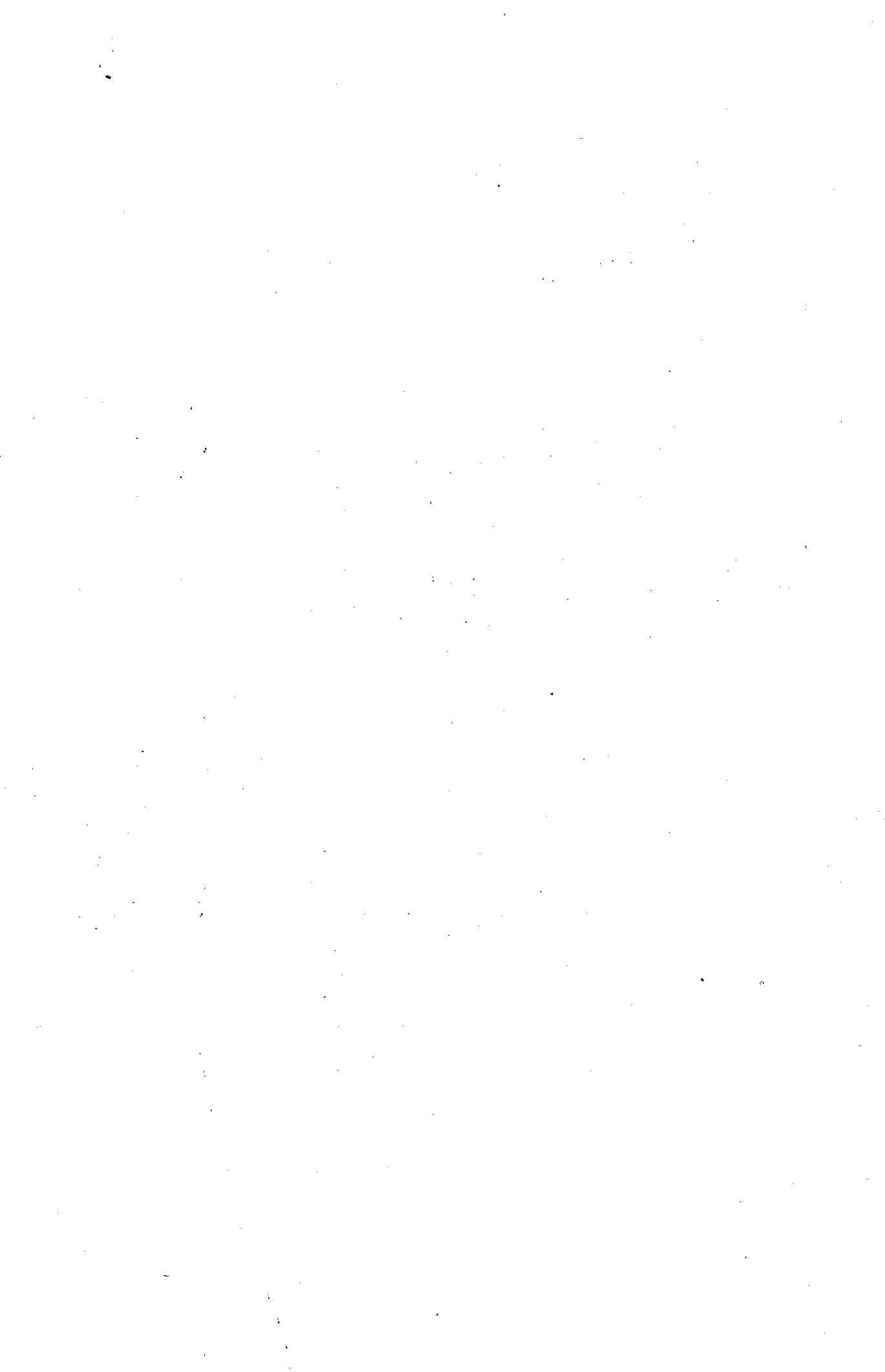
Population Studies No.119STERILIZATIONS IN KERALA (1963-69) - AN APPRAISAL

The report gives the demographic characteristics of persons sterilised during the year 1963-69. The report differs from similar reports of the earlier years. In the present report an attempt is made to analyse the educational status of the various religious groups of sterilised persons. Further the report also gives an appraisal of cumulative achievement of sterilisations and its impact on the birth rate .

The report is prepared by Sri N.V. George, Research Officer, Shri P.S. Gopinathan Nair, Assistant Director and Sri S.Bhagavatheeswara Iyer, Deputy Director.

Bureau of Economics
and Statistics,
Trivandrum,
Dated 3-11-1971.

(N.GOPALAKRISHNAN NAIR)
Additional Director.



1. Introduction:

Sterilisation operation is considered as the most effective method of birth control. The permanent stoppage of pregnancies achieved by the operation is its greatest advantage over other birth methods. Temporary methods which require continued attention are not suitable for countries with poor living conditions and educational level. Sterilisations, i.e., vasectomies and tubectomies are becoming increasingly popular in Kerala State. The Demographic Research Centre has been conducting studies on the characteristics of the sterilised persons from 1972 onwards. The present study is based on the data on persons who have undergone sterilisation during 1968-69 (April 1968 to March 1969). The data were collected by the District Statistical staff from the various institutions concerned with the family planning programme.

2. Objects:

In this paper an attempt is made to study the following.

- i) Progress of sterilisation operations during the year
- ii) Socio-economic and demographic characteristics of sterilised persons, namely, their age, sex, religion, education, income, occupation and number of children.
- iii) Effect of the sterilisations achieved on the birth rate.

3. Limitations of the study:

All sterilisations conducted during the year were proposed to be covered for the purpose of the study. But data regarding only 71224 operations could be collected though 73840 operations were conducted during the year. The coverage is only about 96% in the case of vasectomies and 92% in the case of salpinjectomies. Though it would appear from the above figures that only a small percentage of cases is not covered by the study, it may be noted that the coverage is very poor if the availability of data in respect of individual characteristics is considered. For certain items like occupation, educational standard and number of children born the information is not available in as much as 80% of the cases. The percentage of 'not recorded' cases under each characteristic is given below.

<u>Characteristic</u>	<u>Percentage of 'not recorded' cases</u>
1. Age	2.7
2. Number of children born	32.6
3. Educational standard	35.7
4. Religion	10.4
5. Occupation	33.5
6. Income	19.0
7. Number of children living	13.9
8. Number of children living in each sex	21.0

8
TOTAL

8
TOTAL

The information on age is available in most of the cases. Religion and number of children living are two items on which information is available in more than 85% cases. The conclusions drawn are subject to this limitation of incomplete coverage.

4. Progress of sterilisation Operation:

The programme has gained considerable momentum during the year. The number of sterilisation operations conducted during 1968-69 with the figures for the two previous years are given below.

<u>Year</u>	<u>Number of sterilisation Operations</u>	<u>Index of progress</u>
1966-67	40274	100
1967-68	65155	162
1968-69	73240	183

The achievement during the year is nearly twice the achievement during 1966-67. Compared to the previous year also the achievement is much higher. Of the 73240 sterilisations conducted during 1968-69, 58775 were vasectomies and 15065 were salpinjectomies. Thus vasectomies accounted for about 80% sterilisation operations. The corresponding figures for the previous year was 82%. Though the number of vasectomies and tubectomies has increased during the year, the increase in the number of vasectomies is proportionately more.

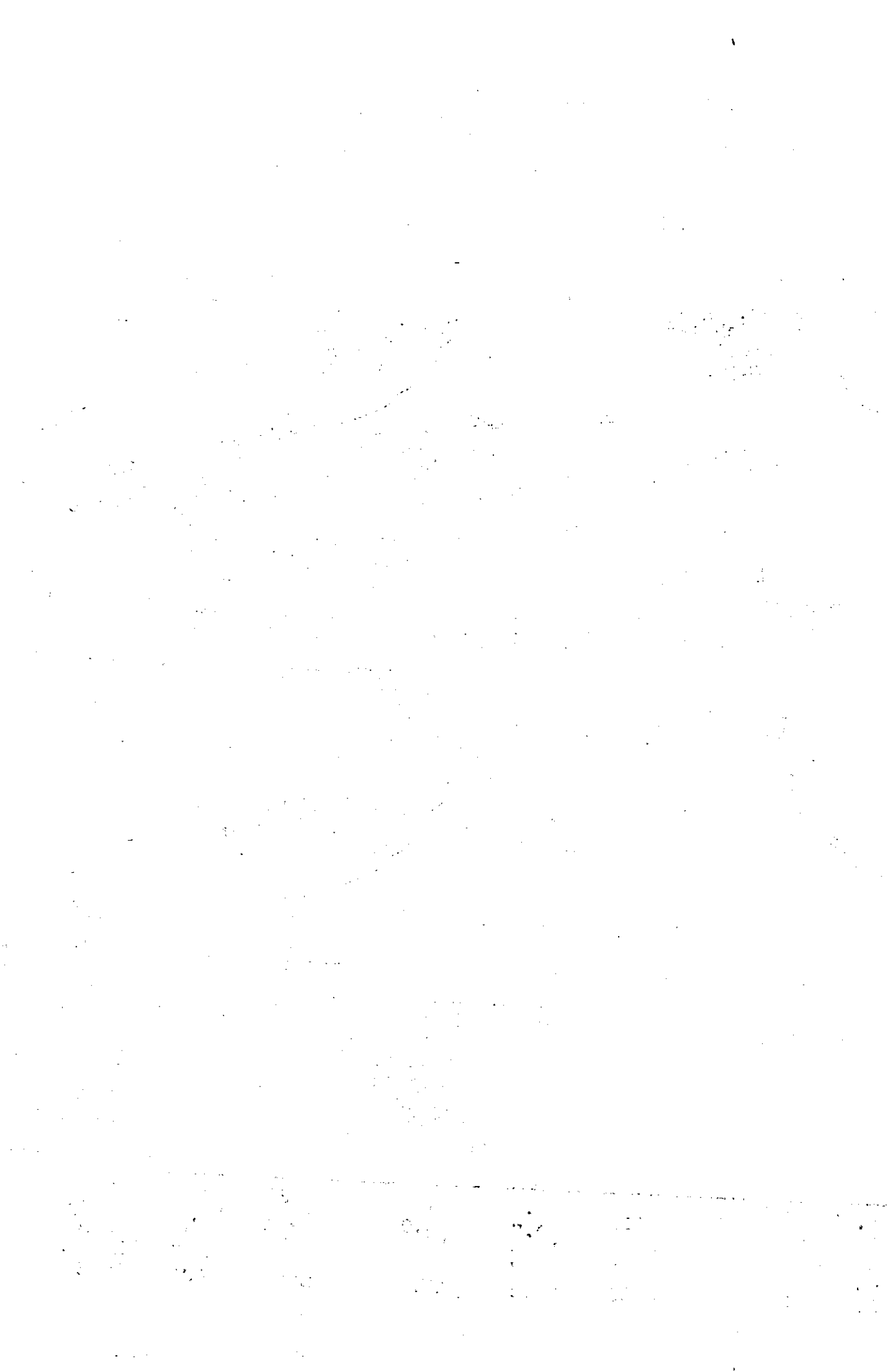
The achievement works out to 3.62 sterilisation per 1000 population. According to 1961 population census figures, there are 146 married females in 15-44 age group per 1000 population. On this basis it seems that the achievement of 3.62 sterilisations per 1000 population achieved in 1968-69 is quite inadequate to achieve substantial reduction in birth rate in the population.

5. Age and sex composition of sterilized persons:

The distribution of sterilised persons according to age and sex is given below:

Table 1
Distribution of sterilised persons according to age and sex

<u>Age group</u>	<u>Males</u>			<u>Females</u>		
	<u>Number</u>	<u>Percentage</u>	<u>Percentage distribution of married males 20-54 (1961 census)</u>	<u>Number</u>	<u>Percentage</u>	<u>Percentage distribution of married females 15-44 (1961 census)</u>
1. 15-19	..	..	..	31	0.2	8.5
2. 20-24	389	0.7	6.0	1871	13.8	28.0
3. 25-29	5819	10.4	15.6	4855	35.9	23.3
4. 30-34	12141	21.8	18.7	4018	29.7	18.7
5. 35-39	15410	27.6	19.8	2325	17.2	16.5



1	2	3	4	5	6	7
6. 40-44	11465	20.6	15.0	363	2.7	11.0
7. 45 and above	10519	18.9	24.9(45-54 years)	73	0.5	..
8. Not recorded	1687	..	..	258	..	..
9. Total	57430	100.0	100.0	13794	100.0	100.0

About 50% of the males sterilised belong to the age group 30-39 years. In the case of females the two age groups of 25-29 years and 30-34 years account for about 66% of the sterilisations. A comparison with the previous year's figures reveals that there is not much change during the year in the age composition of the sterilised persons.

The percentage distribution of married males in 20-54 years in Kerala according to 1961 census is also given in the above table for the sake of comparison. The males coming for vasectomy are mainly from this age group. It is noted that the percentage of males in the age groups below 30 years and above 45 years undergoing sterilisation are less than the percentages of married males in the corresponding age groups in the general population. In the other age groups percentages of males accepting sterilisation exceed the corresponding percentages in the general population. This shows that few males undergo the sterilisation operation in the early years of married life and after 45 years of age.

In the case of females also this characteristic is noticed. Here comparison is made with the distribution of married females in reproductive age group of 15-44. Females in age groups below 25 years and above 40 years accept sterilisation rarely.

The median age at the time of sterilisation is 37.6 years for males and 30.5 years for females. The corresponding figures for 1967-68 were 38.1 years and 33.8 years. There is thus a favourable shift in favour of early adoption of sterilisation.

6. Religious composition of sterilised persons

Difference in the rate of acceptance of sterilisation by various religious groups has been noticed in the studies conducted in the previous years. This position is more or less the same during the year 1968-1969 also.

According to 1961 census figures 61% of the population are Hindus, 21% Christians and 18% Muslims in the State. The distribution of sterilised persons during the year 1968-69 according to religion shows that 73% of them are Hindus, 18% Christians and about 9% Muslims. This reveals that Muslims and Christians do not adopt sterilisation as readily as the Hindus, and that the Muslims

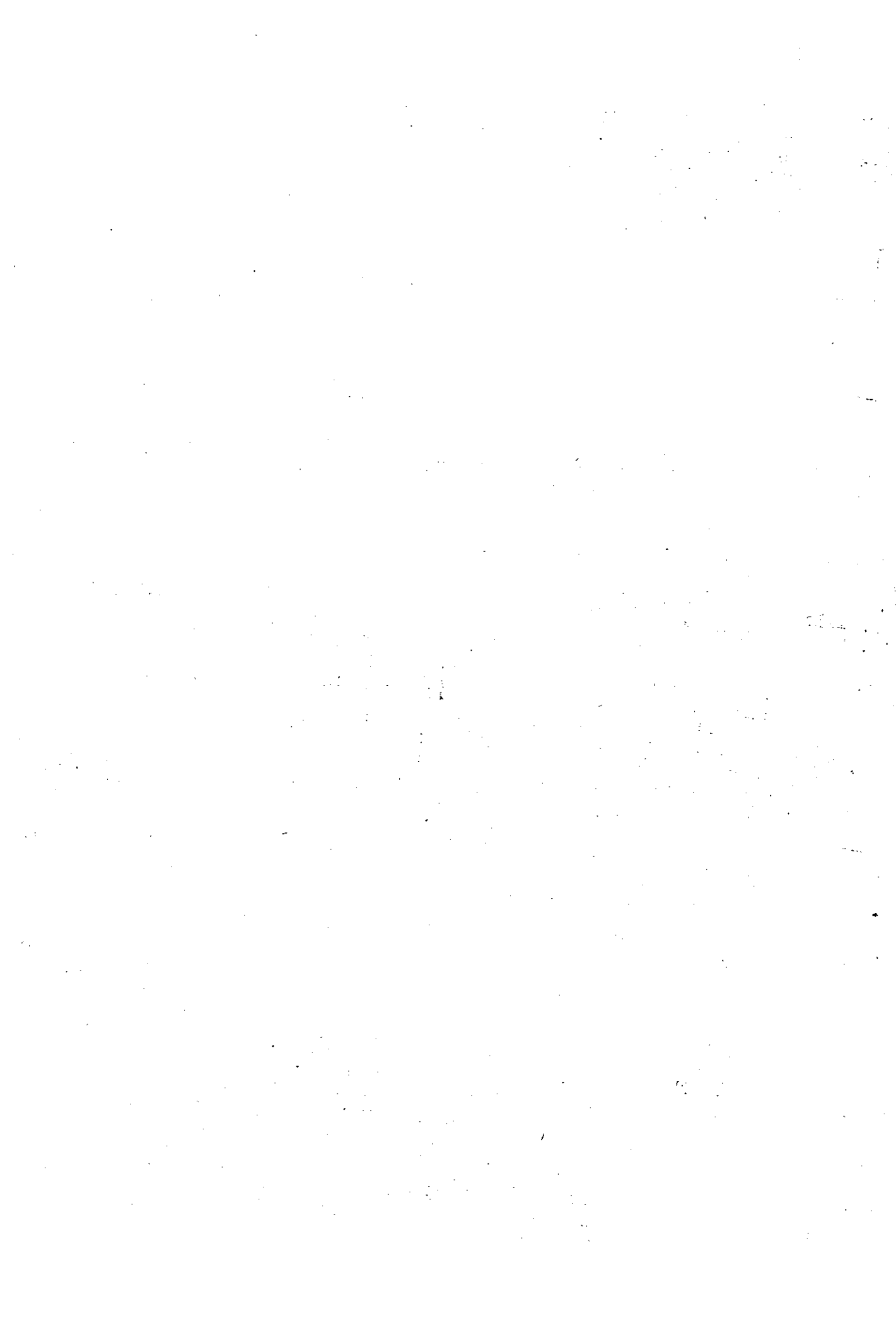
seem to be comparatively the most reluctant group to undergo sterilisation operation. It may however be noted that, a comparison of the figures during the years 1967-68 and 1968-69 shows a slight increase in the percentage of Muslims accepting sterilisation, the percentages being 7.4 during 1967-68 and 8.6 during 1968-69.

one can reasonably suspect that the differential acceptance of family planning among the different religions may be, among other factors, due to the difference in the levels of educational attainments of the population in the different religions. The educational attainment of sterilised persons in each religious group is also given in Table 2 below.

Table 2
Distribution of sterilised persons according to religion
and educational status.

Educational Status	Hindus		Christians		Muslims		Not recorded		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. Illiterate	6847	21.1	1191	13.6	1456	39.0	163	20.4	17,531	17.53	9673	21.1
2. Literate below primary	14055	43.3	4318	49.3	1229	32.9	404	50.9	10	31.3	20016	43.7
3. Above primary below middle	7643	23.5	2115	24.2	751	20.1	144	18.2	5	15.6	10658	23.3
4. Above middle below matric	1605	4.9	502	5.7	120	3.2	48	6.0	..	..	2275	5.0
5. Matric and above literates	1537	4.9	482	5.5	112	3.0	30	3.8	..	..	2211	4.8
6. Literacy standard not specified	740	2.3	147	1.7	67	1.8	5	0.7	..	..	959	2.1
7. Not recorded	14130	..	2833	..	1781	..	6638	..	..	..	25432	..
Total	46607	100.0	1638	100.0	5610	100.0	7431	100.0	3210	100.0	71224	100.0
Percentage	73.1		18.2		8.6		..		0.1		100.0	

It is seen that among sterilised persons Muslims have the lowest educational attainment and christians have the highest educational attainment. The percentage of illiterates among christians is only 14 while the corresponding percentage is 39 among Muslims. Since information on the educational attainment among the various religious groups in the general population is not available, it has not been possible to judge how far the educational attainment is correlated with the acceptance of sterilisation by the various religious groups. But a comparison of the distribution of the population of Kerala in 20-59 years according to educational status with that of sterilised persons shows that sterilisation is more popular among educated persons. The percentage of literates among persons in 20-59 age group is 57 in the general population whereas there are 79% literates among sterilised persons. The comparatively lower acceptance of sterilisation among the Muslims may thus be attributed to their lower educational status.



7. Occupation:

The distribution of sterilised persons according to occupation is given in the following table.

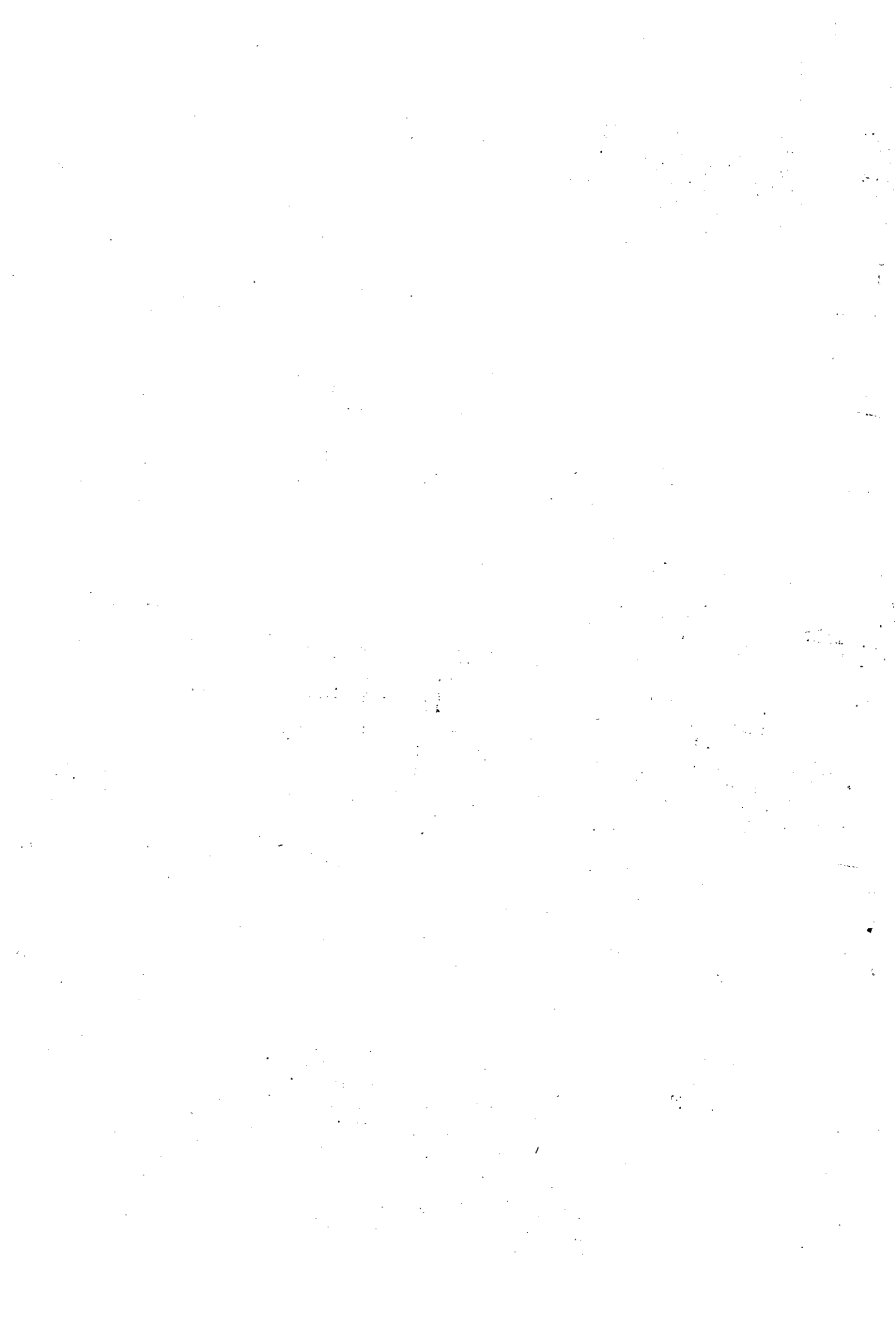
Table 3
Distribution of sterilised persons according to occupation

Occupation	Male		Female		Total	
	No.	Percentage	No.	Percentage	No.	Percentage
1. Agricultural labour	3981	9.6	438	7.6	4419	9.3
2. Other unskilled work	22394	54.0	2620	45.5	25024	52.8
3. Skilled work	5566	13.4	547	9.5	6113	12.9
4. Professional work	543	1.3	191	3.3	734	1.6
5. Cultivators and farmers	3577	8.6	504	8.7	4081	8.6
6. Traders and businessmen	1956	4.7	321	5.5	2277	4.8
7. Clerical work	411	0.9	151	2.6	562	1.2
8. Others	3067	7.4	639	11.0	3706	7.9
9. No occupation	63	0.1	366	6.3	429	0.9
10. Not recorded	15872	..	8007	..	23879	..
Total	57430	100.0	13794	100.0	71224	100.0

Information on occupation is recorded in the case of only two-thirds of the persons. Among them, a substantial percentage belong to the category 'other unskilled work' which consists of coolies and similar categories. The other categories which contribute near about 10% are skilled work and agricultural labour. A similar trend was seen in 1967-68 with a shift in favour of skilled workers and agricultural labourers. A comparison of the occupational composition of the sterilised persons with the distribution of workers in the general population according to 1961 census, given below, will indicate to some extent the groups among whom sterilisation is relatively more popular.

Table 4
Percentage distribution of workers in Kerala according to 1961 census

Category	Males	Females	Total
1. Agricultural labour	22.91	16.25	20.92
2. Cultivator	13.10	27.42	17.38
3. Trade and commerce	7.56	1.41	5.72
4. Mining, quarrying, livestock, forestry, fishing etc.	10.10	5.27	8.66
5. Household industry	4.78	17.82	8.68
6. Manufacturing other than household industry	9.96	8.11	9.40
7. Construction	1.71	0.18	1.26
8. Transport, storage communication	3.67	0.45	2.71
9. Other services	26.21	23.09	25.27
Total	100.00	100.00	100.00



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A full scale comparison of the figures in tables 3 and 4 is not possible in view of the difference in the categories adopted for classification. Only three categories namely, cultivators agricultural labour and trade and commerce are comparable in the two tables. Cultivators seem to be not sufficiently motivated to adopt sterilisation as seen from the fact that against 21% of cultivators present in the general population, there are hardly 9% cultivators among the sterilised persons.

In respect of the category of agricultural labour in table 4, comparison with table 3 has to be made, taking together the two categories, namely, agricultural labour and other unskilled workers. These include coolies who are mostly agricultural labourers. On the basis of this comparison, it may be seen that the proportion of agricultural labour among the sterilised persons is about three and a half times their proportion in the general population. Incentives given for sterilisation may be the main reason to attract larger percentage of persons in this category.

8. Income:

Another economic characteristic worth examining about the sterilised persons is the information on their income. Information on their monthly income is usually collected. But there are limitations regarding the income data, due to the inaccuracy of the income figures furnished by the informants; and due to the larger number of 'not recorded' cases. The data on income have not been recorded during the year under report in 19% of the cases. The following table gives the distribution of sterilised persons according to monthly income.

Table 5
Distribution of sterilised persons according to income

Monthly income	Males		Females		Total	
	No.	Percentage	No.	Percentage	No.	Percentage
Below Rs.50/-	8932	18.6	2167	22.6	11099	19.2
Rs.50-99	32644	67.3	5645	59.0	38289	66.4
Rs.100-149	4273	9.1	858	8.9	5131	9.0
Rs.150-199	1241	2.6	408	4.3	1649	2.9
Rs.200 and above	940	1.9	495	5.2	1435	2.5
Not recorded	9300	..	4226	..	13526	..
Total	57430	100.0	13794	100.0	71224	100.0

As in previous years, a very large percentage of the sterilised persons belong to the monthly income group of below Rs.100/-. The percentage is 86% during the year compared to 89% during 1967-68. This suggests that the financial incentive continues to exert a strong influence on the adopters of sterilisation operation. The popularity of sterilisation among lower income groups is also selective i.e. in the lower income groups themselves more literates adopt sterilisation.

9. Number of children:

The number of children born to sterilised persons and the number of children living in each sex at the time of sterilisation are two important aspects to the study. While the former gives

in view of the fact that the unskilled workers



an idea of the parity, the latter gives information about the family size desired by the couple accepting sterilisation. Tables 6, 7, 8 and 9 give the distribution of sterilised persons according to the number of children born, total number of children living and the number of children living in each sex.

Table 6

Distribution of sterilised persons according to number of children born.

Number of children born	Males		Females		Total	
	No.	Percentage	No.	Percentage	No.	Percentage
0	2	0.0	2	0.0	4	0.0
1	272	0.7	54	0.8	326	0.7
2	6628	16.1	624	9.1	7252	15.1
3	10309	25.0	1640	23.9	11949	24.9
4	8892	21.6	1767	25.8	10659	22.2
5	6547	15.9	1212	17.7	7759	16.2
6	4370	10.6	761	11.1	5131	10.7
7	12327	5.7	416	6.1	2743	5.7
8	1124	2.7	214	3.1	1338	2.8
9	422	1.0	97	1.4	519	1.1
10	188	0.5	46	0.6	234	0.4
Above 10	85	0.2	26	0.4	111	0.2
Not recorded	16264	..	6935	..	23199	..
Total	57430	100.0	13794	100.0	71224	100.0

Table 7

Distribution of sterilised persons according to number of Children living.

Number of children living	Males		Females		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
0	4	0.0	2	0.0	6	0.0
1	416	0.8	225	2.1	641	1.0
2	9511	18.8	1318	12.6	10829	17.7
3	13649	26.9	2701	25.7	16350	26.7
4	11091	21.8	2610	24.8	13701	22.3
5	7690	15.2	1751	16.6	9441	15.4
6	4729	9.3	1036	9.8	5765	9.4
7	2300	4.5	517	4.9	2817	4.6
8	933	1.8	228	2.2	1161	1.9
9	312	0.6	105	1.0	417	0.7
10	102	0.2	25	0.2	127	0.2
Above 10	38	0.1	14	0.1	52	0.1
Not recorded	6655	..	3262	..	9917	..
Total	57430	100.0	13794	100.0	71224	100.0

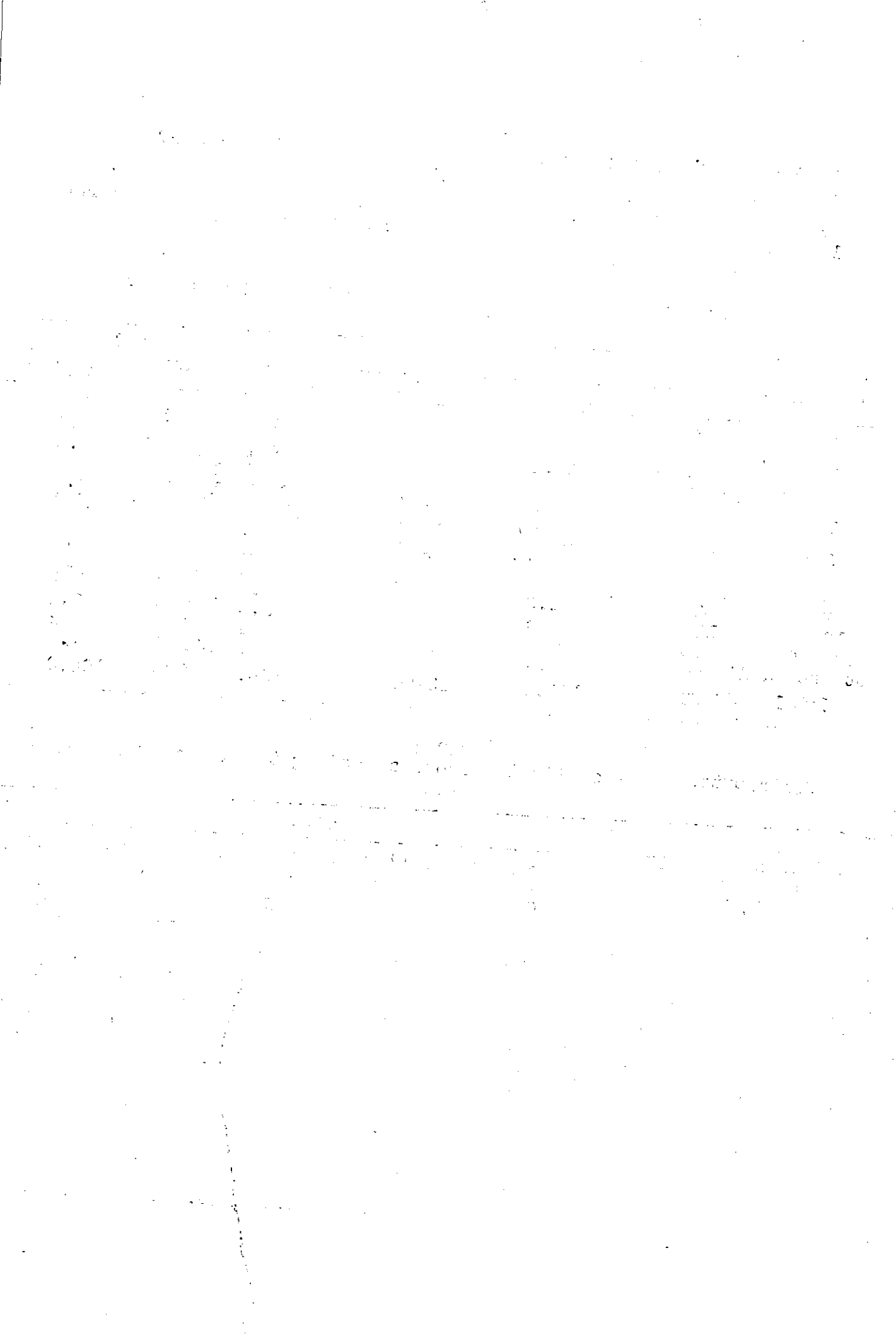


Table 8

Distribution of sterilised males according to number of children living in each sex.

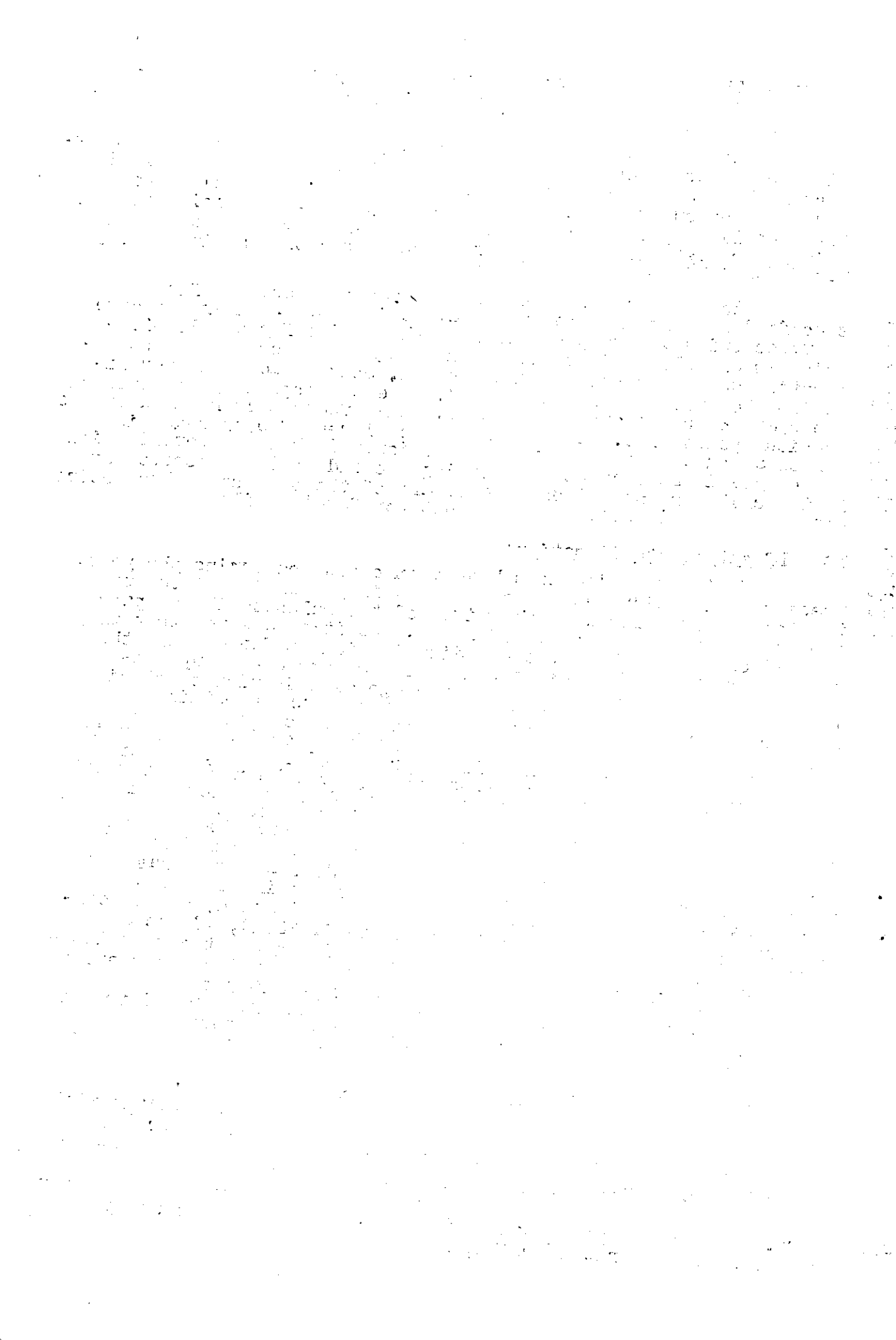
Number of male children living	Number of female children living									Total	%
	0	1	2	3	4	5	6	Above 6	Not recorded		
0	4	123	1152	928	409	151	50	21	..	2838	5.9
1	263	6019	4674	2262	964	363	108	26	..	14679	30.3
2	1931	5911	4716	2212	949	298	76	10	..	16112	33.2
3	1231	12666	2611	1544	556	162	40	16	..	9026	18.6
4	582	1224	1138	674	266	69	17	1	..	3971	8.2
5	203	422	384	195	87	26	4	1	..	1322	2.7
6	81	133	124	54	20	12	4	..	..	428	0.9
Above 6	21	45	34	15	4	1	2	..	..	122	0.2
Not recorded	..	..	..	..	..	..	..	..	8932	8932	..
Total	4516	16543	14833	7884	3255	1082	201	84	8932	57430	100.0
Percentage	9.3	34.2	30.6	16.2	6.7	2.2	0.6	0.2	..	100.0	

Table 9

Distribution of sterilised females according to number of children living in each sex

Number of male children living	Number of female children living									Total	%
	0	1	2	3	4	5	6	Above 6	Not recorded		
0	2	29	117	137	62	35	14	1	..	397	5.1
1	43	507	658	400	184	68	16	12	..	1888	24.2
2	173	968	896	384	165	57	15	3	..	2661	34.2
3	209	557	530	279	88	36	10	4	..	1713	22.0
4	107	213	223	105	61	22	5	3	..	739	9.5
5	44	68	78	35	25	8	2	1	..	261	3.3
6	10	34	24	15	6	2	2	1	..	94	1.2
Above 6	15	10	7	3	2	1	..	..	..	38	0.5
Not recorded	..	..	..	..	..	..	..	..	6003	6003	..
Total	603	2386	2533	1358	593	229	64	25	6003	13794	100.0
Percentage	7.8	30.6	32.5	17.5	7.6	2.9	0.8	0.3	..	100.0	

According to Table 6 about 41% of the persons are from the 3rd or lower parities. There are 4 persons who have adopted sterilisation without any children, More than 300 persons have 10 or more children born. The average number of children born for sterilised persons is



11. Cumulative achievement of sterilisation and its impact.

Though the characteristics of persons sterilised were studied upto 1968-69, the achievement figures are available upto the end of 1970. Table 10 gives the yearly achievements.

Table 10
Number of sterilisations conducted each year from
1957

Year	Number of male sterilisations	Number of female sterilisations	Total
1957	521	158	679
1958	1633	1507	3140
1959	4132	2236	6268
1960	3079	1953	5032
1961	3578	2939	6517
1962	4182	2916	7098
1963	10395	2830	13225
1964	17938	3936	21904
1965	36102	6532	42634
1966	33251	6147	39398
1967	49489	10504	59993
1968	64081	14066	78147
1969	41867	17645	59512
1970	49624	19860	69484
Total	319872	93259	413131

The figures show that the steady progress in the programme till 1968 was interrupted by a slight decline during 1966. In 1969 also the number of sterilisations has declined. In 1970 it has again increased though not to the 1968 level,

The impact of these operations can be measured in two ways. First, by finding out the number of births prevented by these sterilisations over the years. Secondly by the decline in birth rate. For finding out the number of births saved, the method developed by Sri S.P. Jain can be used. The method is the calculation of births that will occur to the sterilised females and wives of sterilised males on the basis of their age distribution and age specific marital fertility rate. In the subsequent years, the number of survivors are found out by joint survival ratios. The total number of births saved till 1970 is estimated by the above method to be 2.26 lakhs.

According to the Government of India estimates 1.7 births will be prevented per sterilisation over a period of 10 years. Hence the number of births saved till 1980 by the sterilisations from 1957 to 1970 will be 7.02 lakhs. This excludes the impact of sterilisations that will be done after the year 1970.

12. Summary:

The study has provided the following main findings:-

The median age at the time of sterilisation is found to be 37.6 years for males and 30.5 years for females. These figures show a slight decrease compared to the previous year.



There is a slight increase in the percentage of Muslims among sterilised persons as compared to the percentages in the year 1967-68. But still the percentage is very low when compared to their percentage in the general population.

The illiterates are comparatively fewer among persons adopting sterilisation.

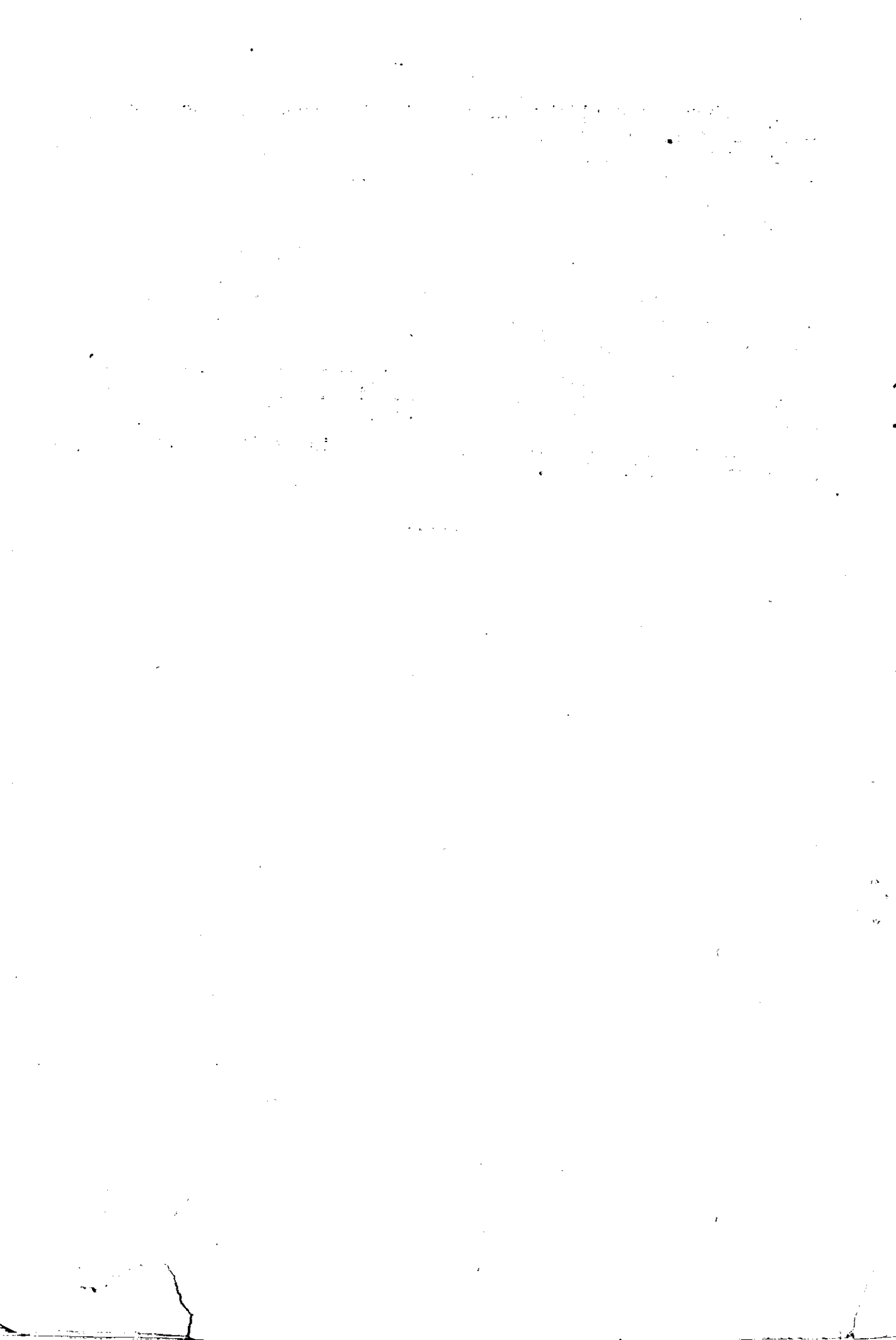
Large percentage of the sterilised persons belong to low income groups.

There is a shift in favour of early sterilisations i.e. compared to the previous year, more persons adopt sterilisation when they have 3 or less living children.

The sterilisations conducted in 1968-69 is estimated to have resulted in the saving of 16385 births during the 1st one year and 125528 births in the course of next 10 years.

A reduction of 2.3% in birth rate is estimated as a result of these sterilisations.

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