

GOVERNMENT OF KERALA

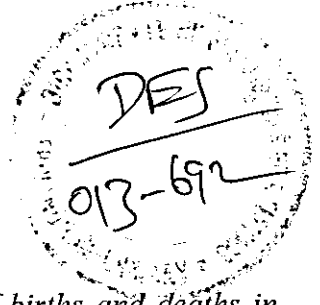


RESIDENTIAL VITAL RATES
IN
MUNICIPALITIES & CORPORATIONS
1990

DEPARTMENT OF ECONOMICS & STATISTICS
THIRUVANANTHAPURAM
1997



Preface



This report presents the residential rates of births and deaths in the selected Municipalities and City Corporation for the year 1990. The rates are estimated from the registered births and deaths to the normal residents, after making adjustments for under-registration and for events occurring outside the Municipal/Corporation areas, using the results of spot-check conducted in those Municipalities/Corporations. This report has been prepared by the Vital Statistics Unit in the Directorate of Economics & Statistics.

*Thiruvananthapuram
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**Director
Dr.M.Kuttappan
Department of Economics & Statistics.**

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RESIDENTIAL VITAL RATES IN CORPORATIONS & MUNICIPALITIES 1990

1. INTRODUCTION

Under the Civil Registration system in Kerala, all the births and deaths are to be registered, at the place of occurrence, itself irrespective of whether it occurred to a normal resident or to an outsider. Because of better modern medical facilities available in the urban areas, the rural people also avail of them, thereby increasing the rate of registration of vital *events* in the Municipal and Corporation areas.

The birth and death registration act and rules are in force in Kerala, to cover the entire events to be registered. According to the act the registration of vital events is compulsory. In order to avoid omissions in the registration of events, various remedial measures including educational efforts through the mass media are taken by the responsible agencies involved in Civil Registration. Despite its compulsory nature and other steps taken for achieving completeness in registration, under registration still exists in Kerala. The presence of under registration as well as the fact that the registration is *defacto* created difficulties to get accurate and reliable data on vital events occurred to the normal residents. It was to complete Civil Registration, the spot check survey under the scheme 'Strengthening of Vital Statistics Units in Municipalities and Corporations' for the improvement of vital statistics was introduced. The result of spot check survey for the year 1990 are presented in this report.

2. Scheme for the improvement of Vital Statistics

The scheme spot check survey aims at estimating the adjusted residential Vital rates in the selected Municipalities and City Corporations and ascertaining the extent of under registration.

All the three city Corporations in Kerala, 30 Municipalities and Guruvayoor Township were covered under the scheme during the year under

report. In the three city Corporations and in the Municipalities except Kollam and Alappuzha 15 wards each were selected for the conduct of the survey. In the Municipalities of Kollam and Alappuzha 18 wards each were selected. In the Guruvayoor Township all the 10 wards were covered for the survey. Selection of wards were made by the random sampling technique. The Statistical staff engaged in the work visited each household in the selected wards and collected the required data. The vital events to normal residents enumerated through the spot check survey comprise the following :

- Events occurring inside the town and registered.
- Events occurring inside the town but not registered.
- Events occurring outside the town registered and unregistered.

The spot check results are mainly used for the calculation of the extent of under registration and estimation of residential vital rates. For the calculation of under registration, the events occurring to persons coming into the city/town to avail themselves of better medical facilities are excluded. Only events to the normal residents are considered.

For the calculation of residential vital rates, events occurred to outsiders are excluded from the total registered events. The registered events to normal residents are weighted for under registration and further adjusted for events occurring to normal residents outside the town.

3. General findings of the survey

Table I - represents area, population and density of population of the selected Municipalities and Corporations during the year under report. Density of population was highest in Kollam (7561) followed by Thiruvananthapuram (6956). Density of population of Punalur Municipality was the lowest (1331). The density of population was more than 5000 in seven centres viz. Kollam, Thiruvananthapuram, Thalassery, Thrissur, Kochi, Kannur and Kozhikode during the year 1990.

Table II - represents the number of hospitals and other medical institutions both in Public and Private sector with bed strength. Number of

public hospitals were the highest in Thiruvananthapuram Corporation, while private hospitals were the highest in Kochi Corporation. Total number of beds available in both Public and Private sector in the three city Corporations were as follows.

Thiruvananthapuram	- 7878
Kochi	- 5147
Kozhikode	- 4773

During the year under report the bed population ratio estimated in respect of the three city corporations was comparatively low which indicates that even in the three city corporations, the medical facilities now available in public hospitals are inadequate to meet the requirements of the increasing population.

Table III - shows the number of burial grounds, cremation grounds available both in the public and private sector and also the number of registration units in each Municipality and Corporation selected for the spot check survey during the year 1990.

Table IV - represents number of registration units with area and population of each registration unit. Number of registration units was highest in Thiruvananthapuram (15) followed by Kozhikode (14). Area was largest in Kochi (94.88 Sq.Km.) followed by Kozhokode (82.67 Sq.Km.) and Thiruvananthapuram (74.93 Sq.Km.). Among Municipalities area was the largest in Alappuzha (46.77 Sq.Km.) while area per registration unit was largest in Punalur (34.60 Sq.Km.).

Table V - represents the registered vital events such as Live Births, Still Births, Infant deaths other deaths and Maternal Deaths with male and female break up in city corporations and Municipalities selected for the spot check survey during the year under report. Among the three city Corporations, Live Births to normal residents was maximum in Thiruvananthapuram Corporation (14584) followed by Kozhikode (10788) and Kochi (7326). With regard to Municipalities, Live Births to normal residents was maximum in Thalassery (3732) and minimum in Guruvayur Township (62). Still Births and Infant Deaths

to normal residents were the highest in Kozhikode Corporation. Vaikom, Irinjalakuda, Kodungalloor, Kunnamkulam, Tirur and Malappuram municipalities and Guruvayoor township have not reported any still births to normal residents. During the previous year there were 8 municipalities from where no still births to normal residents were reported. No infant deaths to normal residents were reported from Neyyattinkara, Attingal, Palai, Vaikom, Moovattupuzha, Irinjalakkuda, Kunnamkulam and Malappuram municipalities. Infant death to normal residents was the highest in Kozhikode Corporation (430). In the case of other deaths also Kozhikode Corporation stood first (3666) among Corporations and Thalassery (844) among Municipalities. Maternal deaths to normal residents were reported only from Kollam and Palakkad Municipalities and Kochi and Kozhikode Corporations.

Table VI - represents death according to causes. Heart diseases seemed to be one major causes of death in the city corporations of Thiruvananthapuram and Kochi and in most of the municipalities. The diseases such as Cancer, Pulmonary diseases, Respiratory diseases and Dysentery were also among the leading causes of death.

Table VII - Results of spot check survey are given in this table. It is seen that live births and other deaths to normal residents enumerated was maximum in Kochi Corporation.

Table VIII - represents the details of under registration and occurrence of outside events in the City corporations and Municipalities selected for the survey during the year under report. Percentage of under registration of births was highest in Neyyattinkara (16.67) municipality and that of death was highest in Chalakkudy municipality (33.94). During the previous year, these ratios were 21.32 and 21.50 respectively in these municipalities. The percentage of under registration of birth was nil in 15 centres viz. Kollam, Kayamkulam, Mavelikara, Cherthala, Kottayam, Changanacherry, Palai, Aluva, Perumbavoor, Kodungalloor, Chalakkudy, Kunnamkulam, Tirur and Thalassery municipalities and Guruvayoor township. The percentage of under registration of death was nil in Mavelikara, Changanassery, Chittoor-Thathamangalam, Tirur and Thalassery Municipalities. As in the previous year percentage of outside registration of

births was highest in Irinjalakuda (82.93) Municipality. Percentage of outside registration of death was highest in Kannur Municipality (35.71).

4. Adjusted Residential Vital Rates and Registered Vital Rates 1990

The adjusted residential vital rates and registered vital rates are given in **Table IX**. For estimation of adjusted residential vital rates, the events occurring to outsiders are excluded. The registered birth rate was highest in Kannur (36.17) and the same was lowest in Irinjalakuda (2.88). Registered death rate was highest in Kozhikode (9.80) and lowest in Kannur (2.25) during the year under report.

Table X - represents the comparison of residential births and death rates for the last 6 years beginning from 1985. The adjusted residential birth rates showed a fluctuating trend in almost all the selected Municipalities and corporations except for Cherthala, Kochi and Palakkad. In Cherthala, Kochi and Palakkad the adjusted residential birth rates showed a decreasing trends during the last six years. In respect of adjusted death rate, it also showed a fluctuating trend in all the Municipalities and corporations.

5. Conclusion

The survey has been successfully completed in all the three city corporations and in all the selected Municipalities during 1990 also. The survey result reveals that under registration of vital events exists at certain level in Kerala and hence cent percent coverage in Civil registration was not achieved during the year under report also. Spot check survey helps to find out the unregistered events and thereby the concerned authorities can take necessary steps to minimise the rate of under registration.

APPENDIX

6. *Method of calculation of Adjusted Residential Vital Rates*

Residential vital rates can broadly be defined as the rate of occurrence of vital events to the normal residents of an area in an year. The vital events occurring to normal residents enumerated during the spot check are divided into three categories.

- i. Events occurring inside the town registered.
- ii. Events occurring inside the town but not registered.
- iii. Events occurring outside the town registered or unregistered.

For calculation of the percentage of under registration the events occurring to persons coming to the town/city to avail themselves of better medical facilities are excluded and those of normal residents who are going outside the town are included.

- | | | |
|--|---|---|
| 1. Percentage of under registration | - | $\frac{\text{No. of events occurred to normal residents inside the town but not registered} \times 100}{\text{No. of events occurred to normal residents inside the town registered and not registered.}}$ |
| 2. Percentage of events occurred outside the town to normal residents | - | $\frac{\text{No. of events occurred to normal residents outside the town registered and unregistered} \times 100}{\text{Total no. of events enumerated and occurred to normal residents inside and outside the town.}}$ |
| 3. Registered birth/death rate to normal residents | - | $\frac{\text{Total no. of birth/death occurred to normal residents} \times 1000}{\text{Mid year population of the town.}}$ |
| 4. Residential birth/death rate to normal residents occurred inside the town (weighted for under registration) | - | $\frac{\text{Registered birth/death rate} \times 100}{(100 - \text{percentage of under registration})}$ |
| 5. Final Residential birth/death rate (weighted for outside events) | - | $\frac{\text{Residential birth/death rate to normal residents occurred inside the town (weighted for under registration)} \times 100}{(100 - \text{percentage of events occurred outside the town to normal residents})}$ |

Table I - Area and Population 1990

Sl.No	Municipality/Corporation	Area in Sq.Km as per 1981 census	Mid year population	Density of population per Sq.Km.
1	2	3	4	5
1.	Neyyattinkara	9.70	30246	3118
2.	Thiruvananthapuram	74.93	521176	6956
3.	Attingal	14.18	32425	2287
4.	Kollam	18.48	139724	7561
5.	Punalur	34.60	46057	1331
6.	Kayamkulam	21.79	66747	3063
7.	Mavelikara	12.65	28183	2228
8.	Alappuzha	46.77	174348	3728
9.	Cherthala	16.19	43131	2664
10.	Thiruvalla	27.87	54574	1958
11.	Changanacherry	13.50	52412	3882
12.	Kottayam	15.55	63239	4067
13.	Palai	15.93	21872	1373
14.	Vaikom	8.73	21720	2488
15.	Muvattupuzha	13.18	27437	2082
16.	Kochi Corporation	94.88	561018	5913
17.	Aluva	7.18	24807	3455
18.	N.Paravur	9.03	27795	3078
19.	Perumbavoor	13.59	24557	1807
20.	Irinjalakuda	11.24	27395	2437
21.	Kodungallur	17.30	31046	1795
22.	Chalakydy	25.23	44850	1778
23.	Thrissur	12.65	74820	5915
24.	Guruvayoor Township	6.49	20050	3089
25.	Kunnamkulam	6.96	19642	2822
26.	Palakkad	26.60	122448	4603
27.	Chittoor-Thathamangalam	14.71	31936	2171
28.	Thirur	16.59	48825	2943
29.	Malappuram	33.60	48963	1457
30.	Kozhikode Corporation	82.67	418091	5057
31.	Vadakara	21.34	71853	3367
32.	Thalasserry	15.35	103192	6723
33.	Kannur	11.03	64940	5888
34.	Kasaragod	16.68	49628	2975

Mid year population based on 1991 Census.

Table III - Number of Burial Grounds, Cremation Grounds, Wards and Civil Registration Units

Sl. No.	Municipality/ Corporation	Burial Grounds			Cremation Grounds			V.S Registration units	
		Mun/ Corp.	Private	Total	Mun/ Corp.	Private	Total	No. of wards	No. of units
1	2	3	4	5	6	7	8	9	10
1.	Neyyattinkara	1	4	5		3	3	20	1
2.	Thiruvananthapuram	1	24	25	1		1	50	15
3.	Attingal	1	1	2		5	5	20	1
4.	Kollam	2	20	22				36	1
5.	Punalur	1	7	8				28	1
6.	Kayamkulam	1	14	15	1	3	4	32	1
7.	Mavelikara	1	9	10		1	1	20	1
8.	Alappuzha	3	2	5		19	19	36	2
9.	Cherthala	1	5	6		1	1	28	1
10.	Thiruvalla	1	1	2				32	1
11.	Changanacherry	1	12	13		1	1	32	1
12.	Kottayam	1	15	16	1	1	2	32	2
13.	Palai	1	5	6				20	1
14.	Vaikom	1	2	3				20	1
15.	Muvattupuzha	1	8	9				20	1
16.	Kochi Corporation	8	40	48	5	11	16	50	2
17.	Aluva		7	7		3	3	20	1
18.	N.Paravur	1	7	8	1	7	8	20	1
19.	Perumbavoor		8	8		1	1	20	1
20.	Irrinjalakuda	1	5	6		1	1	20	1
21.	Kodungallur		2	2				20	1
22.	Chalakydy	2	7	9		1	1	28	1
23.	Thrissur	3	11	14	2	1	3	32	6
24.	Guruvayur Township	1	4	5		1	1	10	1
25.	Kunnamkulam	1	1	2				16	1
26.	Palakkad	4	7	11	3	1	4	36	1
27.	Chittoor- Thathamangalam		1	1	3		3	24	1
28.	Thirur	1		1		1	1	28	1
29.	Malappuram	1	10	11		1	1	24	1
30.	Kozhikode Corporation	2	9	11	4	2	6	39	14
31.	Vadakara	1	8	9				32	1
32.	Thalasserry	1	15	16	1	11	12	32	2
33.	Kannur	1	12	13	1		1	32	4
34.	Kasaragod		9	9	2	1	3	28	2

Table IV - Registration units with area and population 1990

Sl.No.	Municipality/ Corporation	No.of Reg. units	Area in Sq.km	Area per reg. units	Estimated populatio n	Population per Reg. units
1	2	3	4	5	6	7
1.	Neyyattinkara	1	9.70	9.70	30246	30246
2.	Thiruvananthapuram	15	74.93	5.00	521176	34745
3.	Attingal	1	14.18	14.19	32425	32425
4.	Kollam	1	18.48	18.48	139724	139724
5.	Punalur	1	34.60	34.60	46057	46057
6.	Kayamkulam	1	21.79	21.79	66747	66747
7.	Mavelikara	1	12.65	12.65	28183	28183
8.	Alappuzha	2	46.77	23.39	174348	87174
9.	Cherthala	1	16.19	16.19	43131	43131
10.	Thiruvalla	1	27.87	27.87	54574	54574
11.	Changanacherry	1	13.50	13.50	52412	52412
12.	Kottayam	2	15.55	7.78	63239	31620
13.	Palai	1	15.93	15.93	21872	21872
14.	Vaikom	1	8.73	8.73	21720	21720
15.	Muvattupuzha	1	13.18	13.18	27437	27437
16.	Kochi Corporation	2	94.88	47.44	561018	280509
17.	Aluva	1	7.18	7.18	24807	24807
18.	N.Paravur	1	9.03	9.03	27795	27795
19.	Perumbavoor	1	13.59	13.59	24557	24557
20.	Irrinjalakuda	1	11.24	11.24	27395	27395
21.	Kodungallur	1	17.30	17.30	31046	31046
22.	Chalakydy	1	25.23	25.23	44850	44850
23.	Thrissur	6	12.65	2.11	74820	12470
24.	Guruvayur Township	1	7.48	7.48	20050	20050
25.	Kunnamkulam	1	6.96	6.96	19642	19642
26.	Palakkad	1	26.60	26.60	122448	122448
27.	Chittoor- Thathamangalam	1	14.71	14.71	31936	31936
28.	Thirur	1	16.59	16.59	48825	48825
29.	Malappuram	1	33.60	33.60	48963	48963
30.	Kozhikode Corporation	14	82.67	5.90	418091	29864
31.	Vadakara	1	21.34	21.34	71853	71853
32.	Thalasserry	2	15.35	7.68	103192	51596
33.	Kannur	4	11.03	2.76	64940	16235
34.	Kasaragod	2	16.68	8.34	49628	24814

Table V - Vital events registered during the year 1990

Sl.No	Municipality/ Corporation	Live Births				Events to normal residents				Still Births			
		Total Events		Total	Events to normal residents		Total	Total Events		Total	Events to normal residents		
		Male	Female		Male	Female		Male	Female		Male	Female	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Neyyattinkara	1741	1613	3354	211	194	405	1	3	4	7	3	10
2.	Thiruvananthapuram	16615	14489	31104	7860	6724	14584	102	89	191	9	11	20
3.	Attungal	458	429	887	175	151	326	3	5	8	1		1
4.	Kollam	7148	6672	13820	1356	1224	2580	16	21	37	2	2	4
5.	Punalur	1323	1276	2599	330	341	671	8	6	14	2		2
6.	Kayamkulam	1372	1258	2630	416	370	786	4	4	8	2	2	4
7.	Mavelikara	2068	1930	3998	170	164	334	14	12	26	1		1
8.	Alappuzha	4400	4486	8886	1355	1240	2595	32	28	60	7	6	13
9.	Cherthala	1307	1198	2505	229	203	432	8	10	18	2		2
10.	Thiruvalla	2737	2896	5633	355	353	708	16	20	36	1	1	2
11.	Changanacherry	1369	1421	2790	307	335	642	13	6	19	2		2
12.	Kottayam	1934	1839	3773	306	253	559	16	11	27	3	1	4
13.	Palai	1450	1500	2950	85	77	162	17	18	35	2		2
14.	Vaikom	445	398	843	74	71	145	2	1	3			
15.	Muvattupuzha	1224	1161	2385	126	110	236	5	6	11	1	1	2
16.	Kochi Corporation	9070	8634	17704	3755	3571	7326	83	71	154	35	24	59
17.	Aluva	2290	2190	4480	107	98	205	25	11	36	1	1	2

Table V - Vital events registered during the year 1990 (Contd.....)

S.No	Municipality/ Corporation	Live Births						Still Births					
		Total Events			Events to normal residents			Total Events			Events to normal residents		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
18.	N.Paravur	1377	1316	2693	115	108	223	10	13	23		1	1
19.	Perumbavoor	1437	1384	2821	95	71	166	12	5	17	1		1
20.	Irinjalakuda	652	555	1207	35	44	79	3	4	7			
21.	Kodungallur	1754	1630	3384	160	147	307	4	2	6			
22.	Chalakudy	1222	1220	2442	194	174	368	3	8	11		2	2
23.	Thrissur	6884	7093	13977	798	539	1037	93	70	163	4	2	6
24.	Guruvayur Township	410	430	840	34	28	62	4	3	7			
25.	Kunnankulam	1032	1006	2038	32	39	71	16	7	23			
26.	Palakkad	4515	139	8654	892	744	1636	35	17	52	8	1	9
27.	Chittoor-	861	914	1775	207	234	441	8	4	12	1	1	2
	Thathamangalam												
28.	Thirur	3241	3075	6316	160	171	331	12	12	24			
29.	Malappuram	1574	1583	3157	337	314	641	16	12	28			
30.	Kozhikode Corporation	14437	13303	27740	5625	5163	10788	291	261	552	99	100	199
31.	Vadakara	3244	3112	6356	495	512	1007	14	13	27	2	5	7
32.	Thalasserry	5758	5121	10879	1895	1837	3732	9	7	16	7	3	10
33.	Kannur	2394	2311	4705	386	382	768	9	5	14	4	2	6
34.	Kasaragod	3020	2971	5991	575	540	1115	49	34	83	7	4	11

Table V - Vital events registered during the year 1990 (Contd....)

Sl.No	Municipality/ Corporation	Infant Death			Events to normal residents			Other Deaths			Maternal Deaths				
		Total Events			Total Events			Total Events			Total	Events to normal residents			
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total		
1	2	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1.	Neyyattinkara	15	9	24				143	82	225	65	47	112		
2.	Thiruvananthapuram	358	324	682	128	89	217	4199	3898	8097	897	902	1799		
3.	Attingal	1		1				72	45	117	61	32	93		
4.	Kollam	126	75	201	12	11	23	954	632	1586	364	369	733	8	
5.	Punalur	7	13	20	2	3	5	175	107	282	107	75	182		2
6.	Kayamkulam	12	5	17	2		2	224	138	362	156	108	264		
7.	Mavelikara	13	12	25				202	124	326	90	68	158		
8.	Alappuzha	104	75	179	18	16	34	1106	680	1786	480	311	791		
9.	Cherthala	21	23	44	3	4	7	276	204	480	121	88	209		
10.	Thiruvalla	40	22	62	4		4	433	290	723	121	110	231		
11.	Changanacherry	15	12	27	10	5	15	156	90	246	84	69	153		
12.	Kottayam	5	2	7	2		2	300	179	479	143	106	249		
13.	Palai	12	11	23				180	106	286	39	16	55		
14.	Vaikom	5	4	9				116	88	204	35	53	88		
15.	Muvattupuzha	6	6	12				159	196	355	52	45	97		
16.	Kochi Corporation	190	153	343	75	69	144	2883	1452	4335	1438	891	2329	11	6
17.	Aluva	18	18	36	1		1	262	127	389	70	42	112		

Table V - Vital events registered during the year 1990 (Contd....)

S.No	Municipality/ Corporation	Infant Death						Other Deaths						Maternal Deaths	
		Total Events			Events to normal residents			Total Events			Events to normal residents			Total	Events to normal residents
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total		
1	2	15	16	17	18	19	20	21	22	23	24	25	26	27	28
18.	N.Paravur	9	10	19		1	1	204	100	304	95	53	148		
19.	Perumbavoor	18	8	26	1	1	2	171	96	267	11	1	2		
20.	Irinjalakuda	5	1	6				109	74	183	54	43	97		
21.	Kodungallur	24	11	35	1	1	1	190	109	299	93	69	162		
22.	Chalakudy	13	6	19	3	2	5	184	97	281	98	67	165		
23.	Thrissur	154	131	285	6	3	9	1015	857	1872	146	129	275		
24.	Guruvayur Township	5	3	8	1	1	1	104	63	167	55	41	96		
25.	Kunnamkulam	15	15	30				172	97	269	53	45	98		
26.	Palakkad	95	79	174	11	9	20	838	542	1380	306	262	568	1	
27.	Chittoor- Thathamangalam	7	12	19	1	2	3	165	158	323	112	101	213		
28.	Thirur	47	43	90		1	1	216	143	359	70	74	144		
29.	Malappuram	22	16	38				186	113	299	74	61	135		
30.	Kozhikode Corporation	543	422	965	245	185	430	4198	2342	6540	2323	1343	3666	16	3
31.	Vadakara	25	29	54	4	9	13	303	177	480	152	102	254		
32.	Thalasserry	32	31	63	22	24	46	617	524	1141	493	351	844		
33.	Kannur	32	18	50	8	5	13	252	169	421	79	54	133		
34.	Kasaragod	44	28	72	3	7	10	213	145	358	101	65	166		

Table VI - Deaths according to cause 1990

Sl no	Municipality/ Corporation	T.B	Rhum atism	Chole ra	Tetan us	Pnuem onia	Small pox	Dyse ntry	Respir atory Diseas es	Enteri fever	Rabies	Dipht heria	Cancer	Gastr Enteri tics	Heart Failure	Pulmi nory Disea	Others	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1.	Neyyattinkara							2	11				3				233	249
2.	Thiruvananthapuram	106						220		87			389	174	2937		4866	8779
3.	Attingal	2	6					1					4		30		75	118
4.	Kollam							15		1	4		34		136	121	1484	1795
5.	Punalur			2						10			8			59	123	202
6.	Kayamkulam	7	35			2			26	4			18		95	3	189	379
7.	Mavelikara								44				17		125		165	351
8.	Alappuzha				3					2	1		44			112	1803	1965
9.	Cherthala							1					10			55	458	524
10.	Thiruvalla							1		10	2		20			37	715	785
11.	Changanacherry	1						1	13	7			12			9	230	273
12.	Kottayam							1		1	8			1		38	437	486
13.	Palai								24				8		35	27	215	309
14.	Vaikom							3					7		46	39	118	213
15.	Muvattupuzha									5					42		213	267
16.	Kochi Corporation	178						3		1	5		363	26	917		3196	4689
17.	Aluva												10		21	20	374	425

Table VI - Deaths according to cause 1990 (Contd...)

Sl no	Municipality/ Corporation	T.B	Rhum atism	Chole ra	Tetan us	Pnuem onia	Small pox	Dyse ntry	Respi ratory Disea ses	Enteri fever	Rabies	Dipht heria	Cancer	Gastr Enteri tics	Heart Failure	Pulmi nory Disea se	Others	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
18.	N.Paravur							1					8		183		131	323	
19.	Perumbavoor							5					11				277	293	
20.	Irinjalakuda									3			7			4	175	189	
21.	Kodungallur									2			13			39	280	334	
22.	Chalakudy								33	4	4		15		57	20	178	307	
23.	Thrissur							5	96	6			119		300		1633	2157	
24.	Guruvayur township								20	2			4		19	4	122	175	
25.	Kunnamkulam												5		16	11	265	299	
26.	Palakkad							17	144	1	1	1	38		328		1025	1555	
27.	Chittoor- Thathamangalam												9			9	324	342	
28.	Thirur	9															45	296	449
29.	Malappuram			1				2					17			22	295	337	
30.	Kozhikode Corpo.	225		2				35		1			405				6853	7521	
31.	Vadakara												10	3		78	443	534	
32.	Thalasserry							67		26			53			102	956	1204	
33.	Kannur									7			14			67	383	471	
34.	Kasaragod							1					8			124	297	430	

Table VII - Results of Spot Check

Sl. No.	Municipality/ Corporation	No. of wards selected	Total no. of House holds	No. of House holds visited	No. of events to normal residents detected								
					Live Births			Infant Deaths			Other deaths		
					Enume rated	Regist ered	occured outside	Enume rated	Regist ered	occured outside	Enume rated	Regist ered	occured outside
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Neyyattinkara	15	6670	6915	247	105	121	41	30		41	30	10
2.	Thiruvananthapuram	15	28863	20208	929	839	84				385	370	9
3.	Attingal	15	4783	4783	290	83	205				67	45	18
4.	Kollam	18	14896	13510	1100	948	152	5	5		179	160	16
5.	Punalur	15	6857	6857	283	185	97				70	50	18
6.	Kayamkulam	15	5409	5409	329	220	109				81	73	6
7.	Mavelikara	15	4332	4332	252	173	79				109	96	13
8.	Alappuzha	18	15201	15201	1241	1038	203	19	17	2	328	314	14
9.	Cherthala	15	7064	7064	304	168	136	3		3	118	83	23
10.	Thiruvalla	15	6312	6282	223	130	1	92	1	1	50	44	6
11.	Changanacherry	15	3598	3598	177	103	74	8	8		89	61	28
12.	Kottayam	15	4629	4629	224	105	119	4	1	3	95	75	19
13.	Palai	15	3906	3050	92	92	55				38	33	8
14.	Vaikom	15	3974	3144	44	43	133			2	67	63	18
15.	Muvattupuzha	15	4272	4272	344	193	150	1		1	88	73	14
16.	Kochi Corporation	15	24404	24404	1995	1536	459	9	7	2	585	454	131
17.	Aluva	15	3479	3479	214	103	111				77	57	6

Table VII - Results of Spot Check (Contd....)

Sl. No.	Municipality/ Corporation	No. of wards selected	Total no. of House holds	No. of House holds visited	No. of events to normal residents detected											
					Live Births					Infant Deaths					Other deaths	
					Enume rated	Regist ered	occur ed outside	Enume rated	Regist ered	occur ed outside	Enume rated	Regist ered	occur ed outside	Enume rated	Regist ered	occur ed outside
1	2	3	4	5	6	7	8	9	10	11	12	13	14			
18.	N.Paravur	15	4081	4081	324	156	168	2		1	1	1	23			
19.	Perumbavoor	15	3615	3615	182	98	84				59	46	13			
20.	Irinjalakuda	15	3884	3884	293	49	244	119	78	41	2		2			
21.	Kodungallur	15	4518	4518	317	198	119	118	87	31						
22.	Chalakudy	15	4681	4505	320	175	145	2	2		129	70	59			
23.	Thrissur	15	6556	6556	529	443	86	6	6		156	112	44			
24.	Guruvayur township	15	3491	3491	240	62	178	1	1		147	96	51			
25.	Kunnamkulam	15	307	307	238	59	179				127	89	38			
26.	Palakkad	15	8191	8191	682	450	232	9	9		183	162	21			
27.	Chittoor- Thathamangalam	15	3477	3477	230	85	145				138	98	40			
28.	Thirur	15	3497	3497	195	162	33	1	1	1	52	52	9			
29.	Malappuram	15	4586	4586	583	374	209	1	1	1	91	82				
30.	Kozhikode Corpo.	15	20416	20416	1284	1114	170	1	1		422	366	56			
31.	Vadakara	15	5135	5135	737	494	243	12	2	10	157	100	57			
32.	Thalassery	15	4354	4354	318	273	45	105	93	12						
33.	Kannur	15	9609	4540	350	220	130				56	30	26			
34.	Kasaragod	15	4803	3768	393	340	39				46	44	2			

Table VIII - Under Registration and Occurance of Outside events

Sl. No.	Municipality/ Corporation	% of under registration		% of outside registration	
		Births	Deaths	Births	Deaths
1	2	3	4	5	6
1.	Neyyattinkara	16.67	3.23	48.99	24.39
2.	Thiruvananthapuram	0.71	2.12	9.04	1.82
3.	Attingal	2.35	8.16	70.69	26.87
4.	Kollam		1.79	13.82	8.72
5.	Punalur	0.54	3.85	34.28	25.71
6.	Kayamkulam		2.67	33.13	7.41
7.	Mavelikara			31.35	11.93
8.	Alappuzha	0.29	2.11	16.36	4.61
9.	Cherthala		12.63	44.74	21.49
10.	Thiruvalla	0.76	2.17	41.26	9.80
11.	Changanacherry			41.81	28.87
12.	Kottayam		1.30	53.13	22.22
13.	Palai		13.16	37.41	17.39
14.	Vaikom	2.27	5.97	75.00	19.28
15.	Muvattupuzha	0.52	1.35	43.60	16.85
16.	Kochi Corporation	6.74	20.38	17.44	2.53
17.	Aluva		9.52	51.87	18.18
18.	N.Paravur	0.64	15.45	51.54	17.91
19.	Perumbavoor		8.00	46.15	15.25
20.	Irrinjalakuda	2.00	10.34	82.93	28.10
21.	Kodungallur		16.35	37.54	11.86
22.	Chalakydy		33.94	45.31	16.79
23.	Thrissur	8.66	20.81	8.32	8.02
24.	Guruvayur township		13.39	74.16	24.32
25.	Kunnamkulam		17.59	75.21	14.96
26.	Palakkad	1.10	2.34	33.28	10.94
27.	Chittoor- Thathamangalam	3.41		61.74	28.99
28.	Thirur			16.92	
29.	Malappuram	2.60	3.53	34.13	7.61
30.	Kozhikode Corpo.	0.18	9.85	13.08	3.79
31.	Vadakara	1.79	18.40	31.75	26.04
32.	Thalasserry			14.15	11.42
33.	Kannur	2.65	16.67	35.42	35.71
34.	Kasaragod	4.49	3.08	10.26	5.80

Table IX - Registered Vital Rates and Adjusted Residential Vital rates 1990

Sl. No.	Municipality/ Corporation	Registered vital rates		Adjusted residential vital rates	
		Births	Deaths	Births	Deaths
1	2	3	4	5	6
1.	Neyyattinkara	13.39	3.70	31.48	5.05
2.	Thiruvananthapuram	27.98	3.87	30.98	4.02
3.	Attingal	10.05	2.87	35.11	4.28
4.	Kollam	18.46	5.42	21.42	6.05
5.	Punalur	14.57	4.06	14.57	4.22
6.	Kayamkulam	11.78	3.99	11.78	4.10
7.	Mavelikara	11.85	5.64	11.85	5.64
8.	Alappuzha	14.92	4.83	17.84	5.06
9.	Cherthala	10.02	5.01	10.02	5.73
10.	Thiruvalla	12.97	4.31	13.07	4.89
11.	Changanacherry	12.25	3.21	21.05	4.51
12.	Kottayam	8.84	3.97	18.86	5.16
13.	Palai	7.41	2.51	11.84	3.50
14.	Vaikom	6.68	4.05	27.36	5.34
15.	Muvattupuzha	8.60	3.54	15.32	4.32
16.	Kochi Corporation	13.06	4.42	16.96	5.69
17.	Aluva	8.26	4.56	17.16	6.16
18.	N.Paravur	8.02	5.32	16.65	7.66
19.	Perumbavoor	6.76	2.65	12.55	3.40
20.	Irrinjalakuda	2.88	3.54	17.22	5.49
21.	Kodungallur	9.88	5.25	15.82	7.13
22.	Chalakydy	8.21	3.79	15.01	6.90
23.	Thrissur	13.86	3.80	16.55	5.22
24.	Guruvayur township	3.09	4.79	11.96	7.31
25.	Kunnamkulam	3.61	4.99	14.56	7.13
26.	Palakkad	13.36	4.80	20.25	5.52
27.	Chittoor- Thathamangalam	13.81	6.76	37.38	9.52
28.	Thirur	6.78	2.95	8.16	2.95
29.	Malappuram	13.09	2.76	20.40	3.13
30.	Kozhikode Corpo.	25.80	9.80	29.74	11.30
31.	Vadakara	14.01	3.72	20.89	6.19
32.	Thalasserry	36.17	8.62	42.13	9.73
33.	Kannur	11.83	2.25	18.81	4.20
34.	Kasaragod	22.47	3.55	26.22	3.89

Table X - Adjusted Residential Vital Rates from 1985 (Contd....)

Sl. No.	Municipality/ Corporation	Birth rate								Death Rate							
		1985	1986	1987	1988	1989	1990	1985	1986	1987	1988	1989	1990				
1	2	3	4	5	6	7	8	9	10	11	12	13	14				
18.	N.Paravur	24.08	27.22	17.06	16.89	14.92	16.65	6.26	6.51	8.70	7.36	8.05	7.66				
19.	Perumbavoor	26.13	18.06	19.82	21.66	20.63	12.55	5.54	5.64	5.12	5.09	4.60	3.40				
20.	Irinjalakuda	35.33	22.61	27.46	17.94	17.91	17.22	7.73	5.55	7.65	8.50	6.56	5.49				
21.	Kodungallur	21.83	18.38	18.71	21.52	21.39	15.82	5.08	5.26	7.32	6.62	6.70	7.13				
22.	Chalakudy	17.99	17.62	16.44	18.49	19.75	15.01	5.46	5.12	6.00	4.60	5.75	6.90				
23.	Thrissur	23.07	21.70	24.03	26.00	26.74	16.55	5.36	4.31	4.85	5.43	4.75	5.22				
24.	Guruvayur township	15.24	14.30	14.81	11.64	13.44	11.96	6.01	6.56	6.13	7.04	6.21	7.31				
25.	Kunnankulam	19.03	16.97	13.18	13.75	13.88	14.56	6.34	7.95	6.62	6.54	6.57	7.13				
26.	Palakkad	31.45	29.96	27.37	25.76	25.57	20.25	6.16	6.63	6.21	5.94	5.94	5.23				
27.	Chittoor- Thathamangalam	24.22	28.54	31.85	30.09	30.23	37.38	7.69	8.22	6.95	7.97	5.77	9.52				
28.	Thirur	16.39	14.09	11.79	11.06	12.40	8.16	3.23	3.07	2.81	3.43	3.44	2.95				
29.	Malappuram	21.72	22.92	21.63	18.40	16.69	20.40	3.78	3.76	3.89	3.05	2.57	3.13				
30.	Kozhikode Corpo.	30.40	27.21	22.22	29.37	29.25	29.74	8.57	8.83	8.23	8.57	8.43	11.30				
31.	Vadakara	24.80	22.87	21.68	22.98	21.07	20.89	6.48	6.20	6.39	6.38	6.79	6.19				
32.	Thalassery	44.50	39.75	44.80	49.40	49.06	42.13	4.10	3.28	3.57	3.99	4.05	9.73				
33.	Kannur	25.22	20.61	22.98	28.25	28.23	18.81	4.87	5.90	10.75	9.47	5.51	4.20				
34.	Kasaragod	39.55	45.55	45.95	25.11	24.07	26.22	4.03	4.30	4.22	3.79	3.74	3.89				

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