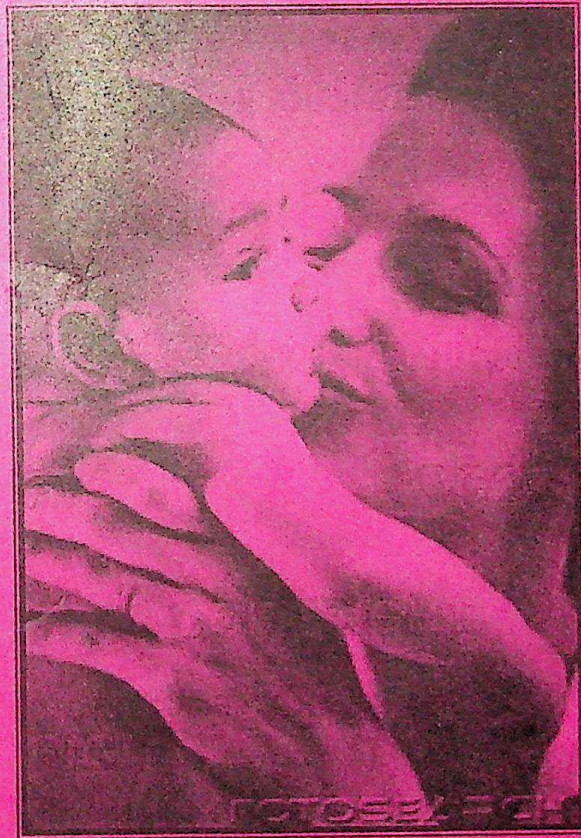


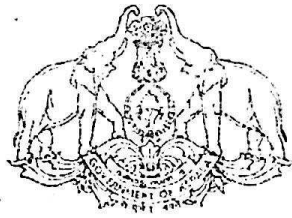
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GOVERNMENT OF KERALA



RESIDENTIAL VITAL RATES
2005

Directorate of Economics & Statistics
Thiruvananthapuram
2008



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PREFACE

This report presents the adjusted vital rates of births and deaths of the selected Municipalities and Corporations for the year 2005. The rates have been estimated from the registered births and deaths of the normal residents after making adjustments for under registration and for the same occurring outside the Municipal/Corporation areas, using the results of spot check survey conducted in the above places. Details of twenty-nine Municipalities and five Corporations are included in this report. The vital statistics unit of the Department of Economics and Statistics has prepared the report under the supervision of Sri. D Rajan, Additional Director, Smt. Leelamony.S, Deputy Director Smt. Shylamma, Assistant Director and Smt. M.Kannambal, Research Assistant have contributed substantially in bringing out the report.

**Thiruvananthapuram,
Date: 10 - 03 - 2008**

**M.R.Balakrishnan
DIRECTOR**



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ANNUAL RESIDENTIAL VITAL RATES 2005

Introduction

The Civil Registration System was introduced in India under the Births and Deaths Registration Act chartered by parliament in 1969. The Act stipulates that every event should be registered in the respective registration units (local self Government) based on the place of occurrence. As per the existing rule every event should be registered within 21 days from the date of its occurrence. Even though the Act stipulates both fine and punishment, non-registration of events exists to a certain extent. In order to ward off such inaccuracies, a corrective measure is devised viz the spot-check survey. More over the Act stipulates that registration is to be done out in the place of occurrence of the event. This may not provide a true picture. The present set up of spot check survey is to tide over that.

One of the important classifications in population data is the rural-urban breakup. In Kerala the number of vital events happening in urban areas is always higher than that in the rural areas. It shows that the rate of registration of vital events in urban areas is always higher than that in the rural area. Modern health facilities are generally available in the urban areas. Rural people, because of their knowledge on health activities and access to such facilities usually resort to urban areas to avail such facilities. Usually the under registration in rural areas is higher than that in urban areas especially in the case of deaths. This is because, most of the deaths in rural areas happened in the house and the people are not interested to register deaths due to the unawareness about the importance of registration. Another important fact is that both rural and urban population tends to hide incidence of suicide and illicit termination of pregnancy. Similarly, there exists gross under registration of vital events such as Infant deaths and Stillbirths in the State.

Objectives of the survey

The main objectives of the survey are furnished below:

1. To estimate the extent of under registration of vital events in the selected Municipalities/Corporations and to work out the actual vital rates in these areas.
2. To estimate the residential vital rates of these Municipalities/Corporations
- 3 To find out the major diseases that lead to deaths in the selected urban areas of the state

Coverage of the survey

The scheme is designed to strengthen the Vital Statistics in the selected Municipalities and corporations. It is implemented in five Corporations and twenty-nine Municipalities in the State. The list of Municipalities / Corporations and the statistical staff working in these centres are given below:

Sl.No.	Name of Municipalities / Corporation	Statistical Staff		
		UD Compiler	Research Assistant	Total
1	Neyyattinkara (M)	1	0	1
2	Thiruvananthapuram (C)	2	1	3
3	Attingal (M)	1	0	1
4	Kollam (C)	2	1	3
5	Punalur (M)	1	0	1
6	Kayamkulam (M)	1	0	1
7	Mavelikara (M)	1	0	1
8	Alappuzha (M)	2	1	3
9	Cherthala (M)	1	0	1
10	Thiruvalla (M)	1	0	1
11	Changanassery (M)	1	0	1
12	Kottayam (M)	1	0	1
13	Pala (M)	1	0	1

14	Vaikom (M)	1	0	1
15	Muvattupuzha (M)	1	0	1
16	Kochi (C)	2	1	3
17	Aluva (M)	1	0	1
18	North Paroor (M)	1	0	1
19	Perumbavur (M)	1	0	1
20	Irinjalakuda (M)	1	0	1
21	Kodungallur (M)	1	0	1
22	Chalakydy (M)	1	0	1
23	Thrissur (C)	1	0	1
24	Guruvayur (M)	1	0	1
25	Kunnamkulam (M)	1	0	1
26	Palakkad (M)	1	0	1
27	Chittoor –Thathamangalam (M)	1	0	1
28	Thirur (M)	1	0	1
29	Malappuram (M)	1	0	1
30	Kozhikode (C)	2	1	3
31	Vadakara (M)	1	0	1
32	Thalassery (M)	1	0	1
33	Kannur (M)	1	0	1
34	Kasaragod (M)	1	0	1

The fieldwork pertaining to the survey was carried out in all centers. For conducting fieldwork of the survey fifteen wards have been randomly selected from each unit except Alappuzha Municipality. 25 wards have been selected from Alappuzha Municipality. The statistical staff posted in the Municipalities/Corporations have visited all houses of the selected wards and collected the required data in the prescribed schedules.

Limitations of the survey

Since the survey is implemented only in the urban areas, extent of under registration in the rural areas cannot be estimated. This is a striking limitation of the survey. One of the main objectives of the survey is to find out the under registration of vital events. However, the data derived from the survey is partial. In order to obtain a total picture of the rate of under-registration in urban areas, the remaining urban areas of the state should also be brought under the purview of the survey. If this survey is extended to rural areas, a comparative study between urban and rural level of under registration could also be made possible. Similarly the State level under registration can be estimated only if this survey is further extended to rural areas and the remaining Municipalities of the State.

Analysis and Findings of the Survey

The estimated midyear population of the selected Municipalities and Corporations are given in table I. It is obvious from the table that the population of all Municipalities/Corporations shows an increasing trend. Out of 34 selected centers, the highest midyear population is recorded in Thiruvananthapuram Corporation and the lowest in Guruvayur municipality.

The number of Educational Institutions both in the Government and private sector existing in the selected municipalities/corporations are presented in table 2. Among all centers, Thiruvananthapuram corporation has maximum number of institutions in almost all categories namely, primary, upper primary, high schools, colleges etc. The total number of institutions in Thiruvananthapuram Corporation is 245. It is followed by Cochin Corporation with 229 numbers. In the case of municipalities, the highest number of institution 90 is recorded Thalassery municipality. Guruvayoor Municipality have only 8 Educational Institutions. Cochin Corporation stood first pertaining to the number of Technical institutions in private sector.

Details of Medical Institutions in the public and private sector existing in the selected Municipalities/Corporations are presented in table 3. Number of hospitals in the private sector is higher than those in the Government sector. Among all centers, Thiruvananthapuram Corporation has the highest number of Government hospitals 19, followed by Cochin Corporation with 18. In the case of Municipalities Alappuzha has the highest number of Government hospitals. Considering the bed strength in Government hospitals Thiruvananthapuram Corporation stood first with 7077 numbers followed by Kozhikkode Corporation with 4008. In the case of private hospitals the maximum number of hospitals 68 is recorded in Cochin Corporation followed by Thiruvananthapuram with 53.

Considering Government dispensaries and other institutions it is highest in Thiruvananthapuram Corporation with 21 followed by Kozhikkode Corporation with 17. Considering the strength of private dispensaries and other institutions, Alappuzha municipality stood first with 127 followed by Kozhikkode Corporation and Vadakara municipality with 99 and 97 respectively.

The number of maternity and child health centers in public sector was highest in Kochi Corporation with 14 followed by 13 in Kollam Corporation. In private sector such facilities do not exist anywhere else in the entire state except in Thiruvananthapuram and Kollam Corporation and Attingal Municipality.

In table 4 the details regarding the number of registration units, area and population of the selected centers are furnished. Thiruvananthapuram Corporation has the largest area 141.71 sq. km among the corporation followed by Kochi Corporation with 94.88 sq. km. When municipalities are taken into consideration Alappuzha covers the largest area 46.77 sq. km followed by Punalur municipality with 34.60 sq. km. Considering the density of population the highest is recorded in Kollam Corporation, i.e. 6512 /sq. km. followed by Kochi Corporation with 6424/sq.km. In the case of Municipality, it is the highest in Kannur, 5967/sq. km. and lowest is in Punalur Municipality ,1377/sq.km.

The details regarding number of Burial Grounds and Cremation Grounds are presented in table 5. This reveals that Cochin Corporation stood first with 8 municipal burial grounds followed by Palakkad municipality and Thiruvananthapuram Corporation. Cochin Corporation has the highest number of private burial grounds , 40 followed by Kollam Corporation with 37. Vaikom and Chittoor Thathamangalam Municipality have no burial grounds both in private and public sector. Cherthala, Kodungallur and Kasaragode municipality have only private burial grounds.

Table 6 furnishes the total number of vital events and the number of vital events of the usual residents registered in their respective centers. During the year under report 39966 live births were registered in Kozhikkode Corporation which is the highest among all the centers. Out of which 6219 (15.56%) events were pertaining to the usual residents. Thiruvananthapuram Corporation stood in the second place with 38800 live births of which 22.96 % were of the usual residents. In the case of municipalities the highest number 13727 was recorded in Palakkad and the lowest 344 in Chittoor Thathamangalam municipality.

The highest number of stillbirths 802 was registered in Thiruvananthapuram Corporation. In Thruvananthapuram Corpn no still birth were reported to normal residence. Kozhikkode Corporation stood in the second place with 597 of which 87 events were pertaining to the usual residents..

In the case of infant deaths, the highest number 1068 was recorded in Kozhikkode Corporation of which 632 are male and 436 are female. Infant death corresponds to normal residents were 317. Thiruvananthapuram Corporation stood at the second place with 743 numbers. In the case of Municipalities the highest 142 was registered in Palakkad municipality. The table reveals that no infant death was registered in Attingal, Cherthala, and Chittoor Thathamangalam municipalities during the year under report

9317 deaths were registered in Kozhikkode Corporation which is the highest in the state followed by Kochi Corporation with 7345. In the case of municipality it was the highest in Alappuzha, 2234 and the lowest 128 in Guruvayoor municipality.

Table 7 reveals that the major causes of death were heart failure, cancer, respiratory disease, Denki/Weils diseases, tuberculosis and others. Denki/Weils disease were reported from Thiruvananthapuram and Kollam Corporation only. No specific causes of death have been reported from 7 municipalities.

The results of spot check survey of the selected registration units presented in table 8. The data reveals that all live births except one case in Chittoor Thathamangalam municipality and two case in Malappuram municipality were registered in the respective registration units.

In the case of deaths, out of 4681 deaths enumerated, 85 were not registered. From the table it can be seen that the highest number of deaths 376 is enumerated from Kozhikkode Corporation. The survey results shows that most of the deaths were occurred within the unit.

Table 9 gives the percentage of under registration and the percentage of outside events in the selected units. With regarding to the registration of births, cent percent was recorded in all most all centers except in Chittoor Thathamangalam and Malappuram municipalities. In the case of deaths, cent percent registration was reported from 18 centers and under registration from the remaining centers. The highest percentage of under registration of death 17.31% was reported from Punalur municipality and the lowest 0.53% in Alappuzha municipality

The data reveals that the highest percentage of outside registration of births 90.90% was in Guruvayur Municipality, and the owest in Thiruvananthapuram Corporation 6.30%. In the case of deaths, the highest percentage 53.85% was recorded in Kottayam municipality followed by Aluva municipality with 49.41% and lowest 1.30% in Thiruvananthapuram Corporation

The registered vital rates and Adjusted Residential vital rates in the Municipalities and Corporations are presented in table 10.

From the data It can be seen that highest birth rate 32.28 is recorded in Palakkad municipality followed by Thallassery municipality with 27.88 and the lowest in Guruvayoor with 1.01. In terms of registered death rate, it is the highest in

Cochin Corporation 8.12 followed by Thiruvalla municipality with 6.99 and the lowest in Malappuram municipality 1.73.

The data reveals that in the case of the adjusted residential vital rates of births highest rate 82.32 is reported from Kodungallur municipality followed by Palakkad Municipality with 36.09 and the lowest 6.30 in Kottayam municipality. As regards death the adjusted residential vital rates is highest in Kodungallur Municipality 89.57 followed by Kochi Corporation with 8.51 and the lowest 2.03 is in Malappuram municipality.

Executive Summary

The survey result reveals that under registration of birth events and death events still exists in the urban areas of the State. Hence cent percentage registration could not be achieved during the year under report also. Lack of awareness about the need and importance of registration of events may be the reasons for the same. Spot-check Survey helps to find out the unregistered events and thereby the concerned authorities can take necessary steps to minimize the extent of under registration.

Table 1 - Estimated Mid-year Population of Municipalities and Corporations from 2002 to 2005 (as on 1st July)

Sl. No.	Municipality/ Corporation	2001 Census Population	2002	2003	2004	2005
1	Neyyattinkara	69467	70362	71041	71726	72418
2	Thiruvananthapuram Corporation	744983	754576	761852	769198	776615
3	Attingal	35693	36122	36447	36775	37106
4	Kollam Corporation	361560	365047	367684	370340	373016
5	Punalur	47235	47364	47461	47558	47655
6	Kayamkulam	68585	68778	68923	69068	69214
7	Mavelikkara	28439	28458	28472	28486	28500
8	Alappuzha	177029	177346	177584	177822	178061
9	Cherthala	45105	45348	45531	45715	45900
10	Thiruvalla	56837	57117	57328	57540	57752
11	Changanacherry	51967	52468	52847	53229	53613
12	Kottayam	60728	61311	61752	62196	62643
13	Palai	22640	22858	23023	23189	23356
14	Vaikom	22641	22859	23024	23190	23357
15	Muvattupuzha	29246	29473	29644	29816	29989
16	Kochi Corporation	595575	599835	603050	606282	609532
17	Aluva	24110	24420	24655	24892	25132

Table 1 Contd.

Sl. No.	Municipality/ Corporation	2001 Census Population	2002	2003	2004	2005
18	North Parur	30059	30358	30584	30812	31042
19	Perumbavoor	26547	26808	27005	27204	27404
20	Irinjalakkuda	28873	29063	29206	29350	29495
21	Kodungallur	33539	33857	34097	34339	34583
22	Chalakkudy	48380	48840	49188	49538	49891
23	Thrissur corpn.	317526	321101	323809	326539	329292
24	Guruvayoor	21186	21319	21419	21520	21621
25	Kunnamkulam	51592	52173	52613	53057	53504
26	Palakkad	130767	131798	132577	133360	134148
27	Chittoor-Thathamangalam	31886	32296	32607	32921	33238
28	Thirur	53654	54241	54685	55133	55585
29	Malappuram	58491	59777	60760	61759	62775
30	Kozhikkode Corpn.	436556	438838	440557	442283	444016
31	Vadakara	75847	76314	76666	77020	77375
32	Thalassery	99387	100989	102207	103440	104688
33	Kannur	63797	64412	64877	65345	65817
34	Kasaragod	52634	52978	53237	53498	53760

Table-2, Number Of Educational Institutions-2005

S.No	Municipality/Corporation	Lower Primary School			Upper Primary Schools			High School/			HSS/MHSC			Colleges			Technical Institutions			Grand Total	
		Govt	Pvt	Total	Govt	Pvt	Total	Govt	Pvt	Total	Govt	Pvt	Total	Govt	Pvt	Total	Govt	Pvt	Total		
1	2	3	4	5	6	7	8	9												18	
1	Neyyattinkara	5	7	12	4	3	7	4	3	7	4	3	7	1		1		1	2	3	37
2	Thiruvananthapuram	42	19	61	24	14	38	30	33	63	18	18	36	5	4	9	11	27	38	245	
3	Attingal	4	4	8	3	4	7	3	4	7	3	4	7	3		3	2		2	34	
4	Kollam Corpn.	7	33	40	4	12	16	11	13	24	10	12	22	1	9	10	9	45	54	166	
5	Punalur	7	6	13	2	4	6	1	6	7	1	6	7		1	1	1	10	11	45	
6	Kayamkulam	7	9	16	3	5	8	3	9	12	3	6	9	1	2	3	1	4	5	53	
7	Mavelikkara	2	7	9	2	4	6	2	6	8	3	3	6	2	1	3	3	6	9	41	
8	Alappuzha	8	14	22	3	3	6	4	16	20	4	8	12		5	5	1	16	17	82	
9	Cherthala	3	1	4	1	3	4	5	2	7	5	2	7	1	1	2	1	19	20	44	
10	Thiruvalla	4	15	19	4	6	10	2	9	11	2	6	8		2	2				50	
11	Changanassery	7	12	19	3	7	10	2	6	8	1	5	6		4	4		2	2	49	
12	Kottayam	2	17	19	3	2	5	2	12	14	2	9	11		4	4	2	4	6	59	
13	Palai	2	3	5		3	3	1	4	5	1	4	5		2	2	1	2	3	23	
14	Vaikom	3	7	10	2	6	8	3	4	7	2	3	5				1	1	2	32	
15	Muvattupuzha	2	8	10	3	4	7	3	6	9	3	3	6	1	1	2	1		1	35	
16	Kochi Corppn	5	55	60	6	22	28	16	14	30	9	18	27	2	8	10	2	72	74	229	
17	Aluva	3	5	8		3	3	2	5	7	2	4	6		2	2				26	

Table-2 Contd

Sl.No	Municipality/Corporation	Primary School			Upper Primary Schools			High School/			HSSMHSC			Colleges			Other Institutions			Grand Total
		Govt	Pvt.	Total	Govt	Pvt.	Total	Govt	Pvt.	Total	Govt	Pvt.	Total	Govt	Pvt.	Total	Govt	Pvt.	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
18	North Parur	6	6	12	1	2	3	2	6	8	2	6	8		3	3		8	8	42
19	Perubavur	3	7	10		1	1	3	3	6	3	3	6		1	1				24
20	Minjalakuda	2	14	16	2	11	13	4	7	11	4	7	11		10	10	1	7	8	69
21	Kodugallur	3	4	7		1	1	2		2					1	1				20
22	Chalakkudy	3	2	5		1	1	3	3	6	1	1	2		4	5	2	2	4	22
23	Thrissur Corpn.	4	37	41	4	9	13	9	32	41	7	14	21	5	14	19	5	13	18	153
24	Guruvayoor				1	1	2	1	2	3	1	1	2		1	1				8
25	Kunnamkulam	1	11	12	1	3	4	2	6	8	3	2	5		1	1				35
26	Palakkad	13	9	22	6	8	14	3	1	4	3	1	4		2	3				47
27	Chittur-Thathamangalam	3	2	5	3	3	6	5	3	8	5	1	6		1	1				27
28	Thirur	3	17	20	1	8	9	2	5	7	2	1	3		2	2	3	7	10	51
29	Malappuram	5	9	14	1	3	4	2	7	9	2	4	6	3	8	11	1	4	5	49
30	Kozhikode-Corpn.	23	36	59	15	26	41	10	21	31	10	20	31	5	10	15	6	5	11	188
31	Vadakara		27	27		11	11	3	4	7	2	2	4	2	1	3	2			54
32	Thalassery	4	27	31	3	16	19	6	5	11	6	2	8	1	20	21				90
33	Kannur	4	2	6	6	5	11	4	3	7	3	2	5				3			32
34	Kasaragod	6	6	12	4	4	8	3	1	4	2	1	3	2		2	1		1	30

Table 3 - Number of Hospitals and other Institutions 2005

Sl. No.	Municipality/ Corporation	Hospitals						Dispensaries & other Institutions						Maternity & Child Health Center					
		Public			Private			Total			Public			Private			Total		
		No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Neyyattinkara	2	436	10	50	12	486	1	-	12	-	13	-	2	-	-	-	2	-
2	Thiruvananthapuram corpn.	19	7077	53	2130	72	9207	21	-	57	-	78	-	3	-	4	-	7	-
3	Attungal	2	84	8	350	10	434	3	-	23	-	26	-	-	-	3	90	4	90
4	Kollam corpn.	9	1485	32	1874	41	3359	11	-	90	-	101	-	13	-	3	16	16	16
5	Punalur	2	169	13	266	15	435	2	-	18	-	20	-	6	-	-	-	6	-
6	Kayamkulam	4	280	17	600	21	880	-	-	36	-	36	-	-	-	-	-	-	-
7	Manjikkara	2	396	7	423	9	819	-	-	10	-	10	-	-	-	-	-	-	-
8	Alappuzha	8	1780	8	140	16	1920	2	-	127	-	129	-	6	-	-	-	6	-
9	Cherthala	3	286	3	493	6	779	-	-	37	-	37	-	5	-	-	-	5	-
10	Thiruvalla	3	200	6	1250	9	1450	-	-	15	-	15	-	-	-	-	-	-	-
11	Changanacherry	2	214	13	205	15	419	-	-	38	-	38	-	4	-	-	-	4	-
12	Kottayam	5	523	10	715	15	1238	-	-	-	-	0	-	-	-	-	-	-	-
13	Palai	3	341	5	495	8	836	-	-	35	-	35	-	1	-	-	-	1	-
14	Vaikon	1	275	1	52	2	327	1	24	27	-	28	24	1	-	-	-	1	-
15	Muvattupuzha	3	305	11	515	14	820	1	-	38	-	39	-	2	-	-	-	2	-
16	Kozhikode Corpn	18	2012	68	5400	86	7412	6	-	84	-	90	-	14	-	-	-	14	-
17	Aluva	2	237	11	780	13	1017	-	-	34	-	34	-	-	-	-	-	-	-

Table 3 (Contd...)

Sl. No	Municipality/ Corporation	Hospitals						Dispensaries & other Institutions						Maternity & Child Health Centre							
		Public		Private		Total		Public		Private		Total		Public		Private		Total			
		No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	20	20
16	North Parur	3	210	8	436	11	646	2		23		25		2							
17	Perumbavoor	2	238	7	492	9	730	1		26		27		6							
18	Irrinjalakuda	2	266	5	124	7	390	2		15		17		1							
19	Kodungallur	2	176	6	417	8	593			32		32									
20	Chalakudy	1	144	10	718	11	862	2		25		27		3							
21	Thrissur corpn.	6	1244	21	3210	27	4454	8		25		33		4							
22	Guruvayur	1	30	5	184	6	214							1							
23	Kunnamkulam	1	124	5	565	6	689	3				3		5							
24	Palakkad	4	739	21	612	25	1351	4		15		19		4							
25	Chittoor- Thathamangalam	2	128	1	10	3	138			15	6	15	6								
26	Thirur	7	199	10	350	17	549	6				6		3							
27	Malappuram	4	187	5	486	9	673	1		27		28									
28	Kozhikode Corpn.	9	4008	39	2190	48	6198	17		99		116									
29	Vadakara	2	240	14	520	16	760	1		97		98		1							
30	Thalassery	2	556	20	951	22	1507	3		14		17									
31	Kannur	2	12	29	773	31	795	1	16			1	16	1	5						
32	Kasaragod	2	236	11	540	13	776	1		22		23									

Table 4- Registration units with Area and Population 2005

SL no	Municipality \ Corporation	No of Reg units	Area in sq\km	Area Per Reg units	Mid year population	Population per Reg units	Density per Sq km
1	2	5	6	7	8	9	10
1	Neyyattinkara	1	28.78	28.78	72418	72418	2516
2	Thiruvananthapuram	20	141.71	7.09	776615	38830	5480
3	Attingal	1	14.775	14.775	37106	37106	2512
4	Kollam Corporation	1	57.28	57.28	373016	373016	6512
5	Punalur	1	34.60	34.60	47655	47655	1377
6	Kayamkulam	1	21.79	21.79	69214	69214	3176
7	Mavelikara	1	12.65	12.65	28500	28500	2253
8	Alappuzha	2	46.77	23.38	178061	89030	3807
9	Cherthala	1	16.18	16.18	45900	45900	2837
10	Thiruvalla	1	27.52	27.52	57752	57752	2098
11	Changanacherry	1	13.50	13.50	53613	53613	3971
12	Kottayam	2	16.45	8.22	62643	31322	3808
13	Palai	1	16.06	16.06	23356	23356	1454
14	Vaikom	1	8.73	8.73	23357	23357	2675
15	Muvattupuzha	1	13.18	13.18	29989	29989	2275
16	Kochi Corporation	2	94.88	47.43	609532		6424
17	Aluva	1	7.18	7.18	25132	25132	3500
18	North Parur	1	9.02	9.02	31042	31042	3441
19	Perumbavoor	1	13.61	13.61	27404	27404	2014
20	Irinjalakuda	1	11.24	11.24	29495	29495	2624
21	Kodungallur	1	17.40	17.40	34583	34583	1987
22	Chalakydy	1	25.23	25.23	49891	49891	1977
23	Thrissur Corpn				329292	329292	
24	Guruvayoor	1	7.47	7.47	21621	21621	2894
25	Kunnamkulam	1	34.18	34.18	53504	53504	1565
26	Palakkad	1	26.60	26.60	134148	134148	5043
27	Chittoor- Thathamangalam	1	14.71	14.71	33238	33238	2259
28	Thirur	1	16.55	16.55	55585	55585	3358
29	Malappuram	1	33.69	33.69	62775	62775	1863
30	Kozhikode Corpn.	14	84.28	6.02	444016	31715	5270
31	Vadakara	1	21.34	21.34	77375	77375	3626
32	Thalasserry	3	23.98	7.99	104688		4366
33	Kannur	1	11.03	11.03	65817	65817	5967
34	Kasaragod	1	16.69	16.69	53760	53760	3221

Table 5 - Number of Burial Grounds, Cremation Grounds and Civil Registration Units

Sl. No	Municipality/ Corporation	Burial Grounds*			Cremation Grounds			Total no. of 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	37	1
2	Thiruvananthapuram Corpn	4	30	34	1	3	4	81	20
3	Attingal	1	1	2		5	5	24	1
4	Kollam Corpn	2	37	39	2		2	52	1
5	Punalur	1	20	21			0	30	1
6	Kayamkulam	1	14	15	1	2	3	38	1
7	Mavelikara	1	9	10		1	1	23	1
8	Alappuzha	3	2	5		19	19	50	2
9	Cherthala		6	6	1	4	5	28	1
10	Thiruvalla	2		2	1		1	32	1
11	Changanacherry	1	12	13		1	1	32	1
12	Kottayam	1	15	16	1	2	3	38	1
13	Palai	1	7	8	1	1	2	23	1
14	Vaikom			0	1		1	20	1
15	Muvattupuzha	1	8	9			0	25	1
16	Kochi Corporation	8	40	48	5	11	16	66	2
17	Aluva	1	7	8		3	3	21	1
18	North Parur	1	5	6		1	1	23	1
19	Perumbavoor	1	8	9		1	1	21	1
20	Irinjalakuda	1	5	6			0	22	1
21	Kodungallur		2	2	1	1	2	24	1
22	Chalakydy	1	13	14			0	28	1
23	Thrissur Corpn	5	2	7	1		1		
24	Guruvayoor	1	4	5	1	1	2	15	1
25	Kunnamkulam	2	11	13			0	31	1
26	Palakkad	4	7	11	3	1	4	50	1
27	Chittoor-Thathamangalam			0	3		3	21	1
28	Thirur	2		2			0	28	1
29	Malappuram	1	10	11		1	1	24	1
30	Kozhikode Corpn.	2	9	11	5	1	6	39	14
31	Vadakara	1	8	9			0	40	1
32	Thalasserry	1	15	16	1	11	12	50	3
33	Kannur	1	13	14	1		1	38	1
34	Kasaragod		12	12	2	1	3	32	1

*Including Burial Grounds of religious institutions.

Table 6 - Vital events registered during the year 2005

Sl. 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	15	16	17	
1	Neyyattinkara	256	279	535	98	38.28	105	37.63	203	37.94							
2	Thiruvananthapuram	19829	18971	38800	4993	25.18	3915	20.66	8908	22.96	403	399	802				
3	Attingal	671	645	1316	79	11.77	72	11.16	151	11.47	4	2	6	1		1	
4	Kollam Corpn	5331	5151	10482	1994	37.40	1901	36.90	3895	37.15	7	17	24	5	4	9	
5	Punalur	1800	1775	3575	289	16.05	273	15.38	562	15.72	6	12	18	1	2	3	
6	Kayamkulam	2417	2381	4798	445	18.41	428	17.97	873	18.19	7	6	13	2	2	4	
7	Mavelikara	1519	1493	3012	108	7.11	98	6.56	206	6.84							
8	Alappuzha	4747	4496	9243	1071	22.56	1057	23.51	2128	23.02	103	65	168	21	13	34	
9	Cherthala	1469	1567	3036	128	8.71	141	9.00	269	8.86	3	4	7	1	1	2	
10	Thiruvalla	2342	2239	4581	182	7.77	163	7.28	345	7.53	24	17	41	3		3	
11	Changanacherry	913	950	1863	175	19.17	211	22.21	386	20.72	2	2	4				
12	Kottayam	1690	1799	3489	109	6.45	98	5.45	207	5.23	2	4	6				
13	Palai	1447	1372	2819	58	4.01	61	4.45	119	4.22	10	4	14		1	1	
14	Vaikom	640	626	1266	68	10.62	64	10.22	132	10.42							
15	Muvattupuzha	1531	1622	3153	163	10.65	156	9.62	319	10.12							
16	Kochi Corporation	8827	8562	17389	5429	61.50	5217	60.93	10646	61.22	49	54	98	21	32	53	
17	Aluva	2306	2336	4642	81	3.51	80	3.42	161	3.47	6	10	16				

Table 6 - Contd.

Sl. 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	15	16	17	
18	North Parur	1765	1663	3428	111	6.29	111	6.67	222	6.48	4	5	9				
19	Perumbavoor	1306	1272	2578	98	7.50	87	6.84	185	7.18	6	1	7				
20	Irinjalakuda	693	675	1368	48	6.93	50	7.41	98	7.16	2	1	3	1		1	
21	Kodungallur	2738	2761	5499	95	3.47	103	3.73	198	3.60	10	8	18				
22	Guruvayour	1863	1903	3766	210	11.27	217	11.40	427	11.34							
23	Thrissur Corpn	8213	7903	16116	1230	14.98	1200	15.18	2430	15.08	50	52	102	8	7	15	
24	Chalakkudy	240	179	419	9	3.75	13	7.26	22	5.25	10	6	16	1		1	
25	Kunnamkulam	2420	2235	4655	241	9.96	278	12.44	519	11.15	12	6	18				
26	Palakkad	7009	6718	13727	2213	31.57	2118	31.53	4331	31.55	15	13	28	6	5	11	
27	Chittoor-Thathamangalam	171	173	344	18	10.53	21	12.14	39	11.34							
28	Thirur	4025	3749	7774	376	9.34	329	8.78	705	9.07	12	6	18				
29	Malappuram	3563	3447	7010	232	6.51	214	6.21	446	6.36	30	30	60				
30	Kozhikode Corporation	20654	19312	39966	3785	18.33	2434	12.60	6219	15.56	278	319	597	41	46	87	
31	Vadakara	1515	1467	2982	256	16.90	217	14.79	473	15.86	9	6	15	2	1	3	
32	Thalassery	6554	6138	12692	1493	22.78	1426	23.23	2919	23.00	28	37	65	5	5	10	
33	Kannur	2864	3038	5902	355	12.40	340	11.19	695	11.78	11	6	17	1		1	
34	Kasaragod	4364	4236	8600	464	10.63	398	9.40	862	10.02	40	37	77	5	4	9	

Table 6cont.

Sl. No	Municipality/ Corporation	Infant Death						Other Deaths						Total Death									
		Total Events			Events to normal residents			Total Events			Events to normal residents			Total Events			Events to normal residents						
		Male	Female	Total	Male	Female	Total	Male	Female	Total	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	15	16	17	18	19	20	21	22	23	
1	Neyyattinkara	1		1	1		1	262	236	498	184	170	354	263	236	499	185	70.34	170	72.03	355	71.14	
2	Thiruvananthapuram	414	329	743				7089	4057	11146	2196	1464	3660	7503	4386	11889	2196	29.27	1464	33.38	3660	30.87	
3	Attingal							116	102	218	67	59	126	116	102	218	67	57.76	59	57.84	126	57.80	
4	Kollam Corpn	23	20	43	10	8	18	1516	878	2394	788	516	1304	1539	898	2437	798	51.85	524	58.35	1312	53.84	
5	Punalur	2	1	3				284	153	437	126	96	222	286	154	440	126	44.06	96	62.34	222	50.45	
6	Kayamkulam	3	5	8		2	2	208	120	328	126	95	221	211	125	336	126	59.72	97	77.60	223	66.37	
7	Mavelikara	2	3	5				388	207	595	99	54	153	390	210	600	99	25.38	54	25.71	153	25.50	
8	Alappuzha	68	55	123	11	8	19	1244	859	2103	547	524	1071	1317	917	2234	560	42.52	432	47.11	992	44.40	
9	Cherthala							295	329	624	58	64	122	295	329	624	58	19.66	64	19.45	122	19.55	
10	Thiruvalla	30	18	48		2	2	770	525	1295	207	195	402	800	543	1343	207	25.88	197	36.28	404	30.08	
11	Changanacherry	1	1	2				184	126	310	116	89	205	185	127	312	116	62.70	89	70.08	205	65.71	
12	Kottayam	3	6	9				322	368	690	94	77	171	325	374	699	94	28.92	77	20.59	171	24.46	
13	Palai	7	4	11				418	231	649	68	54	122	425	235	660	68	16.00	54	22.98	122	18.48	
14	Vaikom	2	1	3				151	91	242	25	23	48	153	92	245	25	16.34	23	25.00	48	19.59	
15	Muvattupuzha	4	2	6	1		1	159	183	342	66	59	125	163	185	348	67	41.10	59	31.89	126	36.21	
16	Kochi Corporation	191	174	365	81	51	132	4375	2605	6980	3017	1802	4819	4566	2779	7345	3098	67.85	1853	66.68	4951	67.41	
17	Aluva	3	6	9				358	206	564				361	212	573	43	11.91	42	19.81	85	14.83	

Table 6 - Contd.

Sl. No	Municipality/ Corporation	Infant Death						Other Deaths						Total Death								
		Total Events			Events to normal residents			Total Events			Events to normal residents			Total Events			Events to normal residents					
		Male	Female	Total	Male	Female	Total	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	15	16	17	18	19	20	21	22	23
18	North Parur		1	1				297	202	499	54	45	99	297	203	500	54	18.18	45	22.17	99	19.80
19	Perumbavoor	3	4	7	2	1	3	232	130	362	79	53	132	235	134	369	81	34.47	54	40.30	135	36.59
20	Irinjalakuda	5	4	9	1	1	2	178	110	288	67	69	136	183	114	297	68	37.16	70	61.40	138	46.46
21	Kodungallur	3	3	6	1	1	1	281	222	503	66	48	114	284	225	509	67	23.59	48	21.33	115	22.59
22	Chalakudy	6	6	12		1	1	347	195	542	123	104	227	353	201	554	123	34.84	105	52.24	228	41.16
23	Thrissur Corpn	198	130	328	25	20	45	1961	1199	3160	670	580	1250	2169	1431	3600	695	32.04	609	42.56	304	8.44
24	Guruvayoor	1	1	2				64	62	126	29	35	64	65	63	128	29	44.62	35	55.56	64	50.00
25	Kunnamkulam	10	7	17	3		3	230	188	418	118	113	231	240	195	435	121	50.42	113	57.95	234	53.79
26	Palakkad	79	63	142	21	18	39	1023	683	1706	324	212	536	1102	746	1848	345	31.31	230	30.83	575	31.11
27	Chittoor-Thathamangalam							137	112	249	105	93	198	137	112	249	105	76.64	93	83.04	198	79.52
28	Thirur	16	11	27		2	2	327	230	557	139	89	228	343	241	584	139	40.52	91	37.76	230	39.38
29	Malappuram	10	12	22				216	190	406	58	51	109	226	202	428	58	25.66	51	25.25	109	25.47
30	Kozhikode Corporation.	632	436	1068	16	149	317	5127	3096	8223	1221	932	2153	5759	3558	9317	1389	24.12	1088	30.58	2477	26.59
31	Vadakara	14	11	25	4	3	7	424	342	766	192	163	355	438	354	792	196	44.75	166	46.89	362	45.71
32	Thalassery	47	36	83	7	3	10	969	752	1721	300	284	584	1016	788	1804	307	30.22	287	36.42	594	32.93
33	Kannur	43	24	67	5	3	8	441	245	686	147	122	269	484	270	754	152	31.40	125	46.30	277	36.74
34	Kasaragod	30	19	49	4	3	7	366	283	649	121	92	213	396	302	698	125	31.57	95	31.46	220	31.62

Table 7 - Deaths according to causes 2005

Sl. No	Municipality/ Corporation	Suicide	Accident	Pneumonia	B.P	T.B	Aids	Dia betics	Tetanus	Dysentery & Diarrhoeas	Respiratory Diseases	Enteric fever	Diphtheria	Cancer	Gastro Enteritis	Heart Failure	Pulmonary Diseases	Hydrophobias	Denkii/ Weils diseases	Others	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Neyyattinkkara										103			132						120	499
	Thiruvananthapuram	78	165	237	229	84	5	452	1	5	205	9	1	573		2340			6762	11	146
1.	Attingal							19			22			38		84	1			54	218
2.	Kollam Corpn	85	33	12	22	15		38			95	7		101		1187			842		2437
3.	Punalur																				440
4.	Kayamkulam																				336
5.	Mavelikara																				600
6.	Alappuzha									5		8		376			327			1518	2234
7.	Cherthala																				624
8.	Thiruvalla	23	39					79				3		42		217				940	1343
9.	Changanacherry					16					78	15		58			76			69	312
10.	Kottayam										31			53	12		9			585	699
11.	Palai										3			5		9				71	660
12.	Vaikom	8	8		5	52		5		2		1		15	10	64				70	245
13.	Muvattupuzha															117				231	348
14.	Kochi Corpora.		422		17						597					1890					7345
15.	Aluva				42	10		7			27			9	22	88				368	573

Table 7 (Contd...)

Sl. No	Municipality/ Corporation	Suicide	Accident	Pneumonia	TB	Aids	Diabetics	Tetanus	Dysentery & Diarrhoea	Respiratory Diseases	Enteric fever	Diphtheria	Cancer	Gastro Enteritis	Heart Failure	Pulmonary Diseases	Hydrophobia/Rabies	Denki/Wild diseases	Others	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
18	North Parur													89		292			119		500
19	Perumbavoor													30		128	24		187		369
20	Irinjalakuda																				
21	Kodungallur								1												297
22	Chalakudy	15	20	6					14	25			14	40	8	113	22		202		509
23	Thrissur Corpn.															292			291		554
24	Guruvayoor	21	6	4						10			7	6	45				3298		3590
25	Kunnankulam		9			2	12			28			28		142				28		128
26	Palakkad								7				79		32				1730		1848
27	Chittoor-Thathamangalam	11								8			11		78				141		249
28	Thirur																				
29	Malappuram						23		5		19						8				584
30	Kozhikode Corpn.			132	2	3	1	247	19	10	446	14	1	63		1589	19		6035		428
31	Vadakkara												86								9317
32	Thalassery																		331		792
33	Kannur												21		290						1804
34	Kasaragod					20			28				42						443		754
35	Total																		78		698

Table 8 - Results of Spot Check Survey - 2005

Sl. No	Municipality/ Corporation	No. of wards selected	Total no. of House holds	No. of House holds visited	No. of events detected to normal residents											
					Live Births				Infant Deaths				Other deaths			
					Enume rated	Regis- tered	N.R	occurred outside	Enume rated	Regis- tered	N.R	occurred outside	Enume rated	Regis- tered	N.R	occurred outside
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.	Neyyattinkara	15	7130	8421	335	32		303	2	1		1	156	109		47
2.	Thiruvananthapuram	15	57978	22500	600	562		38					224	221		3
3.	Attingal	15	6977	6977	195	60		135					71	46		25
4.	Kollam Corpn	15	24612	18764	833	695		138					337	277		60
5.	Punalur	15	6051	6051	229	174		55					133	86	18	29
6.	Kayamkulam	15	5177	5177	321	232		89					91	59	5	27
7.	Mavelikkara	15	4440	4440	138	73		65	1	1			100	76	6	18
8.	Alappuzha	25	20707	20707	909	780		129	4	4			411	370	2	39
9.	Cherthala	15	10614	10614	90	56		34					50	43		7
10.	Thiruvalla	15	5830	5830	132	104		28					97	85		12
11.	Changanassery	15	8442	6063	222	99		123	1		1		97	57	2	38
12.	Kottayam	15	5272	5272	149	78		71					104	48		56
13.	Palai	15	5583	3131	128	63		65					89	78		11
14.	Vaikom	15	6804	5089	145	51		94					97	74		23
15.	Muvattupuzha	15	4497	4497	233	124		109					94	56	1	37
16.	Kochi Corporation	15	21492	21492	604	497		107					243	232		11
17.	Aluva	15	4190	4190	232	161		71					127	85		42

Table 8 (Contd....)

Sl. No.	Municipality/ Corporation	No. of wards selected	Total no. of House holds	No. of House holds visited	No. of events detected to normal residents											
					Live Births				Infant Deaths				Other deaths			
					Enume rated	Regi- stered	N.R	Occurred outside	Enume rated	Regi- stered	N.R	occurred outside	Enume rated	Regis- tered	N.R	occurred outside
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
18.	North Parur	15	4842	4842	199	110		89					122	100		22
19.	Perumbavoor	15	4658	4658	220	88		132					115	83	1	31
20.	Irinjalakuda	15	7146	4281	171	50		121					95	73		22
21.	Kodungallur	15	5086	5086	198	163		35					115	103		12
22.	Chalakudy	15	7124	6557	321	208		113	2	1		1	156	128	4	24
23.	Thrissur Corpn*	6	9600	9086	310	280		30	6	6			153	144		9
24.	Guruvayoor	15	3676	3676	176	16		160	1			1	103	49	8	46
25.	Kunnankulam	15	7220	5826	246	107		139	3	3			180	152		28
26.	Palakkad	15	8956	8809	359	321		38	9	9			166	145	1	20
27.	Chittoor- Thathamangalam	15	4953	4953	226	30	1	195					97	69		28
28.	Thirur	15	5247	5247	480	319		161	1	1			100	80	1	19
29.	Malappuram	15	8603	8802	521	446	2	73	2		2		126	109	12	5
30.	Kozhikode Corpn.	15	39396	20576	1039	972		67	2	2			376	351	17	8
31.	Vadakara	15	5421	5421	270	81		189	2			2	121	98	3	20
32.	Thalassery	15	5509	5509	284	261		23					130	116	1	13
33.	Kannur	15	4661	4661	295	181		114	2	1		1	102	71	3	28
34.	Kasaragod	15	5824	5723	125	113		12					56	52		4

* Include results of six wards only

Table 9 - Under Registration and Occurrence 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			90.44	30.37
2	Thiruvananthapuram			6.30	1.30
3	Attingal			69.23	35.21
4	Kollam Corpn			16.57	17.80
5	Punalur		17.31	24.02	21.80
6	Kayamkulam		7.81	27.73	29.67
7	Mavelikara		7.23	47.10	17.82
8	Alappuzha		0.53	14.19	9.40
9	Cherthala			37.77	14.00
10	Thiruvalla			21.21	12.37
11	Changanacherry		5.00	55.41	38.78
12	Kottayam			47.65	53.85
13	Palai			50.78	12.35
14	Vaikom			64.83	23.71
15	Muvattupuzha		1.75	46.78	39.36
16	Kochi Corporation			17.72	4.53
17	Aluva			44.09	49.41
18	North Parur			44.72	18.03
19	Perumbavoor		1.19	60.00	26.95
20	Irinjalakuda			70.76	23.15
21	Kodungallur			17.68	10.43
22	Chalakydy		3.01	35.20	15.82
23	Thrissur Corpn			9.67	5.66
24	Guruvayoor		14.03	90.90	45.19
25	Kunnamkulam			56.50	15.56
26	Palakkad		0.65	10.58	11.43
27	Chittoor- Thathamangalam	3.22		86.28	28.86
28	Thirur		1.21	33.54	18.81
29	Malappuram	0.44	11.38	14.01	3.90
30	Kozhikode Corpn.		4.62	6.45	2.13
31	Vadakara		2.97	70.00	17.88
32	Thalasserry		0.85	8.09	10.00
33	Kannur		4.00	38.64	27.88
34	Kasaragod			9.60	7.14

Table 10 - Registered Vital Rates and Adjusted Residential Vital rates 2005

Sl. No.	Municipality/ Corporation	Registered vital rates		Adjusted residential vital rates	
		Births	Deaths	Births	Deaths
1	2	3	4	5	6
1	Neyyattinkara	2.80	4.90	29.28	7.03
2	Thiruvananthapuram	11.47	4.70	12.24	4.76
3	Attingal	4.06	3.39	13.19	5.24
4	Kollam Corpn.	10.44	3.52	12.51	4.28
5	Punalur	11.79	4.66	15.52	7.21
6	Kayamkulam	12.61	3.22	17.45	4.96
7	Mavelikara	7.23	5.37	13.67	7.05
8	Alappuzha	11.95	5.57	13.93	6.18
9	Cherthala	5.86	2.65	9.42	3.08
10	Thiruvalla	5.97	6.99	7.58	7.97
11	Changanacherry	7.20	3.83	16.14	6.58
12	Kottayam	3.30	2.73	6.30	5.92
13	Palai	5.09	5.22	10.34	5.95
14	Vaikom	5.65	2.06	16.06	2.70
15	Muvattupuzha	10.64	4.20	19.98	7.04
16	Kochi Corporation	17.47	8.12	21.23	8.51
17	Aluva	6.40	3.38	11.45	6.68
18	North Parur	7.15	3.19	12.93	3.89
19	Perumbavoor	6.75	4.92	16.87	6.80
20	Irinjalakuda	3.32	4.67	11.35	6.07
21	Kodungallur	5.73	3.33	82.32	89.57
22	Chalakkudy	8.56	4.57	13.21	5.59
23	Thrissur Corpn	7.38	3.93	8.17	4.16
24	Guruvayoor	1.01	2.96	11.09	6.27
25	Kunnamkulam	9.70	4.37	22.30	5.17
26	Palakkad	32.28	4.28	36.09	4.85
27	Chittoor-Thathamangalam	1.17	5.96	8.82	8.38
28	Thirur	12.68	4.14	19.08	5.16
29	Malappuram	7.10	1.73	8.29	2.03
30	Kozhikkode Corpn.	14.01	5.58	14.97	5.97
31	Vadakara	6.11	4.68	6.37	5.87
32	Thalasserry	27.88	5.67	30.33	6.34
33	Kannur	10.56	4.20	17.21	6.07
34	Kasaragod	16.03	4.09	17.73	4.40

APPENDIX

Method of calculation of adjusted residential vital rates

Residential vital rates can broadly be defined as the rate of occurrence of vital events among the normal residents of an area in a year. In order to calculate the percentage of under registration, the events occurring among 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 | $\frac{\text{Number of events occurred to normal residents inside the town but not registered} \times 100}{\text{Number of events occurred among normal residents inside the town registered and not registered}}$ |
| 2. Percentage of events occurred outside the town to normal residents | $\frac{\text{Number of events occurred among normal residents outside the town registered and unregistered} \times 100}{\text{Number of events enumerated and occurred among normal residents inside and outside the town}}$ |
| 3. Registered birth/death rate to normal residents | $\frac{\text{Total no of birth/death occurred to normal residents and registered in the town} \times 1000}{\text{Mid year population of the town}}$ |
| 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. Adjusted Residential birth/death rate (weighted for outside events) | $\frac{\text{Residential birth/death rate to normal residents occurred inside the town (weighted for under registration)} \times 100}{(100 - \text{Percentage of events occurred outside the town to normal residents})}$ |



bL11