

**Working Paper  
406**

**COSTS OF BASIC SERVICES IN  
KERALA, 2007  
Education, Health, Childbirth and  
Finance (Loans)**

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S.Irudaya Rajan**

September 2008

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*This Working Paper is dedicated to the  
memory of Prof. P.R. Gopinathan Nair  
who passed away on 6 August 2008*



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Data for this Working Paper were collected along with the data for the CDS Migration Monitoring Study of 2007. However, the modules used for collecting these data were not part of the regular series of CDS studies on Gulf Migration. These modules were added on to the regular schedules at the request of an external agency, which bore the additional cost of collecting these data.

The same 10,000 households availed for the 'Migration Monitoring Study' were availed for this study also. The sample was selected at random from all the 63 taluks in the state. The survey was carried out during April-June 2007. As in the case of 'Migration Monitoring Study', fieldwork for data collection was carried out by Kerala Statistical Institute, Thiruvananthapuram.

## ABSTRACT

**Introduction:** This Working Paper focuses on the pattern and costs of services in four areas, which critically affect most households in Kerala. The major concerns of this Working Paper include answers to questions such as: How much did Kerala households spend for education of their children, for treatment of common and chronic diseases among their members, and for securing medical services related to pregnancy and childbirth? What is the extent of household indebtedness in Kerala? At what cost households secure loans for household and personal needs from banks and other financial institutions?

**Education:** About 8 million children were in school in Kerala in 2007. Whereas about 13 percent of them were getting free education, others had to pay, and the average expense per student came to Rs 2,772 per annum. This, of course, may not be a very large amount, but the average masks a lot of variability. Some students paid very large amounts for specific items falling under the category of educational expenses, which the average actually concealed.

Migration was not a major factor influencing the cost of education. In fact, survey data indicated that households without Non-Resident-Keralites (NRKs) spent on the average, a little more for education than households with NRKs.

**Health:** During the one-month period prior to the date of the study, about 6.2 million persons (18.4 percent) had suffered from one form of sickness or the other. Almost all of them had consulted doctors. 85 percent of them were doctors in government hospitals.

The average cost of treatment was not very high and the differentials between NRK households and non-NRK households were not large either. But the variability among households was large in the average cost of treatment. A few households spent very large amounts for some

of the services. NRK households showed a slight preference for private hospitals over Government hospitals.

**Chronic Diseases:** About 4.48 million persons in Kerala were found to be suffering from one or more of the eight chronic diseases itemized in the study: Diabetes, Heart Problems (cardio-vascular problems), Arthritis, Cholesterol (arteriosclerosis), Blood Pressure (hypertension), Asthma (bronchitis), Cancer and Kidney Diseases. In addition, another 1.78 million persons suffered from several other (not classified) chronic diseases. There were 1,471 thousand persons with hypertension, 1,237 thousand persons with diabetes, 534 thousand persons with bronchitis, 498 thousand persons with cardio-vascular problems, 350 thousand persons with arteriosclerosis, 262 thousand persons with arthritis problems, 64 thousand persons with cancer and 68 thousand persons with kidney problems.

Chronic diseases were in general diseases of the elderly. Since females outnumber males at older ages, the crude (all ages together) prevalence rate of chronic diseases was higher among them. However, age-specific rates were higher for females for diseases like hypertension. The incidence was lower among them for several other illnesses like cardio-vascular problems.

Marriage dissolution due to death or otherwise seems to be related to higher prevalence rate for some chronic diseases. Widowed women and men are at higher risk of suffering from blood pressure than married women or men. The difference is large and spread across all categories of ages. However, the relationship is not very clear-cut in the case of cardio-vascular problems. In fact, at most middle and older ages, the rate of heart diseases is higher among the married than among the widowed. Similarly, at older ages, rate of diabetes is higher among the married than among the widowed. Thus, there is no unique relationship between the rate of chronic diseases and marital status. In some cases widowhood is associated with higher risks and in other cases with lower risks.

The average monthly expenditure per person with chronic diseases varied from Rs 200 for persons with hypertension to Rs 764 for those with cancer. The average was Rs 540 for persons with kidney problems, Rs 510 for those with cardio-vascular problems, Rs.243 for those with cholesterol problems and Rs 257 for those with arthritis.

Widowed persons with diabetes, cholesterol and cancer spent, on an average, more than their counterparts among the married towards treatment. The opposite, however, was the case in the matter of heart disease, blood pressure and arthritis. In these cases married persons spent more than their counterparts among the widowed.

Persons with chronic diseases in the state spent a total of Rs 1,220 million per month for treatment. Those with hypertension spent the largest amount, Rs 295 million. Diabetic patients also spent the same amount. Cardio-vascular patients spent Rs 254 million; asthma patients spent Rs 140 million, arthritis patients spent Rs 68 million; persons with arteriosclerosis problems spent Rs 82 million; cancer patients spent Rs 48 million and persons with kidney problems spent Rs 37 million.

The annual cost of treating chronic diseases in the State was estimated to be about Rs.14,640 crores.

**Pregnancy and childbirth:** Pregnancy rate was relatively low in Kerala in 2007, only 13 per 100 married women under 45 years. About 2 percent of the pregnancies ended in abortions, 4.4 percent in pre-mature childbirth and more than a quarter of them ended in caesarean deliveries. The proportion of caesarean deliveries is unusually high in some communities (Christians) and some districts (Kollam and Pathanamthitta districts).

In 2007, almost all deliveries in Kerala took place in hospitals, mostly in private hospitals. The proportion of childbirths that took place in private hospitals (69 percent) was more than double of those in Government hospitals (31 percent).



This is a noteworthy contrast compared to the practice of using Government hospitals more as against private hospitals for treatment of common ailments. Only 11 percent of persons with common ailments used private hospitals (88 percent used Government hospitals). Kerala women voted with their feet and left Government hospitals for private hospitals in conditions of serious hazard such as childbirth.

The average total cost of treatment, including consultancy and delivery, was Rs 7,905. However, there were considerable variations, when classified by community (Rs 7,449 among Hindus to Rs 9,658 among Christians) and by district of residence (Rs 12,282 in Pathanamthitta district to Rs 4,704 in Palakkad district). The cost was as high as Rs 45,558 if the pregnancy ended in an abortion, Rs 20,474 if the childbirth was premature, and Rs 16,438 for a caesarean delivery. The cost was Rs. 11,915 if the delivery took place in a private hospital, but only Rs 6,688 if it took place in a Government hospital.

Most of the households with NRKs made use of private hospitals (83 percent) than households without NRKs (60 percent). NRK households also paid more for childbirth:

**Financial (loans):** About 2.05 million households out of a total of 7.55 million households (27.2 percent) in Kerala received 2.48 million private loans during the 12-month period in 2006-07. The number of loans was 32.7 per 100 households.

There is no evidence to suggest that loans are taken by Kerala households to support ostentatious living; rather they are taken for essential needs of the household such as buying or building houses, purchase of agricultural equipments, education of children, and loan repayment. Banks are the main source (70 percent) of loans and interest is paid at reasonable rates. Very few households took loans from non-banking sources and at exorbitant rates.

**Concluding remarks:** The role emigration played in household behaviour in Kerala in recent years was a major point of interest in this

study. The methodology used for this purpose was a comparison of households with and without NRKs. This methodology was found to be inadequate for this purpose in several instances, especially in cases in which nearly 100 percent of the households were in one category. For example, nearly 100 percent of the childbirths in Kerala took place in hospitals. In these and similar cases, there was no scope to expect any differential between NRK and non-NRK households.

The overall conclusion of this study is that migration did play a role in household behaviour in Kerala. Nevertheless the effect of migration could not be confined to households with emigrants or return emigrants. There was considerable spill over to non-migrant households, producing similar effects on non-migrant households also.

After 30 years of large-scale exposure to emigration, return emigration and remittances, it is too much to expect that the spill over effect on non-NRK households would be anything but substantial. The impact of emigration on the pattern of use and costs associated the major basic services in Kerala is felt strongly on NRK as well as non-NRK households.

## INTRODUCTION

This is the second Working Paper emanating from Migration Monitoring Study, 2007 . The first was titled, **Migration, Remittances and Employment** (CDS Working Paper No. 395, December 2007, [www.cds.edu](http://www.cds.edu)). It was concerned with measurement and analysis of characteristics of emigrants. In contrast, the present one is concerned with the pattern and cost of some basic services availed of by most of the Kerala households.

**Background** In 2007, there were 18.5 lakh emigrants from, and 9.8 lakh return-emigrants to, Kerala. There were thus 27.4 lakh non-resident Keralaites (NRK). They were from 1.7 million households. About 25 percent of the Kerala households had either an emigrant or a return emigrant in them. And almost all of them had made remittances from abroad amounting to a total of Rs 13,000 crores in 1998 and Rs 24,500 crores in 2007.

In the recent decades total annual remittances to Kerala are usually much larger than the annual expenditure of Kerala Government. What was the extent of the impact of the large number of emigrants and their huge remittances on the utilization of educational, health and financial services in Kerala? In the various sections of this Working Paper, this forms the underlining point of interest.

## Part I

**PATTERN OF EDUCATIONAL SERVICES  
AND COST OF EDUCATION**

**Children in Schools**

The enquiry about cost of education commenced with identifying households with children currently enrolled in educational institutions. The sample population was 44, 645 persons. The survey identified 10,577 children in educational institutions. They constituted about 23.7 percent of the sample population. Persons between 5 years and 25 years of age were 13,706 in the sample. So the student prevalence ratio was 77.1 percent.

**Table 1: Persons Attending Educational Institution by Religion**

Religion	Students	Population	Percent
Hindus	5097	24393	20.9
Christians	1983	8159	24.3
Muslims	3497	12093	28.9
Total	10577	44645	23.7

The rate of attendance in educational institutions was the highest among Muslims (29 percent of the total Muslim population) and the lowest among Hindus (21 percent). The student prevalence rate varied from 20 percent in Pathanamthitta district to 29 percent in Malappuram district (Table 2).

**Table 2: Persons attending Educational Institutions by Districts, 2007**

Districts	Students	Population	Percent
Thiruvananthapuram	1027	4352	23.6
Kollam	827	3672	22.5
Pathanamthitta	347	1736	20.0
Alappuzha	595	2894	20.6
Kottayam	678	2784	24.4
Idukki	387	1658	23.3
Ernakulam	969	4433	21.9
Thrissur	874	4052	21.6
Palakkad	841	3568	23.6
Malappuram	1409	4877	28.9
Kozhikode	1006	3986	25.2
Wayanad	249	1137	21.9
Kannur	954	3898	24.5
Kasaragod	414	1598	25.9
Kerala	10577	44645	23.7

Part of these inter-religious and inter-district variations could be due to differentials in the age composition of the population. Religious groups and districts that have larger proportions of children would have higher school participation rates.

### **Distribution of Students by Courses**

Secondary school students constituted the largest proportion of the student community (43 percent). About 25 percent were in Primary classes, 9 percent in Higher Secondary classes, 6 percent in Degree courses and 4 percent in Professional courses. (Table 3)

Inter-community variations were not large. However, the proportion of Muslims in professional courses was small, only 1.6 percent compared to 5.5 percent among Christians and 5.0 among Hindus. The differential in degree courses was much lower. Muslims had the highest

proportion (compared to other communities) of students in secondary school. Differentials in the age composition of children could have been a factor in this difference.

**Table 3: Courses Taken by the Students by Religion**

	Hindus	Christians	Muslims	Total
Pre-School	4.6	5.5	3.9	4.5
Primary	25.0	26.4	25.5	25.4
Secondary	41.3	39.9	46.4	42.7
Higher Secondary	8.6	9.8	8.4	8.8
Vocational Training	5.0	4.0	4.6	4.7
Degree	6.2	5.3	4.5	5.5
Post Graduate	2.0	2.0	1.1	1.7
Professional	5.0	5.5	1.6	4.0
Others	2.3	1.5	4.0	2.7
Total	100.0	100.0	100.0	100.0

### **Cost of Education**

A household's costs of education consist of

- (1) Fees for coaching courses,
- (2) Payment/donation for registration, enrolment etc,
- (3) Tuition fees in schools in which students are enrolled
- (4) Cost of private tuition
- (5) Cost of uniform and the like
- (6) Cost of books and stationery, and
- (7) Travel cost

All these items were not applicable to all students. For example, fee for coaching classes was not applicable to all the 10,577 students but only to 86 students who were attending coaching classes in higher secondary classes.

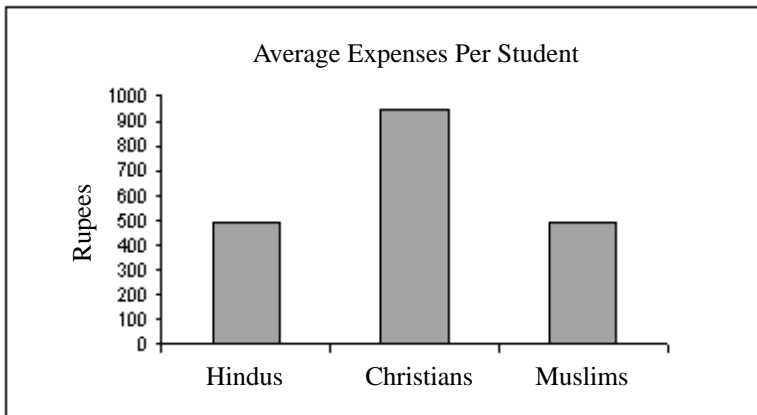
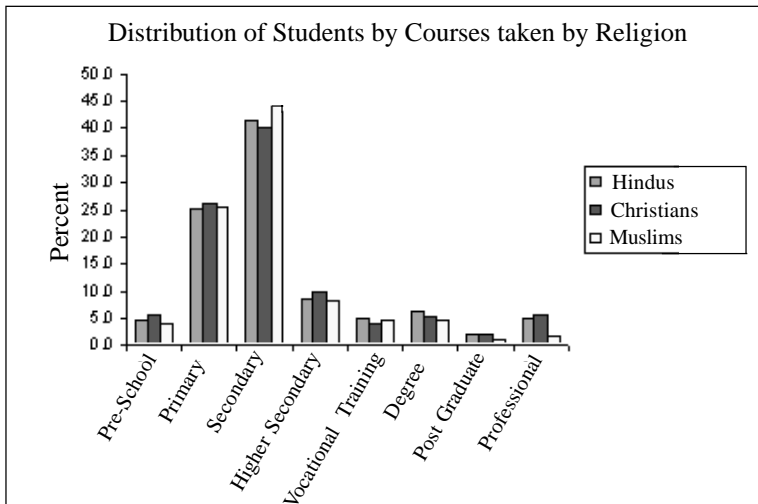
**Table 4: Average Cost Per Student for Various Items**

	No of Students		Average Cost (Rs)	Highest Payment (Rs)
	Paying	Percent		
Entrance Coaching	86	0.8	4775	17,000
Registration Enrolment	5929	56.1	1950	500,000
Tuition per Month	3150	29.8	476	7,500
Uniform, Shoes etc	7971	75.4	626	7,500
Books, supplies	9002	85.1	668	12,000
Private Tuition	1587	15.0	197	5,000
Transport/month	4788	45.3	168	2,500

### **Total Cost**

Students of different ages study in different grades. Therefore, not all students may incur all the different expenses. The average cost of a student (average of the sum of the various items of costs for each student), taking into consideration only the items applicable to him was Rs 573. Community wise it varied from Rs 947 for Christians to Rs 494 for Hindus and to Rs 491 for Muslims. [vide Fig. 1]

Students in Kottayam district spent on an average about Rs 1,418 compared with the average of Rs 573 for all districts taken together. Students in Thrissur spent the lowest average amount, Rs 371 only.

**Figure 1****Figure 2**

### Cost by Categories: Entrance Coaching

As mentioned earlier, coaching expenses is applicable only to Higher Secondary students aiming at joining professional courses. They numbered only 86 out of a total of 10,577 students. The average cost of entrance coaching for these 86 students was Rs 4,800.



Considerable variations existed among districts with reference to coaching expenses. In Wayanad district, no higher secondary student in the sample had taken entrance coaching while Kollam district had the largest number of students (20 students). The average cost in Kollam was Rs 1,580 per student.

### **Registration, Enrolment and Donation**

About 56 percent of the students (5,929 in the sample) had made payments under this item. Their percentage varied from 86 in Wayanad district to 39 in Malappuram district.

Their average cost was Rs 1,950 and it varied from Rs 1,160 in Kozhikode district to Rs 5,600 in Kottayam district.

### **School tuition fees per month**

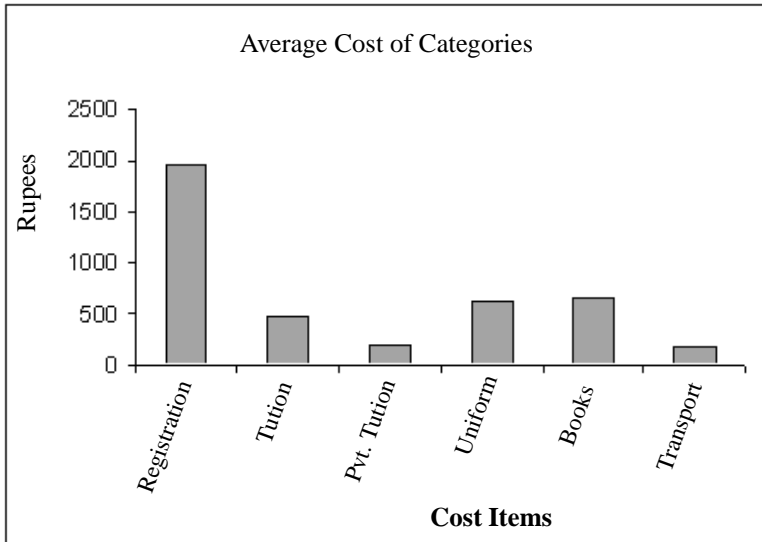
The number of students paying tuition fees in schools was much lower (3150) than the number paying registration fees (5929). Only about 30 percent of the students had to pay tuition fees in schools.

The percentage was however as high as 43 in Ernakulam district and as low as 14 in Wayanad district. The average tuition fee was not very high; it was only Rs 476 per student. It varied from Rs 862 in Kottayam District to Rs 273 in Malappuram district. In Idukki district, it was high.

### **Private tuition per month**

Only about 15 percent of the total students had incurred expenses on private tuition. But their number was relatively high in the southern districts, where more than 30 percent of the students were found taking private tuition. In the northern districts much less proportion of students took private tuition.

Monthly private tuition costs on an average came to Rs 197 per student. It was the highest in Kottayam district (Rs 386) and the lowest in Idukki district (Rs 116).

**Figure 3**

### **Uniforms and footwear**

Most of the students, 75 percent of the total, had incurred expenses on school uniforms. In Wayanad, expenses incurred under this item were as high as 90 percent.

The average cost for uniform was Rs. 626 per student. Expenses were relatively uniform in all the districts, the highest being Rs 754 in Kottayam and the lowest Rs 549 in Kollam district.

### **Books and Stationery**

Most (85 percent) students had incurred expenditure on books and stationery supplied by schools. In some districts, more than 90 percent had paid for books.

The average book cost was almost as much as cost of uniform, Rs 668. Kottayam district students spent on an average as much as Rs 1,149 on books. But Palakkad district students did not spend even half as much; their average expenditure was only Rs 459.

### Monthly expenditure on Travel

About half the total number of students had paid for their transportation to and from school. In Wayanad district 68 percent paid for transport: but only 23 percent in Kasargod district paid for it.

On an average, the expenditure for transport to and from school was Rs 168 per month. Inter-district variation was not very large: it ranged from Rs 123 in Kozhikode district to Rs 208 in Kollam district.

**Table 5. Cost of Education: Average, SD, CV and Maximum (Rupees)**

Items	Average	SD	CV	Maximum
Registration, Donation etc	1,950	11,665	6.0	500,000
Tuition (school)	476	896	1.9	7,500
Private Tuition	197	253	1.3	5,000
Uniform, shoes, etc	626	415	0.7	7,500
Books, supplies, etc	688	768	1.1	12,000
Transport	167	167	1.0	2,500
Average of Total	2,772	9,998	3.6	506,100

**Table 6. Average Cost of Education: Migrant and Non-migrant Households (Rupees)(Includes only those who incurred costs)**

Items	NRK Households	Non-NRK Household
Registration, donation etc	2057	1905
Tuition	395	519
Private Tuition	206	193
Uniform etc	659	611
Books	619	690
Transport	170	167
Average of Total	2763	2773

## Scholarship

Some students received scholarship and other assistance for studies. Out of a total of 10,577 students, 566 got such assistance, which works out to be only about 5.4 percent. Out of a total of 566 who got scholarships and similar forms of assistance, 405 belonged to the Hindu community. The incidence rate of acquiring scholarship was 9.7 percent among Hindus, 2.1 percent among Christians and 3.1 among Muslims.

**Figure 4**



Although only 2.1 percent of the Christian students received scholarship, the average amount of scholarship for them was much higher (Rs 4,871) than for Hindu students (Rs 533) or for Muslim students Rs (765).

**Table 7 Average Scholarship by Grades**

	Scholarship Amount in Rs.	No. who got it
Pre-School	190	5
Primacy	220	137
Secondary	442	299
Higher Secondary	1399	42
Vocational Training	1377	17
Degree	2604	29
Post Graduate	2207	7
Professional	18392	20
Others	1897	10
Average of Total	1289	566

## **Scholarships by Courses**

The Secondary level students received the largest number of scholarship, 299 out of a total of 522. The average amount of scholarship for them was only Rs 442. Surprisingly, primary school children were also recipients of scholarships.

The average scholarship amount for all courses was Rs 1,289, but 20 students in professional courses received on an average Rs 18,392. Degree students received an average scholarship of Rs 2,600.

## **Part II**

### **PATTERN OF SERVICES FOR TREATMENT OF COMMON DISEASES AND COSTS**

Among the members of this household, was there any case of ailment/accident/injury/aches, etc during the previous month? was the question asked to gather information on the health status of the households during the survey. In case there was a response, information was collected on consultation, cost of medicines, etc.

#### **Prevalence of illness**

Out of the 44,645 members of the 10,000 households in the sample, 8,236 had suffered from one or more ailments/accidents/injuries/aches during the month immediately preceding the survey. 18.4 per 100 persons or about 1 in 5 of the Kerala population suffered from one illness or other during a month in 2007.

The illness ratio varied very little by religious groups and was practically the same for all the three major religious groups. Illness has turned a blind eye towards the religious affiliation of its victims.

The place of residence of the respondents, however, exerted a major influence. Illness ratio varied from 7.5 percent in Wayanad district to 23.8 percent in Thrissur district. The ratio was higher than the state average in Thiruvananthapuram, Kollam, Pathanamthitta, Alappuzha, Thrissur and

Malappuram districts and was lower than the state average in Wayanad, Idukki, Kottayam, Ernakulam, Palakkad, Kannur and Kasaragod districts. There was no marked differential between the south and the north with reference to place of residence and the incidence of illnesses.

### **Consultation for illness**

Most people in Kerala consult doctors when ill. More than 96 percent of sick persons consulted doctors. Those who did not do so sought advice from paramedical persons such as nurses, pharmacists, etc instead. There was hardly any difference among the various communities in this matter either.

### **Place of consultation**

Almost all the sick, 96 percent, went to hospitals for consultation. Their predominant preference was for Government hospitals. While 85 percent went to Government hospitals, only about 11 percent went to private hospitals. This is in significant contrast to the relative use of Government and Private Hospitals for pregnancy-related consultation (see part IV of this report). Sixty one percent of pregnant women availed Private hospitals for childbirth and 31 percent availed Government hospitals.

There is not much variation in terms of religious groups in this matter.

**Table 8. Population by Prevalence of illness last month, prior to the survey**

Illness	No Illness	Total	% illness	
Hindus	4532	19861	24393	18.6
Christians	1481	6678	8159	18.2
Muslims	2223	9870	12093	18.4
Total	8236	36409	44645	18.4

**Table 9 Prevalence of Illness of Population by last month prior to the survey by Districts, 2007**

	Illness	Total	% illness
Tiruvananthapuram	1000	4352	23.0
Kollam	858	3672	23.4
Pathanamthitta	346	1736	19.9
Aleppuzha	647	2894	22.4
Kottayam	372	2784	13.4
Idukki	241	1658	14.5
Ernakulam	686	4433	15.5
Thrissur	966	4052	23.8
Palakkad	541	3568	15.2
Malappuram	1153	4877	23.6
Kozhykode	733	3986	18.4
Wayanad	85	1137	7.5
Kannur	376	3898	9.6
Kasseragod	232	1598	14.5
Total	8236	44645	18.4

### **Cost of Treatment**

The average consulting fees paid to doctors was relatively small, Rs 108. The average cost of transport to hospitals was a mere Rs 130. Expenses began to swell when it came to hospitalization (Rs 7,742), and medicines & tests (Rs 498). On the whole, differentials in terms of religious groups were not large. There were however large inter-district differentials.

The average cost for hospitalization varied from Rs 12,636 in Kasaragod district to Rs 4,766 in Wayanad district and Rs 4,840 in Idukki district.

**Table 10. Average cost (in Rs) of medical Services by District and type of Services( includes only those who paid) in rupees**

	Consultation Per Month	Medicine/ tests	Transport	Hospital charges	All Services
		per month			
Thiruvananthapuram	96	319	91	7815	2247
Kollam	124	690	112	7809	3416
Pathanamthitta	106	344	150	5814	2542
Alappuzha	92	325	159	6388	2318
Kottayam	164	963	200	4648	4623
Idukki	228	1274	238	4840	4121
Ernakulam	72	729	106	8522	3880
Thrissur	86	383	80	11697	2683
Palakkad	80	341	140	6835	2644
Malappuram	76	298	116	9127	1904
Kozhikode	150	530	131	11350	3212
Wayanad	335	2769	560	4766	5985
Kannur	148	431	266	11680	3722
Kasaragod	139	305	142	12636	3722
Average of Total	108	498	130	7742	2992

**Total Cost**

The total cost for medical services for illness was calculated by adding the cost of each item of expenses for each person. The average total cost is obtained by taking the average for all persons whose total cost was more than zero (that is, only persons who had made payment for at least one item of expenses).

The average total cost was Rs 2,992. It varied from Rs 3,699 for Christians to Rs 2,492 for Muslims.

Inter-district variation was very marked. The residents of Wayanad paid for medical services the highest amount, Rs 5,985 and Malappuram residents the least, Rs 1,904.



### Part III

#### PREVALENCE AND COSTS OF TREATMENT OF CHRONIC DISEASES

A special question was asked in the survey to identify persons with chronic diseases. Does any member of the household suffer from any of the following illness? If so, what was the expense (per month) incurred in his/her treatment?

The following chronic diseases were included in the choice bundle:

Diabetes

Heart Problems

Arthritis

Cholesterol

Blood Pressure

Asthma

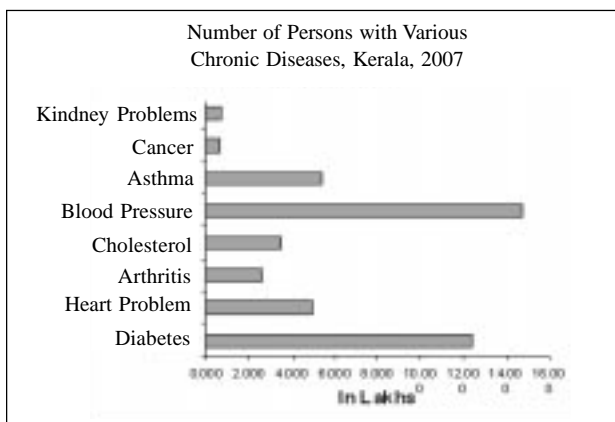
Cancer

Kidney Diseases

Others

#### Prevalence of Chronic Diseases

**Figure 5**



In the sample of 10,000 households with 44645 persons, a total of 6,678 persons were found to have one or more chronic diseases. The prevalence rate of chronically diseased persons was about 15 percent of the total population.

Some persons suffered from more than one chronic disease. Therefore, the total number of prevalent chronic diseases was more than the total number of diseased persons. The number of prevalent chronic diseases among the 6,678 affected persons was 9,277. This gives a higher prevalence diseases ratio of 21 percent of the total population.

The most common chronic disease was blood pressure. About 24 percent of the total number of diseased persons suffered from this malady; about 20 percent suffered from diabetes; 9 percent suffered from asthma and 8 percent from heart problems.

These numbers, when projected for the state as a whole, would indicate a magnitude of 14.7 lakh persons with blood pressure, 12.4 lakh persons with diabetes, 5.3 lakh persons with asthma, 5.0 lakh persons with heart problems, 3.5 lakhs with cholesterol, 2.6 lakh persons with arthritis problems, 68 thousand persons with kidney problems, and 64 thousand patients with cancer. Altogether the projected number of persons with the 8 chronic diseases listed in Table 12 was 44.8 lakh. This number excludes about 17.8 lakh of persons with miscellaneous, unspecified chronic diseases.

As mentioned above some persons suffered from more than one disease. Almost all arteriosclerosis patients suffered some other chronic diseases also. Similarly, two-thirds of diabetic patients had some other diseases. Nearly 60 percent of patients with heart and blood pressure problems suffered from some other chronic diseases as well.

**Table 11. Number of Persons With Chronic Diseases, Kerala 2007\*\***

	Number			Percent		
	Males	Females	Total	Males	Females	Total
Diabetes	938	950	1888	21.9	18.7	20.1
Heart Problem	447	315	762	10.4	6.2	8.1
Arthritis	131	268	399	3.1	5.3	4.3
Cholesterol	255	273	528	5.9	5.4	5.6
Blood Pressure	899	1368	2267	21.0	26.9	24.2
Asthma	367	431	798	8.6	8.5	8.5
Cancer	31	65	96	0.7	1.3	1.0
Kidney Problem	51	49	100	1.2	1.0	1.1
Other	1170	1369	2539	27.3	26.9	27.1
Total	4289	5088	9377	100.0	100.0	100.0

\*\* The total is not of the number of diseased persons, but of the count of diseases suffered by persons. So a person suffering three chronic diseases is counted as 3 and a person suffering two chronic diseases is counted as 2 in this Table.

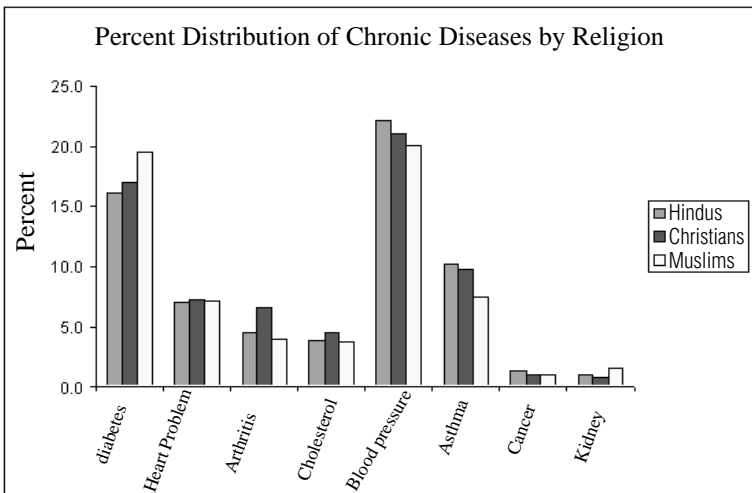
**Table 12. Estimated Number of Persons with Chronic Diseases and Cost by type of Diseases**

	Males	Females	Total	% Females	Average Cost	Total Cost In Million/ month
	Total For Kerala					
Diabetes	611690	625489	1237179	50.6	238	295.4
Heart Problem	287700	210565	498265	42.3	509	253.9
Arthritis	8935543	173155	262510	66.0	257	67.6
Cholesterol	170295	179641	349936	51.3	234	82.0
Blood Pressure	577862	893476	1471338	60.7	200	295.4
Asthma	244815	288881	533696	54.1	262	139.9
Cancer	19684	43849	63533	69.0	764	48.5
Kidney Problems	34862	33495	68357	49.0	540	36.9
Others	833327	943307	1776634	53.1	287	510.6
Total	2869590	3391858	6261448	54.2	299	1730
Total-Others	2036370	2448687	4484822	54.6	273	1220

**Table 13. Percentage of Persons with More than one Chronic Disease (Sample)**

	Main Disease	More than One Disease	Percent with Other Diseases
Diabetes	1141	1888	65.5**
Heart Problem	477	762	59.7
Arthritis	325	399	22.8
Cholesterol	264	528	100.0
Blood Pressure	1435	2267	58.0
Asthma	640	798	24.7
Cancer	80	96	20.0
Kidney	75	100	33.3
Other	2241	2539	13.3
Average of Total	6678	9377	40.4

\*\*=100\*(column 2-column1)/Column1

**Figure 6**

### **Prevalence of Chronic Diseases by Religion**

The prevalence rate of chronic diseases was the highest among Christians and the lowest among Muslims. Differentials in aging of the different communities could be the major underlining factor.

Among all religious communities, hypertension was the most common chronic disease. Next in order of prevalence was diabetes, which was followed by asthma.

### **Chronic Disease Distribution by Districts**

Hypertension was the most common chronic disease in the total population and for all the three religious communities. But this was not found to be true for all the districts in Kerala. In Pathanamthitta, Malappuram and Kozhikode districts, diabetes was the most common chronic disease. On the other hand, in Wayanad district diabetic patients constituted only 4.8 percent of persons suffering from chronic diseases. The corresponding percentage in Malappuram district was 25.9 and in Kottayam was 24.8.

Pathanamthitta claimed the highest prevalence ratio for diabetes; Kollam district for heart disease; Idukki district for hypertension, arthritis and cholesterol; and Tiruvananthapuram and Ernakulam districts for asthma.

The highest prevalence rate for all chronic diseases taken together was in Tiruvananthapuram, 21.7 percent. Idukki is not far behind with 20.4 percent prevalence rate. Low prevalence rates were observed in Kannur (9.2 percent), Palakkad (9.6 percent), and Kasaragod (9.9 percent). On the whole, the southern districts of Kerala exhibited higher incidence of chronic diseases.

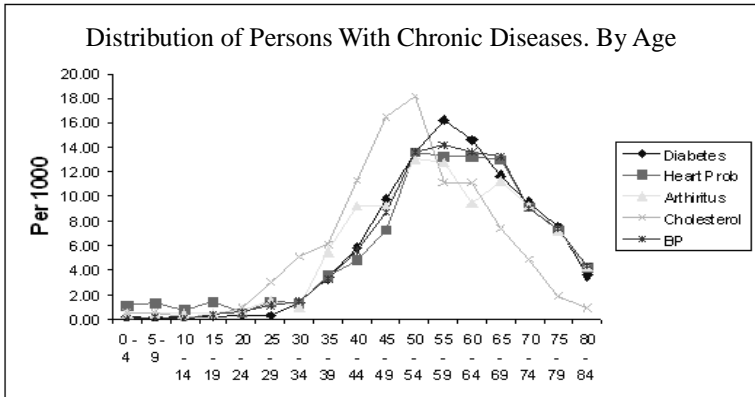
### **Age Pattern of Patients of Chronic Diseases**

Figure 7 gives the percentage distribution by five-year age groups of the patients of major chronic diseases and figures 8-13 gives the age pyramid of persons with six of the selected chronic diseases.

The largest number of persons with chronic diseases was in the age group of 55-59 years. Very few persons below age 25 years were afflicted with chronic diseases. The curve was relatively flat for patients of hypertension and cardio-vascular problems at ages between 50 and 65 years.

The average ages of the largest number of persons with various chronic diseases did not lie far apart. They varied between 51.6 years for cancer to 60.0 years for hypertension.

**Figure 7**



**Table 14 Average Age of Persons with Chronic Diseases by Sex**

	Males	Females	Persons
Diabetes	59.9	59.4	59.6
Heart Problem	58.1	58.3	58.2
Arthritis	56.2	59.0	58.1
Cholesterol	56.5	56.8	56.7
Blood Pressure	59.7	60.3	60.0
Asthma	54.9	54.5	54.7
Cancer	54.6	50.0	51.5

Figure 8

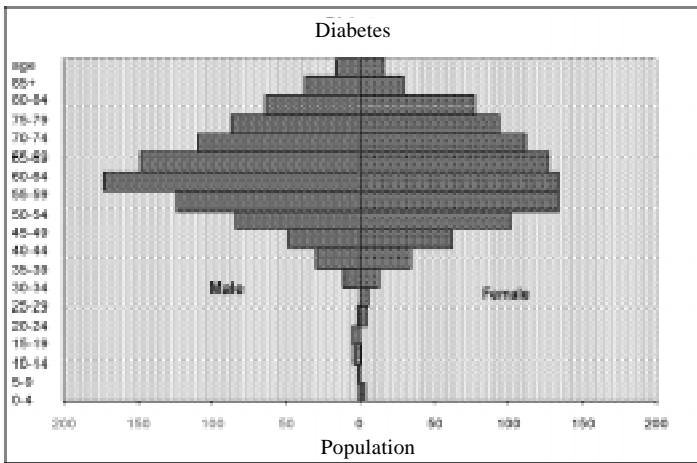


Figure 9

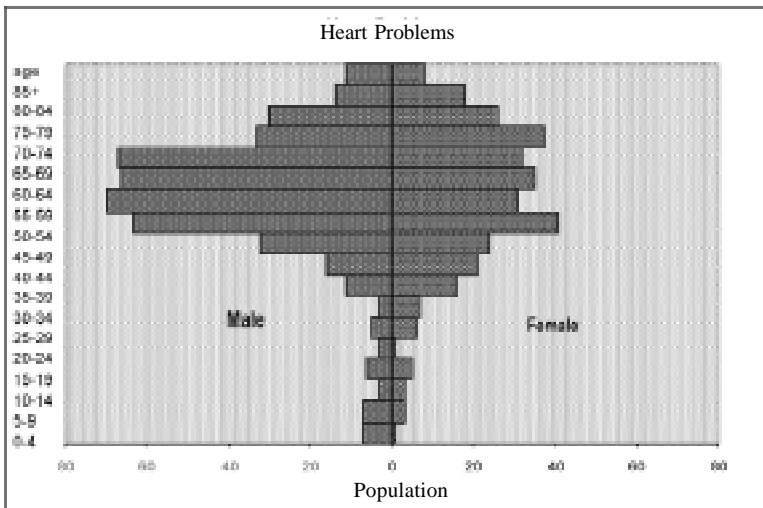


Figure 10

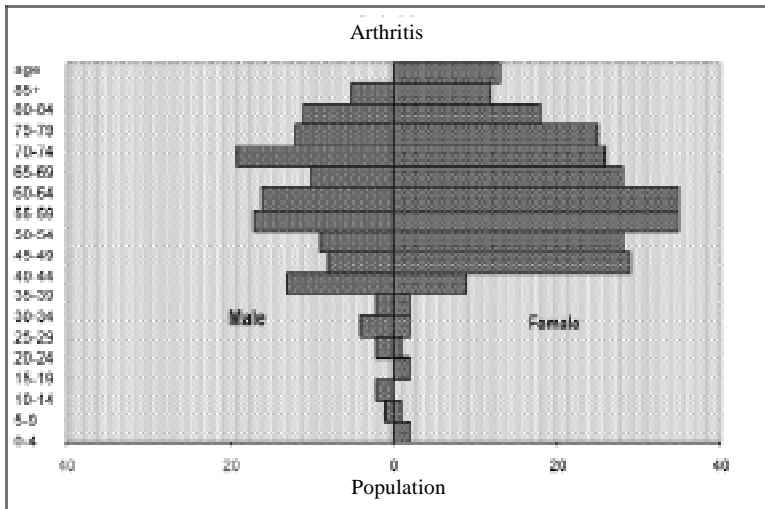


Figure 11

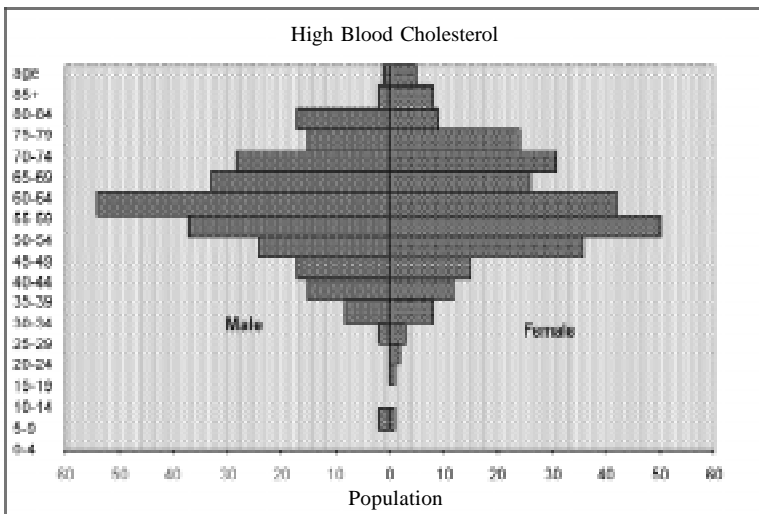




Figure 12

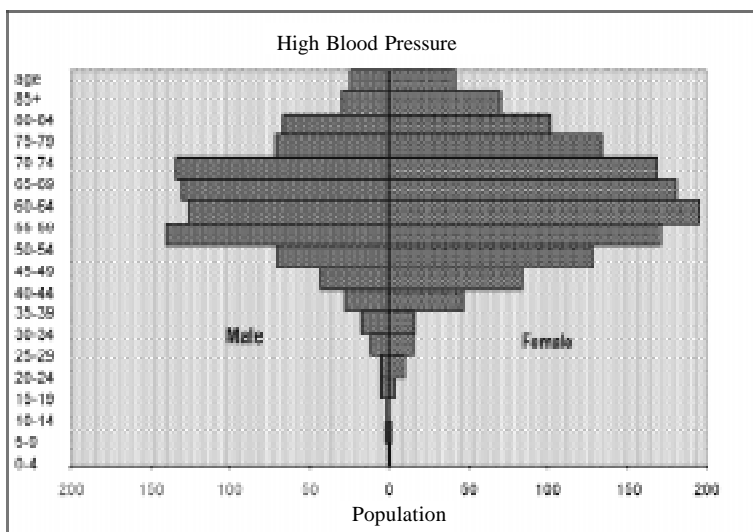
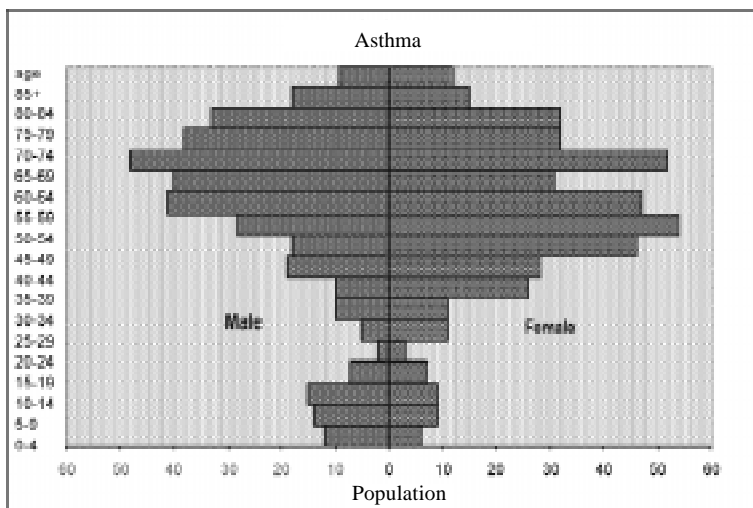


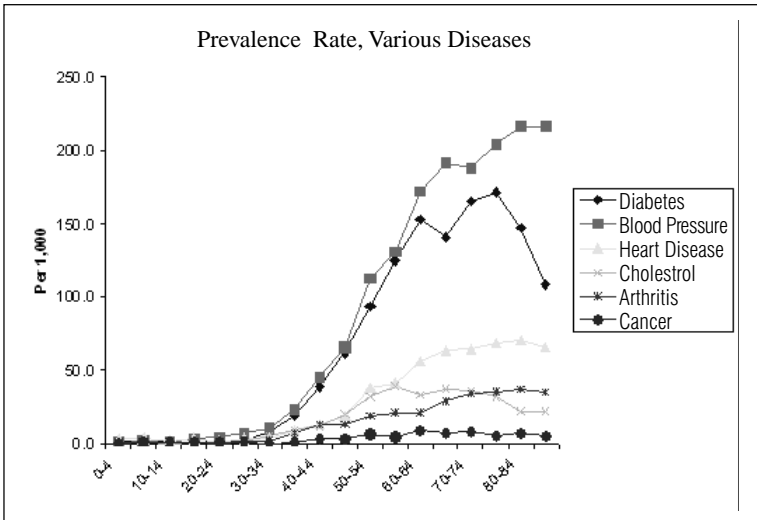
Figure 13



## Prevalence Rates By age

Figure 14 gives the prevalence rates by age of the various chronic diseases. These prevalence rates show that chronic diseases are essentially diseases of the elderly. The prevalence rates increase rapidly after 40 years of age. One exception noticed is in the arteriosclerosis ailment. The prevalence rate for arteriosclerosis increases with age of the patients, but after they reach 50 years not much increase is observed. In fact, the graph shows some decrease after that age.

**Figure 14**



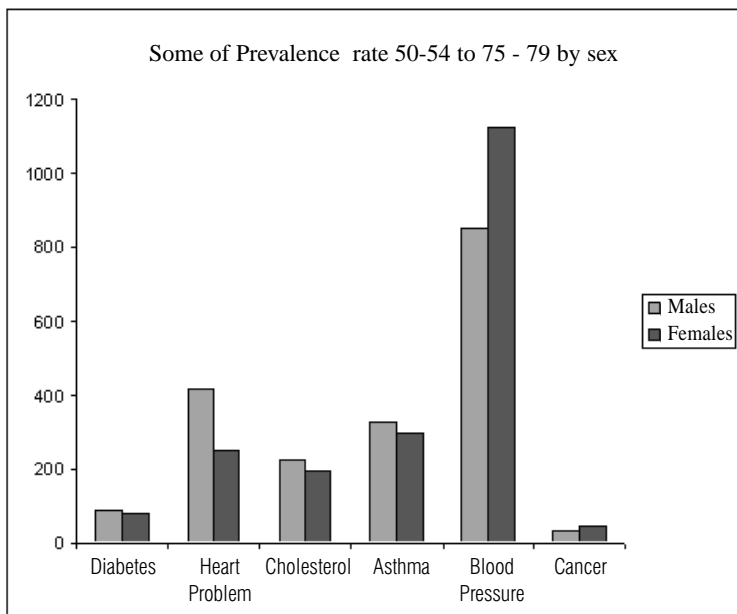
## Male-Female differences in Prevalence of Chronic Diseases

The analysis of prevalence rate based on data for all ages revealed that females had higher incidence in all the listed diseases except for cardio-vascular and kidney problems. The prevalence rates for women are relatively very high for cancer, hypertension and arthritis.

Age-sex-wise data show that large male-female differences in incidence did not exist at younger ages. At higher ages, differences did

exist. Prevalence rates were relatively high for males for diabetes, cardio-vascular diseases, arteriosclerosis and asthma, and low for hypertension and cancer. An approximate index of these differences is given in Figure 15.

**Figure 15**



Age-specific sex differentials for the various diseases are given Figure 16-19.

The prevalence rates for cardio-vascular problems were higher for males than for females in all age groups. A similar pattern was found for diabetes also. The opposite pattern, however, was noticed in the case of hypertension. In this case, the rates were higher for females at all ages. The differences increase at higher ages. In the case of asthma, females have higher prevalence rates at reproductive ages but have lower prevalence rates after 50 years of age.

Figure 16

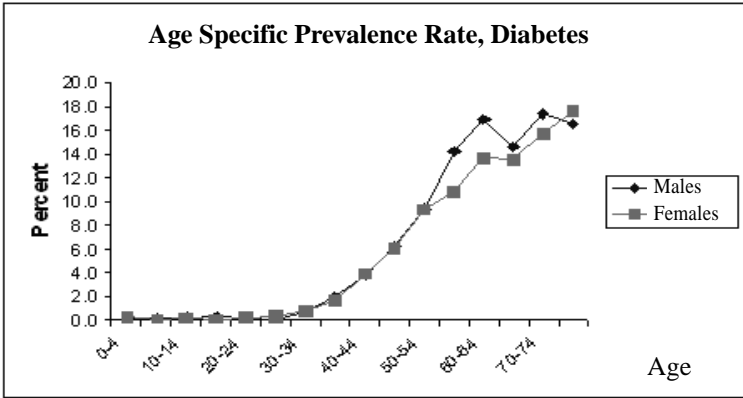


Figure 17

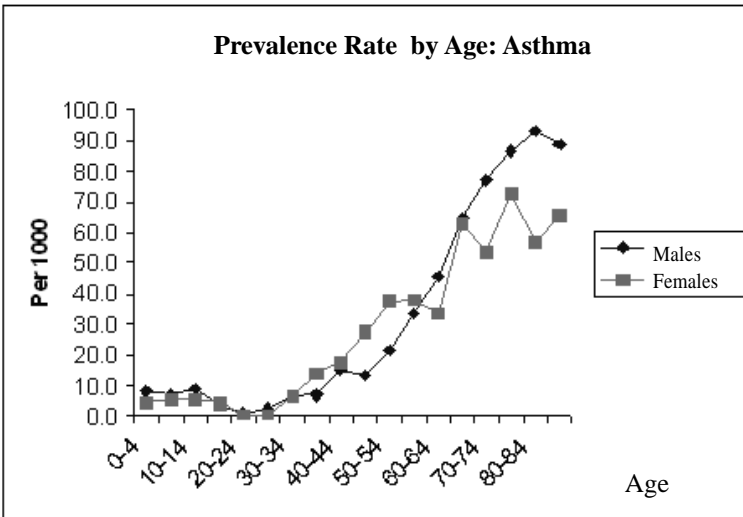


Figure 18

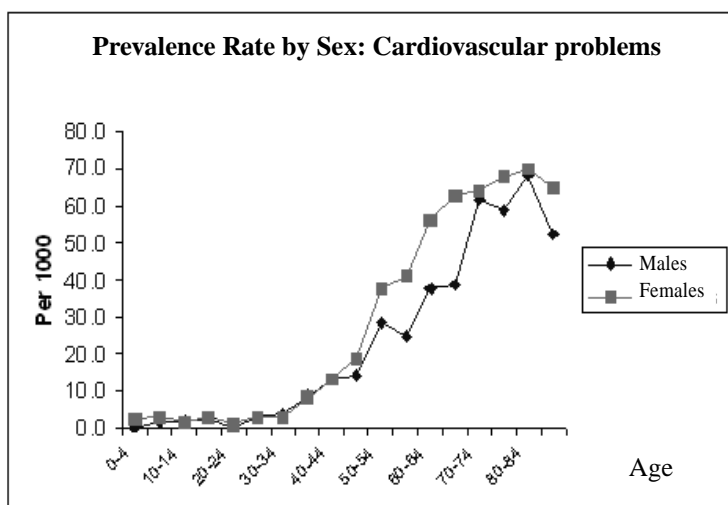
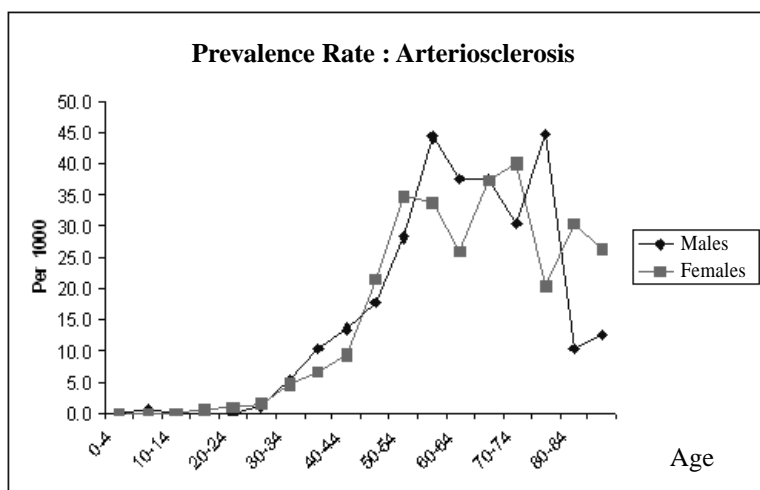


Figure 19



## **Chronic Diseases and Widowhood**

Marital status is found to exert a major influence on one's lifestyle and hence on one's health condition. The survey data provide materials to analyze the association between prevalence rates of chronic diseases and marital status. Three comparisons are possible:

Between:

Married - Widowed

Unmarried - Widowed

Married --Unmarried

There are however specific limitations in the data. Unmarried persons, usually, are very young; there are only a very few of them at older ages. On the other hand, widowed persons are typically very old and there are very few of them at younger ages. So comparisons between unmarried and widowed as well as between married and unmarried are not attempted in our analysis.

Some married persons are relatively young and some are old. They have a more even distribution than the other two groups. Even here, married females are few at very old ages; they become widowed at higher ages. Therefore, in this analysis, we have included only a comparison of the married with the widowed.

Age-specific prevalence rates show some erratic movements with age, as the numbers involved in some age groups remain small. To circumvent this problem, 5-point moving averages are used instead of the actual rate. For example, the rates used for 40-44 years in the figures given below are the sum of the computed rate for 30-34, 35-39, 40-44, 45-49 and 50-54 age groups divided by 5 (a 5- point moving average). Similar calculations are done for higher ages also.

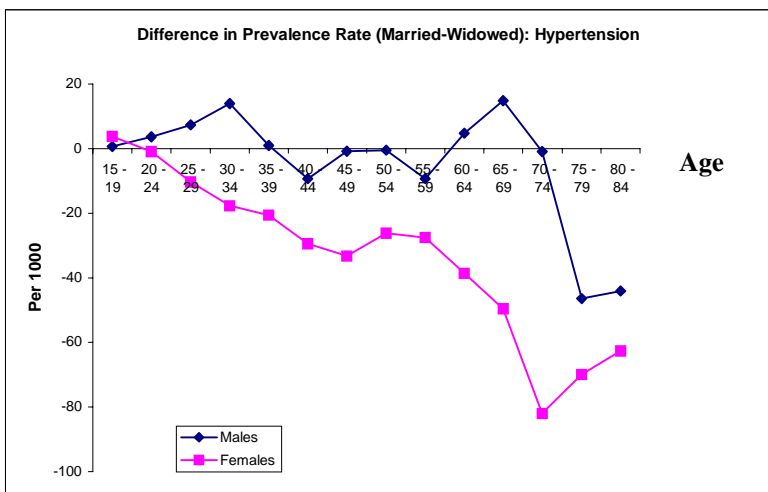
## Widowed versus Married

Graphs giving the difference in prevalence rates (married-widowed) for various chronic diseases are given in Figures 20-25. A negative number in these charts indicates that prevalence rate for the widowed is larger than that of the married.

## Hypertension

Figure 20 indicates that prevalence rate of hypertension among the widowed is very much higher than that among the married. Widowed women and (to some extent men also) are at a higher risk of suffering from hypertension than married persons. Among females, the difference is large and spread over all ages. Married men fare better in the age groups between 15-19 and 35-39 as well as in the age groups 60-64 to 70-74 whereas widowers are better off in the other age groups.

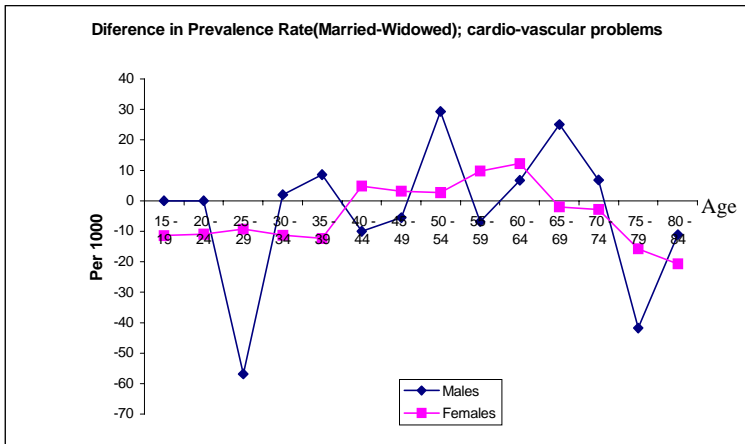
Figure 20



## Cardio-vascular problems

In the case of cardio-vascular problems, no clear-cut pattern of differential, valid for all ages, is found. The graph indicates that at younger ages widowhood is associated with higher prevalence of cardio-vascular problems, especially among women. But at most of the middle and older ages, the prevalence rate for heart disease is larger among married than among the widowed. In this data set, blissful married life does not altogether reduce the risk of getting cardio-vascular problems. Does it increase it? The evidence is not clear-cut.

**Figure 21**



## Arteriosclerosis

The prevalence rate of arteriosclerosis among married males is found to be higher than among widowed males at ages below 45 years. However, widowed males have higher prevalence rates at ages above 50 years. The relationship is not very clear-cut for females. Between ages 40 to 60 years, the married women have higher prevalence rate of arteriosclerosis than widowed persons. This ailment is not prevailing much among widowed females.



Figure 22

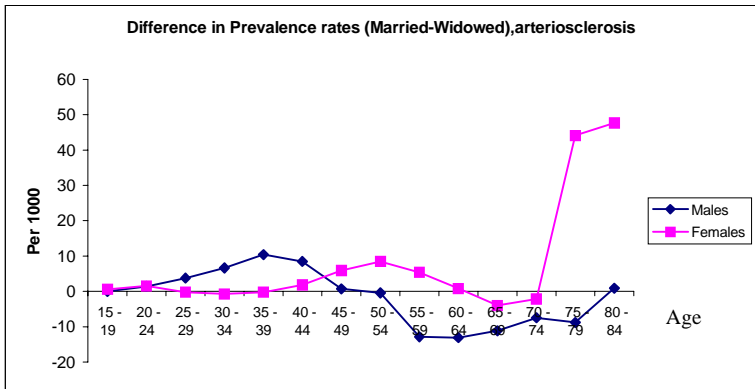
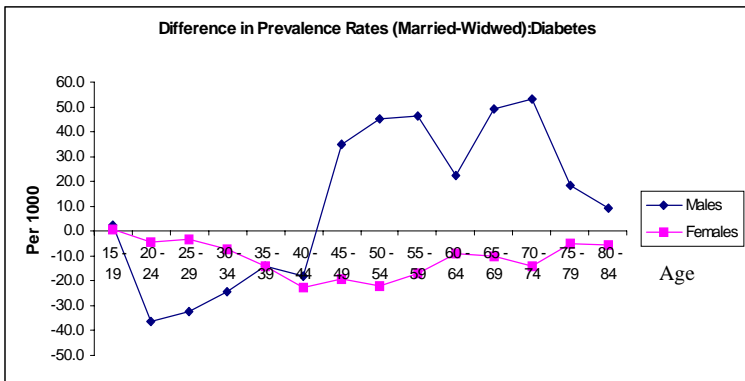


Figure 23



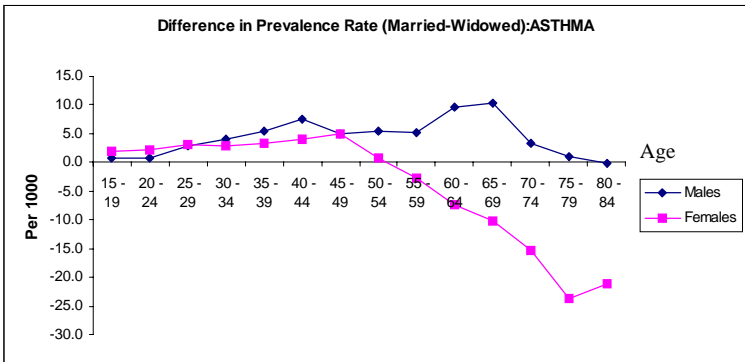
## Diabetes

The pattern of difference between the married and the widowed in terms of the prevalence rate of diabetes at younger ages (where there are few widowed) is insignificant, whereas it is conspicuous at older ages. The difference between the married and the widowed among males at older ages is quite large; the prevalence rate for diabetes is higher among married than among the widowed at ages above 40 years. The opposite, however, is the case for females. The prevalence rate for diabetes among females is higher for the widowed than for the married at all ages.

**Asthma**

Among males the prevalence of asthma is higher among the married than among the widowed. This is true at all ages. Among females, the widowed have higher rates at ages above 50 years.

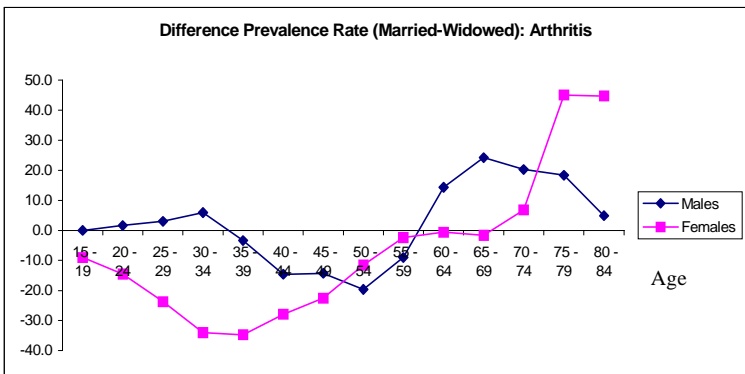
**Figure 24**



**Arthritis**

The prevalence of arthritis between the married and the widowed among both sexes is different at younger ages compared with older ages.

**Figure 25**



At younger ages widowed have higher prevalence of the disease, but at older ages (above 55 years), the opposite is the case. The married have higher incidence of arthritis than the widowed.

### Cost of treating chronic diseases

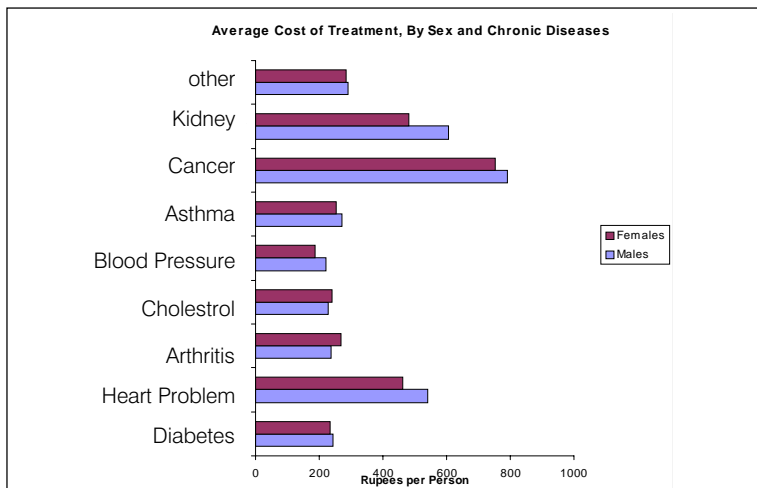
The average monthly expenditure per person with a chronic disease was Rs 307. But the amount varied from Rs 200 for persons with hypertension to Rs 764 for cancer patients. The cost was Rs 540 for those with kidney problems, Rs 510 for those with cardio-vascular problems, Rs 257 for those with arthritis and Rs 243 for those with arteriosclerosis. (Figure 26)

### Average cost by sex and age

Among persons with chronic diseases, men spend more for treatment than women. This is the case for all the listed diseases, except for arteriosclerosis and arthritis.

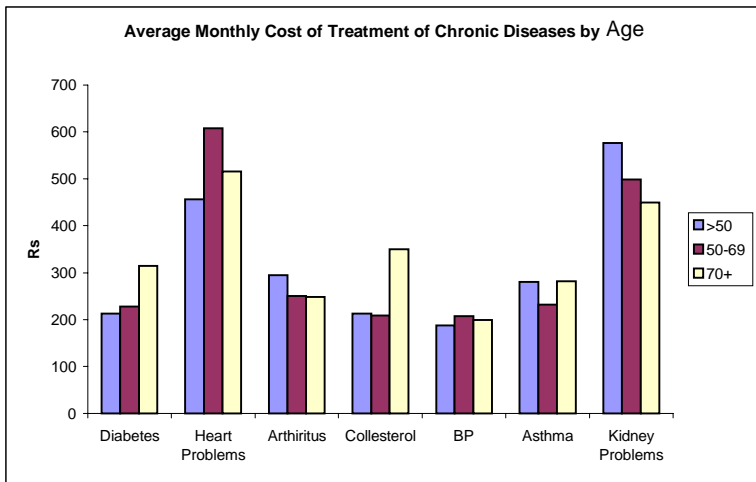
Age also is also a factor related to cost of treatment. For treatment of diabetes, older persons spend more than younger persons. For kidney

**Figure 26**



problems, the pattern is just the opposite, younger persons spend more than the old. For hypertension, there is not much of a difference between the young and the old in terms of the costs of treatment involved. For asthma, persons in the age group of 50-69 years spend more than either persons in lower or in higher age groups. For cardio-vascular problems also, the middle aged (50-69) persons spend on an average more than either the younger or the older age groups.(Figure 27)

**Figure 27**



### Average Cost by Marital Status

There is no consistent pattern of differentials in the average cost incurred by the single, married or widowed, which is valid for all chronic diseases. For some diseases like cancer, widows spent the highest. But for some other diseases like hypertension or arthritis, widows spent the lowest, lower than what married persons or single persons spent. For cardio-vascular problems or arthritis, married persons spent the largest amount. (Figure 28)

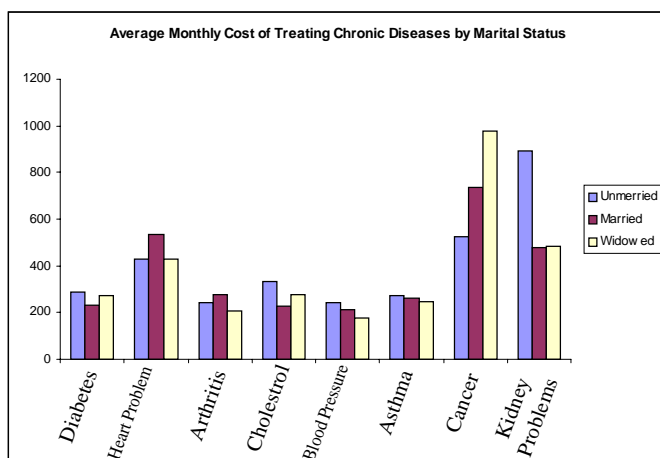
## Average Cost by District

The average of the expenses incurred for treatment by persons with chronic diseases varied from Rs 192 in Wayanad district to Rs 394 in Alappuzha district. The cost was relatively high in the districts between Alappuzha to Kozhikode.

## By Migration Status

The average cost of treating chronic diseases in households with NRKs was Rs 350, which was much higher than the average cost incurred by non-NRK households, namely Rs. 290.

**Figure 28**



## Total Cost

If the age-sex-disease-specific prevalence rates were applied and projected to the total population of 33.3 million of Kerala in 2007, classified by age and sex, the total number of persons with chronic diseases would approach about 4.5 million for the 8 diseases listed in the table. With the average expenses given above, the 4.5 million sick persons with one or more of these diseases would be spending about Rs

1,222 million per month for treating their illness. Out of this total amount, Rs 296 million would be spent by persons with diabetes, Rs 295 million by patients with hypertension, Rs 255 million by persons with cardiovascular problems, Rs 141 million by persons with asthma, Rs 82 million by persons with arteriosclerosis, Rs 68 million by arthritis patients, Rs 49 million by persons with cancer and Rs 37 million by persons with kidney problems. Besides this Rs 1222 million incurred by patients suffering from chronic diseases, there are, in addition some expenses, not listed in this group.

If we include those additional expenses also, the annual outlay incurred by persons with chronic diseases in Kerala in 2007 would be around Rs 1464 millions. With increasing aging and enhancing cost of drugs, this outlay is expected to keep on increasing in the years to come.

#### **Part IV**

### **COSTS ASSOCIATED WITH PREGNANCY AND CHILDBIRTH**

The enquiry about the medical costs of pregnancy and childbirth started with the following question: During the past 12 months, have you, or any other member of the household, been pregnant? If yes, what was the cost of consultancy during pregnancy and subsequent childbirth?

#### **Pregnancy Ratio**

Pregnancy ratio is an approximate measure of fertility level of a population. It is the ratio of the number of pregnancies in a year to the number of married women. It is similar to general fertility rate that is a standard measure of fertility.

In the 10,000 sample households, the number of married women was 15,011. 962 pregnancies were reported in the 12 months prior to the survey. These numbers give a crude pregnancy ratio of 6.4 percent.

Pregnancy ratio was the highest among the Muslim community, 9.7 percent and the lowest (which was close to half of that of the Muslim community) among the Christian community, 5.0 percent.

The ratio of the number of pregnancies to the number of married women under 45 years of age gives a more refined ratio for comparative purposes. This ratio was 13.3 percent for all women, but was 16.4 percent for Muslims, 12.0 percent for Hindus and 11.5 percent for Christians. Fertility is indeed much higher among the Muslim community than among Christians and Hindus (Table 15). The fertility rate of Muslim is about 42 percent higher than that of Christians.

Inter-community differentials are observable in inter-district variations in pregnancy ratio also. Kasaragod and Malappuram districts had the highest pregnancy ratio (Table 16). Pathanamthitta and Kottayam districts had the lowest. In fact, the rate for the latter two districts was less than half that of the two Malabar districts. Fertility rate in the former central Travancore districts - Pathanamthitta, Alappuzha, and Kottayam - was much lower than that in the Malabar region.

### **Pregnancy and Delivery**

After having identified all the pregnancies in the sample, the study collected detailed information about each pregnancy and the childbirth that followed. Such information included the result of pregnancy, the type of childbirth, the type of child delivery, the place of childbirth and the cost of consulting physicians during pregnancy and delivery of the baby. These details are discussed below.

### **Result of Pregnancy**

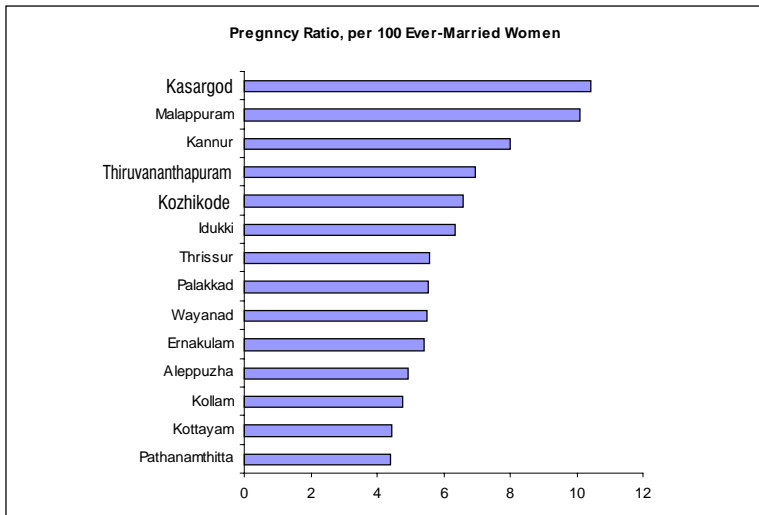
During the time of the survey, some of the women who were reported to be pregnant during the year would have reached advanced pregnancy, or would have delivered their babies or the pregnancy would have ended up in abortion. How many were there in each category?

**Table 15. Crude Pregnancy Ratio by Religion**

	Pregnancy	Married Women	Percent
Hindus	449	8409	5.3
Christians	134	2704	5.0
Muslims	379	3898	9.7
Total	962	15011	6.4

Refined Pregnancy Ratio by Religion  
Married Women Under 45 years

	Pregnancy	Married Women Under 45 years	Percent
Hindus	449	3756	12.0
Christians	134	1168	11.5
Muslims	379	2311	16.4
Total	962	7235	13.3

**Figure 29**



At the time of the survey, 27 percent of those who had been pregnant during the previous 12 months were still pregnant; they had not delivered their babies. About 71 percent had delivered their child and the remaining 2 percent had endured abortion.

The proportion of abortion (to total pregnancy) varied from 2.4 percent among Hindus to 1.8 percent among Muslims. No abortion was reported by households belonging to the Christian community in the sample of 10,000 households.

Several - including Kollam, Pathanamthitta, Kottayam, Ernakulam Wayanad and Kannur - of the 14 districts also reported no abortion at all. At the other extreme, Idukki showed the highest abortion rate of 6.5 percent.

### **Types of Childbirth**

Births could have been normal or premature. Most of the births reported in the sample were normal, but there were also a few (about 4.4 percent) which were premature. The proportion of premature births was 7.4 percent among Christians, but only 3.4 percent among Hindus, i.e., only half as much as that among Christians. Pathanamthitta district, (with 13.0 percent) and Kottayam district (with 10.7 percent) had relatively very high percentages of premature births. On the other hand, Kasaragod and Alappuzha districts reported no premature births.

### **Types of Delivery**

Childbirths could be normal, induced or by caesarean section. About 71 percent of the births were normal, only 1 percent was induced and 28 percent were delivered by caesarean section. Caesarean section deliveries were not infrequent. The proportion of caesarean section births varied from 23 percent among Muslims to 38 percent among Christians (Tables 17) and from 13 percent in Palakkad district to 56 percent in Kollam district. Besides Kollam, Caesarean section deliveries were very

common in Ernakulam (51 percent), Idukki (43 percent) Wayanad (39 percent) and Kottayam districts (39 percent)

**Table 16. Type of Delivery and Religion**

	Normal	Induced	Caesarean Section	Total
Hindus	68.5	1.0	30.5	100.0
Christians	62.1	0.0	37.9	100.0
Muslims	75.9	1.1	23.0	100.0
Total	70.7	0.9	28.5	100.0

**Table 17. Type of Delivery by Districts**

	Normal	Induced	Caesarean	Total
Thiruvananthapuram	69.6	0.0	30.4	100.0
Kollam	43.8	0.0	56.3	100.0
Pathanamthitta	69.6	0.0	30.4	100.0
Alappuzha	62.2	0.0	37.8	100.0
Kottayam	57.1	3.6	39.3	100.0
Idukki	57.1	0.0	42.9	100.0
Ernakulam	49.1	0.0	50.9	100.0
Thrissur	76.7	3.3	20.0	100.0
Palakkad	84.6	2.6	12.8	100.0
Malappuram	79.5	0.9	19.6	100.0
Kozhikode	82.8	1.7	15.5	100.0
Wayanad	61.5	0.0	38.5	100.0
Kannur	84.8	0.0	15.2	100.0
Kasargod	69.8	0.0	30.2	100.0
Total	70.7	0.9	28.5	100.0

## Place of Childbirth

The most common place of childbirth in Kerala is a hospital, government or private. Alternatives are Public Health Centres, and homes. In 2007, almost all childbirth in Kerala (99.7 percent) took place in hospitals, either government or private. The proportion of childbirth that took place in private hospitals (69 percent) was more than double that in government hospitals (31 percent). Very few women availed of the services of PHCs (public health centres) for childbirths.

The proportion of childbirth that occurred in private hospitals varied from 78 percent among Muslims to 59 percent among Hindus (Table 18). There were corresponding differences in the use of government hospitals for delivery.

Geographical variation in deliveries that occurred in private hospitals is also large. In Kasaragod district the highest proportion (91 percent) of the childbirths took place in private hospitals. Malappuram (84 percent) Idukki (81 percent) and Kannur (78 percent) were the other districts in which the use of private hospitals for delivery was high. The lowest utilization was in Wayanad district where only 31 percent of the childbirths took place in private hospitals (Table 19).

**Table 18. Place of Delivery and Religion**

	Govt. Hosp	Pvt. Hosp	Others	Total
Hindus	40.6	59.1	0.3	100.0
Christians	24.2	75.8	0.0	100.0
Muslims	21.7	77.6	0.7	100.0
Total	30.6	69.1	0.3	100.0

**Table 19. Place of Delivery by District**

Govt. Hospital	Pvt. Hosp	Others	Total	
Thiruvananthapuram	44.9	55.1	0.0	100.0
Kollam	50.0	50.0	0.0	100.0
Pathanamthitta	39.1	60.9	0.0	100.0
Alappuzha	43.2	56.8	0.0	100.0
Kottayam	35.7	64.3	0.0	100.0
Idukki	19.0	81.0	0.0	100.0
Ernakulam	21.8	78.2	0.0	100.0
Thrissur	25.0	75.0	0.0	100.0
Palakkad	43.6	56.4	0.0	100.0
Malappuram	14.3	83.9	1.8	100.0
Kozhikode	44.8	53.4	1.7	100.0
Wayanad	69.2	30.8	0.0	100.0
Kannur	20.3	78.5	1.3	100.0
Kasargod	9.3	90.7	0.0	100.0
Total	30.5	68.9	0.6	100.0

**Cost of Childbirth**

The total medical cost of pregnancy and childbirth includes doctors' consultancy fees before childbirth and the costs during and after childbirth. The cost varies according to religion, district of residence, nature of pregnancy, type of childbirth and place at which childbirth took place.

**Cost Variation by Religion and by District**

The average cost of consulting doctors during pregnancy was Rs 3,061. It varied from Rs 2,764 among Muslims to Rs 4,059 among Christians; and from Rs1,963 in Palakkad district to Rs 6,100 in

Pathanamthitta district. The cost was very low in Malappuram district and relatively very high in Ernakulam and Kollam districts.

The average cost of delivery of a baby was Rs 4,843, and it varied from Rs 4,385 among Hindus to Rs 5,599 among Christians; and from Rs 2,741 in Palakkad district to Rs 7,045 in Kasaragod district. It was also relatively high in Kollam and Idukki districts.

The total cost, including consultancy and childbirth, was on an average Rs 7,905. Here again, there were considerable variations by religion and by district. The highest cost was incurred by the Christian community, and by residents of Pathanamthitta district. The total cost in Pathanamthitta district was Rs 12,282 as against Rs 4,704 only in Palakkad district.

### **Cost Variation by Result of Pregnancy**

The cost of pregnancy varied by the result of the pregnancy. In cases in which pregnancy was continuing at the end of the survey period, there were no cost of delivery of the baby and therefore the reported total cost were lower. In cases in which pregnancy had resulted in delivery, the average cost was Rs 3,345 for consultancy and Rs 6,802 for delivery. The average total cost was Rs 7,904.

### **Cost Variation by Type of Child Birth**

Normal childbirth on an average cost about Rs 10,000, but premature childbirth cost double that amount, about Rs 20,000.

### **Cost Variation by Type of Delivery**

A Caesarean section delivery cost about Rs 16,000 compared to Rs 7,600 for normal childbirth. In spite of the very high cost involved, why a large proportion of childbirths in Kerala were through the caesarean section? Hospitals and doctors could have been playing a role in carrying out the high proportion of caesarean section childbirths.

### **Cost Variation by Place of Delivery**

The cost of childbirth has been the lowest when childbirth took place at home. It is relatively low in government hospitals also. There were very few births that took place in PHCs and therefore the cost estimate of Rs 10,166 for PHCs reported in the table may be very much biased on the high side. The cost incurred in private hospitals was the highest, Rs 12,000. Yet, private hospital is the preferred place for delivery for most persons in Kerala.

In Kerala in 2007, in the matter of selecting the place for childbirth or opting for normal or caesarean sections, the cost aspect was not of great concern to most families.

### **Variation by Migration status**

Cost of pregnancy was higher in households with NRKs than for households without NRKs. The average difference was about Rs 1,600.

## **Part V**

### **INDEBTEDNESS OF THE HOUSEHOLD**

#### **Source of Information**

Information about indebtedness was collected in this study by asking a series of questions beginning with the following:

During the past 12 months, did any member of the household apply for a loan from a bank or any other financial institution/private moneylender?

If the response was positive, additional information about each loan was obtained. They included interest rate, purpose of the loan, collateral, institution from which the loan was secured, etc.

It is thus evident that the data collected was of flows and not of stocks. The study is concerned with loans taken during the 12-month period prior to the date of the household survey. It is not about the total indebtedness.

The enquiry yielded information about 2,456 loans taken in 2006 and 824 loans taken in 2007.

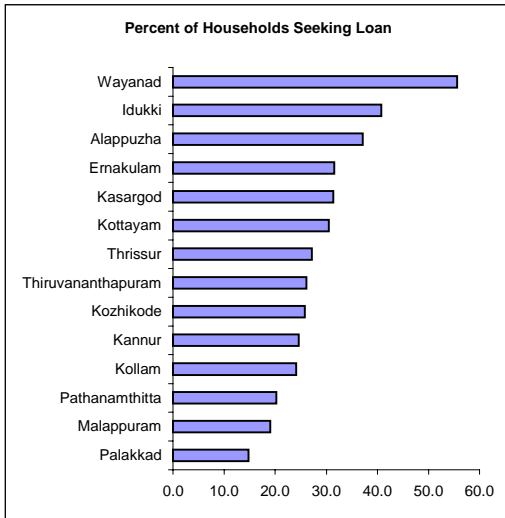
As elsewhere in most parts of the world, taking loans for meeting household needs has become a common practice in Kerala in recent years, especially among the middle class in urban areas. Who takes loans and who does not? From which institutions do households take loans more often? And at what rates of interest, and for what periods do households take loans? These are some of the themes or issues that are dealt with in this section.

### **Household Indebtedness**

Out of the 10,000 households in the sample 2,718 (27.2 percent) had applied for loans from banks or private agencies. Almost all of them got their loan applications approved. Thus, in 2007 more than a quarter of the Kerala households were indebted to one financial institution or another. When projected for the whole State, this works out to be about 2.05 million out of a total of 7.55 million households, in Kerala in 2007.

On the basis of projections, of the 5.77 million households that had bank accounts 1.87 million (32 percent) had applied for loans and 3.90 million (68 percent) had not. While 32 percent of households which had bank accounts applied for loans, only 10 percent of those which did not have bank accounts applied for loans.

Of the 2.05 million households which applied for loans, 1.87 million (91 percent) had bank accounts and 0.184 million households (9 percent) did not. Of the 5.50 million households which did not apply for loans, 3.90 million (71 percent) had bank accounts and 1.6 lakh did not.

**Figure 30**

The percentage of indebtedness varied from 32.7 among Christian households to 24.0 among Muslims. Hindus came in-between with about 26.5 percent. Among Hindus, the extent of indebtedness was the highest among the Ezhava community and the lowest among Brahmins. Among Christians, the Syro-Malabar Catholics had the highest percent of loan-seeking households (38 percent) and the Malankara Syrian Catholics had the lowest (22 percent).

Geographical location of the household is a key factor in Kerala which influenced the extent of seeking loans. While 56 percent of the households in Wayanad district had applied for loans, only 15 percent of the households in Palakkad district did so. The proportion of households seeking loans was more than the average in Wayanad, Idukki, Alappuza, Ernakulam, Kasaragod, and Kottayam districts. It was relatively low in Palakkad, Pathanamthitta, Kannur and Kollam districts.

The district with the largest number of loan-seeking households was Ernakulam, and the one with the lowest was Pathanamthitta.



Households in districts in which agriculture was a major economic pursuit appeared to have been availing loans more often than households in other districts.

On the whole, the extent of indebtedness was lower among households with emigrants. In general, households without migrants (any type) had a slightly higher propensity to borrow than households with migrants, but the difference was not large. Thus, migration does not seem to be a very significant factor in determining the propensity of households to take loans.

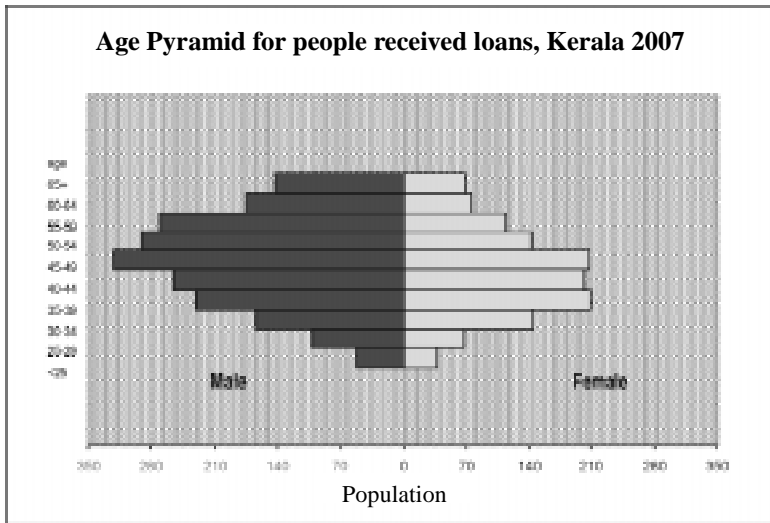
Persons living in luxurious houses were less likely to seek loans than persons living in poor houses. The same pattern held with respect to possession of consumer durables as well. For example, households which owned automobiles were less likely to apply for loans than those without automobiles.

### **Individual Indebtedness**

Some households had taken more than one loan. As a result, the number of loans is more than the number of households that took loans. Members in the 10,000 households in the sample had taken a total of 3,280 loans. This works out to be 32.8 loans per 100 households or 2.478 million individual private loans by the 2.053 million households in Kerala.

### **Characteristics of loan seekers**

The majority of those, 61 percent of the total, who sought loans were males. Among them 75 percent were heads of the households. Among female borrowers, 27 percent were heads of the households. Forty nine percent of females who took loans were spouses of the heads of households.

**Figure 31**

Age-wise, the largest numbers of loan takers were from the 45-49 years age group among males and from the 35-39 years age group among females. (Figure 31)

Educational level plays a significant role in persons seeking loans. Illiterate persons are less likely to apply for loans than educated persons. The propensity for taking loans was the highest among persons with middle-level education. Nearly half the number of loans was taken by persons with upper primary and secondary levels of education.

The employment status also is a significant factor that influences loan-seeking behaviour. Self-employed males who constituted only 18.3 in the sample population took 34 percent of the loans. Non-agricultural labourers who formed 27 percent of the male population took 26 percent of the loans.

Among females, persons engaged in household work had borrowed nearly 70 percent of the loans. They formed only 56 percent of the sample population.

### Sources of Loans

Nearly 70 percent of the persons who obtained loans in 2007 got them from banks - 44 percent from cooperative banks and 26 percent from commercial banks. About 10 percent took loans from private moneylenders. Less than 2 percent received loans from friends and relatives (Table 20).

**Table 20. Sources of loan availed by different religious groups**

Source	Hindus	Christians	Muslims	Total
Commercial Banks	24.4	33.2	23.7	26.5
Cooperative Banks	42.7	39.7	54.3	44.1
Non-Banking Institutions	10.3	6.8	6.0	8.6
Money Lenders	12.3	10.1	7.5	10.8
Friends and Relatives	1.8	1.9	1.8	1.8
Others	8.6	8.2	6.8	8.2
Total	100.0	100.0	100.0	100.0

There were, however, significant variations by religion. A higher proportion of Muslims obtain their loans from the banks. About 23 percent of the Hindu households took loans from non-banking institutions or moneylenders. The corresponding proportion for Muslim households was only 13.5. The proportion of households taking loans from friends and relatives was relatively small, and is fairly constant across all religious groups, 1.8 percent of the total.

Geographical location of the household rather than membership in particular social groups is more relevant in influencing the sources of loan finance of households. Nearly all loans of households from Kasaragod and Kannur districts were borrowed from banks. On the other hand in Pathanamthitta and Alappuzha districts only 54-55 percent of the households borrowed loans from banks. In Alappuzha 31 percent

of the loans were borrowed from non-banking institutions. In Ernakulam district 20 percent of the loans were borrowed from moneylenders and another 4.3 percent, from friends.

**Table 21. Purposes of the loans classified by religion**

	Hindus	Christians	Muslims	Total
Purchase of land	2.1	1.8	2.3	2.0
Agricultural Equipments	6.3	13.7	4.4	7.8
Investment in business	8.4	10.1	10.0	9.2
Purchase of house,	21.4	16.3	24.3	20.6
Purchase of Vehicle, TV etc	7.0	5.8	3.6	6.0
Medical Treatment	9.5	7.9	7.1	8.7
Education	5.5	7.4	3.4	5.6
Wedding	8.7	5.3	11.7	8.4
Loan Repayment	10.4	10.8	11.0	10.6
Others	20.7	21.0	22.2	21.0
Total	100.0	100.0	100.0	100.0

In some districts there were also other sources for loans. For example, in Thiruvananthapuram district, Kudumbasree and Ayalkoottam were important sources. Such diversification of the sources for loans was more common in south Kerala, particularly in the erstwhile Travancore and Cochin states, than in north Kerala.

### **Collateral for Loans**

Nearly a third of the loans were secured by offering land as collateral. Individual guarantee in lieu of collateral was also employed in as much as 36 percent of the cases. But houses were very rarely used as collateral.

Variation by religious communities is not very large in influencing the sources of loans. In all the three communities, personal guarantee

(one or more persons) was the most important substitute for collateral. Loans granted on the basis of personal guarantee were followed by loans granted with land as collateral in their relative importance in the total.

Variation by district was larger in the influence of the collaterals demanded for loans. In Wayanad district, as much as 84 percent of the loans were taken on the offer of land as collateral. On the other hand, in Alappuzha district only 18 percent of the loans were taken on the guarantee of land as collateral.

In Kannur and Kasaragod districts personal guarantee was the principal form of collateral offered. Houses were rarely given as collateral, except in Palakkad district where 11 percent of the loans were taken with house as collateral. In Idukki district also a fairly significant proportion of loans were raised with house as collateral. In Alappuzha district, house was not used as collateral at all.

### **Purpose of the Loan**

What are the purposes for which households in Kerala take loans? The purposes were several. The largest numbers of loans were raised for the purchase or construction of houses, 21 percent of the total (Table 23). The next important purpose was loan repayment. Such loans formed 11 percent of the total. One-twelfth of the loans were used for conducting marriages. Only about a tenth was used for investments in business. Loans for medical treatment were as numerous as loans for wedding expenses (8.7 percent).

Variation by religion was not, however, large. Muslims used a larger proportion of their loans for purchase of houses than the other communities did. Muslims used a much higher proportion of loans also for conducting marriages than other communities did. Christians led the other communities in the matter of investment in business and in the purchase of agricultural equipment. They used loans the least for marriage expenses.

Significant differences are observed in the patterns of utilization of loans across districts. While Wayanad used 48 percent of the loans for buying agricultural equipment, Tiruvananthapuram used very little for this purpose. Households in Tiruvananthapuram used much of the loans for loan repayment or investment in business. Households in Kottayam used the largest proportion for loan repayment.

### **Interest Rate**

Interest is charged sometimes on an annual rate basis; it is charged in quarterly, monthly, weekly or daily basis too. The average interest rate charged for all loans comes to about 16.2 percent per year. Nevertheless the annual interest rate varied from zero percent to 300 percent. About 37 percent of the loans were obtained at rates of 10 percent or below. Nearly 50 percent carried annual interest rates in the range of 11 and 15 percent per year. 3 percent of the loans were charged rates above 15 percent but below 21 percent. But a much larger proportion of borrowers paid rates of 30 percent or more.

Hindus in general obtained loans at higher rates of interest. Muslims contracted their loans at much lower rates.

Significant variations in interest rate existed across districts. The rate was the highest in Ernakulam district (28.4 percent) and the lowest in Palakkad district (9.6 percent). Excepting Wayanad district, where the rate was high (17.2 percent), in all other Malabar districts, the average interest rate for loans was found to be relatively low

Interest rates varied considerably by the source of the loan and the institution from which the loan was taken 20 and 21. Banks charged the lowest rates, the average being 11 percent. Moneylenders charged the highest rates on an average at about 47 percent. Non-banking institutions charged on an average about 17.5 percent. The same rate was found to prevail for loans taken from friends also.

**Table 22. Average interest rate by Purpose of Loan**

Purchase of land	13.6
Agricultural Equipments	11.2
Investment in business	14.8
Purchase of house,	13.6
Purchase of Vehicle, TV etc	20.1
Medical Treatment	23.2
Education	17.4
Wedding	14.5
Loan Repayment	14.4
Others	18.9
Average of the Total	16.2

Interest rates varied according to the purpose for which the loan was taken. The highest rate was charged on loans taken for medical treatment and for purchase of vehicles. Loans for the purchase of agricultural equipment carried lowest rates.

Interest rates also varied by the duration of the period for which the loan is taken. Annual loans carried the lowest interest rate, of 12.2 percent. Weekly loans were charged the highest interest rates.

### **Conclusion**

The survey brings to light that about 2.05 million households out of a total of 7.55 million households (27.2 percent) in Kerala had applied for loans during the 12-month period during 2006-07. They received 2.48 million private loans. This represents 32.7 loans per 100 households.

There is no evidence in the sample to suggest that loans are taken by Kerala households to support ostentatious living; rather they were taken to meet essential needs of the household such as buying or building houses, purchase of agricultural equipment, education of children and loan repayment. Banks were the main source (70 percent) of loans and interest charged was reasonable. Very few households had borrowed loans at exorbitant rates of interest.

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**Annex Table 1: Cost of Education by Districts  
(Using only those students who had paid)**

	Entrance Coaching	Registration Donation	Tution (monthly)	Private tution	Uniform shoes	Books Supplies	Transport to School
Trivandrum	5533	2007	497	216	497	626	186
Kollam	1580	2069	554	198	549	676	208
Pathanamthitta	4762	1871	539	265	703	934	190
Alappuzha	4571	2084	422	176	610	776	200
Kottayam	7270	5626	862	386	754	1149	179
Idukki	6000	1201	705	116	630	876	188
Ernakulam	7473	2636	541	159	680	914	179
Thrissur	8067	1181	422	171	629	538	152
Palakkad	10000	1185	437	123	569	459	186
Malappuram	4590	1021	273	175	681	487	133
Kozhikode	4750	1164	408	210	622	567	123
Wayanad	0	1041	502	270	797	836	108
Kannur	7000	1781	343	233	602	622	168
Kasaragod	3500	1417	376	253	583	470	184
Total	4775	1950	476	197	626	668	168

**Annex Table 2: Average cost for selected Health Services by districts (Rs)**

District	Medicines	Hospitalisation	Chronic Disease	All services
Trivandrum	319	7815	276	2247
Kollam	690	7808	216	3416
Pathanamthitta	345	5814	264	2542
Aleppuzha	325	6389	367	2318
Kottayam	963	4649	339	4623
Idukki	1274	4840	326	4121
Ernakulam	729	8522	394	3880
Thrissur	331	11697	299	2683
Palakkad	341	6835	337	2644
Malappuram	298	9127	342	1904
Kozhikode	530	11351	306	3212
Wayanad	2769	4766	192	5985
Kannur	431	11680	299	3722
Kasaragod	304	12636	273	3722
Total	498	7742	307	2992

**Annex Table 3: Prevalence Rate By Disease and District**

District	Diabetes	Heart Problem	Arthritis	Cholesterol	Blood Pressure	Asthma	Cancer	Kidney	Others	Total
Trrivandrum	3.1	1.3	0.8	0.5	4.1	2.0	0.3	0.2	9.4	21.7
Kollam	3.0	2.3	0.1	1.1	3.3	1.6	0.2	0.2	5.3	17.0
Pathanamthitta	4.4	1.0	0.6	1.3	3.9	1.6	0.6	0.5	4.7	18.7
Alappuzha	1.5	1.2	1.1	1.1	4.8	1.5	0.1	0.1	5.9	17.2
Kottayam	3.7	0.8	0.9	0.6	4.1	1.6	0.1	0.1	3.1	15.1
Idukki	3.3	1.3	1.6	2.2	4.9	1.9	0.0	0.4	4.9	20.4
Ernakulam	2.2	0.8	1.0	0.6	2.8	2.0	0.1	0.2	3.8	13.7
Thrichur	2.5	1.2	0.8	0.4	4.1	1.5	0.2	0.2	5.4	16.2
Palakkad	1.0	0.7	0.9	0.2	1.9	0.8	0.1	0.1	4.0	9.8
Malappuram	3.2	0.5	0.5	0.4	1.9	1.0	0.1	0.2	4.7	12.4
Kozhikode	3.6	1.2	0.8	0.5	2.6	1.4	0.3	0.3	4.6	15.3
Wayanad	0.8	1.1	0.5	0.1	3.3	1.2	0.0	0.4	9.2	16.6
Kannur	1.3	0.8	0.5	0.1	2.6	0.7	0.2	0.1	2.9	9.2
Kasaragod	1.3	0.8	0.1	0.1	2.4	1.3	0.2	0.0	3.8	9.8
Kerala	2.6	1.1	0.7	0.6	3.2	1.4	0.2	0.2	5.0	15.0



**Annex Table 5: Percent of Persons With Chronic Disease by type and by District**

District	Diabetes	Heart Problem	Arthritis	Cholesterol	Blood Pressure	Asthma	Cancer	Kidney	Others	Total
Trivandrum	14.5	5.8	3.7	2.2	18.9	9.4	1.2	0.8	43.4	100.0
Kollam	17.7	13.6	0.8	6.2	19.3	9.1	1.1	1.1	31.0	100.0
Pathanamthitta	23.8	5.6	3.4	7.1	20.7	8.6	3.1	2.5	25.3	100.0
Alappuzha	8.5	7.0	6.2	6.2	28.2	8.5	0.4	0.6	34.4	100.0
Kottayam	24.8	5.5	6.0	4.0	27.4	10.5	1.0	0.7	20.2	100.0
Idukki	16.0	6.2	7.7	10.7	24.3	9.5	0.0	1.8	24.0	100.0
Ernakulam	16.3	5.9	7.6	4.6	20.5	14.9	1.0	1.3	27.9	100.0
Thrichur	15.2	7.2	5.0	2.3	25.2	9.5	1.4	1.1	33.2	100.0
Palakkad	10.3	7.2	9.5	2.0	19.8	8.0	1.4	1.4	40.4	100.0
Malappuram	25.9	4.1	3.8	3.3	15.5	7.7	1.0	1.3	37.4	100.0
Kozhikode	23.4	8.0	5.1	3.3	17.2	9.3	1.8	1.6	30.3	100.0
Wayanad	4.8	6.9	3.2	0.5	19.6	7.4	0.0	2.1	55.6	100.0
Kannur	14.5	9.2	5.3	1.4	27.9	8.1	1.7	0.8	31.2	100.0
Kasaragod	12.7	7.6	0.6	0.6	24.2	13.4	1.9	0.0	38.9	100.0
Kerala	17.1	7.1	4.9	4.0	21.5	9.6	1.2	1.2	33.5	100.0

**Annex Table 6: Age Composition of Persons with Chronic Diseases**

AGE	Diabetes	Heart Problem	Arthritis	Cholesterol	BP
0 – 4	0.21	1.05	0.50	0.57	0.04
5 – 9	0.11	1.31	0.50	0.57	0.18
10 - 14	0.21	0.79	0.50	0.19	0.04
15 - 19	0.21	1.44	0.50	0.38	0.40
20 - 24	0.32	0.52	0.75	0.95	0.62
25 - 29	0.32	1.44	1.50	3.03	1.15
30 - 34	1.27	1.31	1.00	5.11	1.46
35 - 39	3.34	3.54	5.51	6.06	3.26
40 - 44	5.83	4.86	9.27	11.36	5.60
45 - 49	9.85	7.35	9.27	16.48	8.73
50 - 54	13.61	13.65	13.03	18.18	13.67
55 - 59	16.26	13.25	12.78	11.17	14.16
60 - 64	14.57	13.25	9.52	11.17	13.67
65 - 69	11.71	12.99	11.28	7.39	13.28
70 - 74	9.53	9.19	9.27	4.92	9.04
75 - 79	7.47	7.35	7.27	1.89	7.41
80 - 84	3.55	4.20	4.26	0.95	4.37

**Annex Table 7: Difference in Prevalence Rate, (Married-Widowed), By Sex and Age (Moving Averages)**

	Blood Pressure		Heart Problems		Cholesterol	
	Males	Females	Males	Females	Males	Females
15 - 19	0.7	3.8	0	-11.4	0	0.7
20 - 24	3.6	-0.9	0	-11.0	1.5	1.6
25 - 29	7.4	-10.3	-56.8	-9.2	3.8	-0.2
30 - 34	13.9	-17.7	2	-11.2	6.7	-0.7
35 - 39	1.0	-20.6	8.6	-12.3	10.4	-0.2
40 - 44	-9.3	-29.4	-10	4.9	8.4	1.9
45 - 49	-0.8	-33.3	-5.5	3.1	0.7	5.9
50 - 54	-0.4	-26.1	29.3	2.7	-0.4	8.5
55 - 59	-9.3	-27.5	-6.8	9.8	-12.9	5.4
60 - 64	4.8	-38.7	6.7	12.2	-13.1	0.8
65 - 69	14.8	-49.5	25.1	-2.0	-11.1	-4.0
70 - 74	-0.9	-82.0	6.8	-2.9	-7.5	-2.2
75 - 79	-46.4	-70.0	-41.8	-15.7	-8.8	44.1
80 - 84	-44.1	-62.6	-11.1	-20.7	0.9	47.7

**Annex Table 8: Prevalence Rate Age and Sex (per 1000 population)**

	Diabetes			Blood Pressure			Heart Problem		
	Males	Females	persons	Males	Females	persons	Males	Females	persons
0-4	0.67	2.09	1.36	0.00	0.00	0.34	4.70	0,7	2.73
5-9	1.10	0.00	0.59	1.10	1.20	1.18	4.00	1.84	2.95
10-14	1.80	0.60	1.20	0.60	0.00	0.30	1.80	1.84	1.80
15-19	2.10	0.00	1.09	2.60	2.27	2.46	3.20	2.84	3.01
20-24	1.10	1.88	1.50	2.67	4.23	3.50	1.60	,47	1.00
25-29	0.00	3.13	1.63	6.21	7.80	7.06	2.80	3.13	2.99
30-34	7.30	7.58	7.44	11.27	9.30	10.23	2.00	4.08	3.10
35-39	20.10	18.61	19.28	18.75	25.70	22.65	7.60	8.76	8.26
40-44	38.30	38.94	38.64	34.26	52.80	44.61	12.70	13.19	13.00
45-49	62.50	60.93	61.63	52.10	76.50	65.61	23.80	14.34	18.56
50-54	93.80	92.86	93.32	106.10	118.50	112.56	48.10	28.41	37.76
55-59	141.90	108.10	124.85	103.40	157.30	130.54	57.40	25.00	41.07
60-64	169.10	137.00	152.61	148.60	194.20	172.03	75.40	37.76	56.05
65-69	146.30	135.30	140.50	178.50	202.90	191.35	89.90	38.65	62.94
70-74	174.10	156.90	164.58	143.70	223.70	187.56	66.80	61.77	64.04
75-79	165.40	176.50	171.32	173.20	230.80	204.13	78.70	58.82	68.04
80-84	191.71	113.64	146.61	150.30	265.20	216.63	72.50	68.18	70.02
85-89	151.90	85.53	108.23	0.0	0.0	216.45	88.60	52.63	64.94
90-94	58.82	47.62	52.63	117.65	214.29	171.05	117.65	0.00	52.63
95-99	0.00	0.00	0.00	0.00	125.00	76.92	0.00	0.00	0.00
100&above	500.00	333.33	400.00	500.00	333.33	400.00	0.00	0.00	0.00
Grand Total	43.86	40.85	42.29	42.03	58.82	50.78	20.90	13.54	17.07



**Annex Table 8: (Cont'd.)**

	Asthma			Cancer			Cholesterol		
	Males	Females	persons	Males	Females	persons	Males	Females	persons
0-4	8.00	4.20	6.13	0.00	0.00	0.00	0.00	0.00	0.00
5-9	7.10	5.50	6.78	0.60	0.00	0.29	0.60	0.00	0.88
10-14	8.80	5.50	7.19	0.60	0.00	0.30	0.00	0.00	0.00
15-19	3.70	4.00	3.83	0.00	1.10	0.55	0.00	0.60	0.27
20-24	1.10	1.4	1.25	0.00	0.50	0.25	0.00	0.90	0.50
25-29	2.80	5.7	4.34	0.60	1.00	0.81	1.10	1.60	1.36
30-34	6.60	6.40	6.51	0.00	0.00	0.00	5.30	4.70	4.96
35-39	6.90	14.20	11.02	0.00	1.60	0.92	10.40	6.60	8.26
40-44	15.10	17.60	16.51	0.00	5.00	2.81	13.60	9.40	11.24
45-49	13.40	27.50	21.21	2.20	2.40	2.32	17.90	21.50	19.88
50-54	21.40	37.40	29.77	3.10	9.00	6.17	28.20	34.70	31.59
55-59	33.60	37.90	35.79	1.60	6.50	4.07	44.30	33.70	39.04
60-64	45.70	33.40	39.40	6.90	10.80	8.88	37.70	26.00	32.74
65-69	64.40	62.80	63.57	8.00	6.00	6.99	37.60	37.40	37.51
70-74	76.90	53.40	64.04	8.10	6.70	7.32	30.40	40.10	35.68
75-79	86.60	72.40	78.98	2.60	6.80	4.86	44.60	20.40	31.59
80-84	93.30	56.80	72.21	5.20	7.60	6.56	10.40	30.30	21.88
85-89	88.60	65.80	73.59	12.70	0.00	4.33	12.70	26.30	21.65
90-94	29.40	47.62	39.47	0.00	0.00	0.00	0.00	23.81	13.16
95-99	200.00	0.00	76.92	0.00	0.00	0.00	0.00	0.00	0.00
100&above	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grand Total	17.16	18.53	17.87	1.45	2.79	2.15	11.92	11.74	11.83

**Annex Table 8: (Cont'd.)**

	Arthritis			Other diseases		
	Males	Females	persons	Males	Females	persons
0-4	0.00	1.39	0.68	30.69	23.68	27.26
5-9	0.57	0.61	0.59	22.13	25.15	23.58
10-14	1.10	0.00	0.60	26.38	30.02	28.16
15-19	0.00	1.14	0.55	20.08	22.71	21.35
20-24	1.07	0.47	0.75	27.76	24.46	26.01
25-29	2.26	1.04	1.63	27.12	26.11	26.59
30-34	1.33	1.17	1.24	43.74	39.04	41.24
35-39	9.03	4.93	6.73	54.17	50.36	52.04
40-44	6.37	18.22	13.00	58.96	81.03	71.30
45-49	6.70	16.73	12.26	78.87	82.44	80.85
50-54	12.97	24.26	18.88	90.01	99.10	94.77
55-59	13.13	28.23	20.74	83.68	111.29	97.60
60-64	11.43	30.20	21.09	105.14	114.35	109.88
65-69	25.50	31.40	28.61	120.81	131.64	126.51
70-74	24.29	41.74	33.85	119.43	116.86	118.02
75-79	28.87	40.72	35.24	178.48	126.70	150.67
80-84	25.91	45.45	37.20	170.98	83.33	120.35
85-89	0.00	52.63	34.63	113.92	138.16	129.87
90-94	0.00	95.24	52.63	176.42	261.90	223.68
95-99	0.00	125.00	76.92	200.00	0.00	76.92
100&above	0.00	0.00	0.00	0.00	333.33	200.00
Grand Total	6.12	11.52	8.94	54.70	58.86	56.87

**Annex Table 9: Pregnancy Ratio by districts**

	Pregnancy	EM Women	Ratio
Trivandrum	109	1569	6.9
Kollam	61	1281	4.8
Pathanamthitta	28	633	4.4
Aleppuzha	50	1018	4.9
Kottayam	40	900	4.4
Idukki	31	489	6.3
Ernakulam	82	1514	5.4
Thrissur	78	1402	5.6
Palakkad	64	1158	5.5
Malappuram	154	1522	10.1
Kozhykode	90	1370	6.6
Wayanad	20	364	5.5
Kannur	104	1302	8.0
Kasaragod	51	489	10.4
Total	962	15011	6.4

**Annex Table 10: Abortion Rate by Districts**

Trivandrum	3	109	2.8
Kollam	0		0.0
Pathanamthitta	0		0.0
Alappuzha	2	50	4.0
Kottayam	0		0.0
Idukki	2	31	6.5
Ernakulam	0		0.0
Thrissur	2	78	2.6
Palakkad	2	64	3.1
Malappuram	3	154	1.9
Kozhikode	3	90	3.3
Wayanad	0		0.0
Kannur	0		0.0
Kasaragod	1	51	2.0
Total	18	962	1.9

**Annex Table 11: Pregnancy by of Type of Child Birth and Districts**

	Normal	Premature	% Premature
Trivandrum	67	2	2.9
Kollam	45	3	6.3
Pathanamthitta	20	3	13.0
Aleppuzha	37	0	0.0
Kottayam	25	3	10.7
Idukki	20	1	4.8
Ernakulam	50	5	9.1
Thrissur	57	3	5.0
Palakkad	38	1	2.6
Malappuram	107	5	4.5
Kozhikode	57	1	1.7
Wayanad	12	1	7.7
Kannur	77	2	2.5
Kasaragod	43	0	0.0
Total	655	30	4.4

**Annex Table 12: Cost of Child Birth By District (Rs)**

	Consultation	Delivery	Total
Trivandrum	4235	3998	8233
Kollam	4970	4866	9836
Pathanamthitta	6100	6182	12282
Aleppuzha	3023	5400	8423
Kottayam	3295	5395	8690
Idukki	2514	6144	8658
Ernakulam	4992	5621	10613
Thrissur	2661	5321	7982
Palakkad	1963	2741	4704
Malappuram	1999	5169	7168
Kozhikode	3464	3282	6746
Wayanad	2484	3015	5499
Kannur	1197	4640	5837
Kasaragod	2540	7045	9585
Total	3061	4844	7905

**Annex Table 13: Cost Pregnancy by place of delivery**

	Consultation	Delivery	Total
Government Hospital	2946	3242	6188
Private Hospital	3540	8375	11915
Public Health Centre	1233	8933	10166
Dispensary	3061	4843	7904
At Home	1000	2000	3000

**Annex Table 14: Cost by Type of Delivery**

	Consultancy	Delivery	Total
Normal	2651	4911	7562
Induced	3550	10750	14300
Caesarian	5062	11376	16438
Total	11263	27037	38300

**Annex Table 15: Cost of Pregnancy by Place of Delivery**

	NRK	No NRK	NRK	No NRK
Normal	106	286	69.3	69.6
Induced	3	3	2.0	0.7
Caesarian	44	122	128.8	29.7
Total	153	411	100.0	100.0

**Annex Table 16: Percent of Households Seeking Loan by District**

	Seeking	Total	Percent
Trivandrum	287	1100	26.1
Kollam	217	900	24.1
Pathanamthitta	91	450	20.2
Aleppuzha	260	700	37.1
Kottayam	198	650	30.5
Idukki	163	400	40.8
Ernakulam	331	1052	31.5
Thrissur	258	950	27.2
Palakkad	118	799	14.8
Malappuram	171	899	19.0
Kozhikode	219	850	25.8
Wayanad	139	250	55.6
Kannur	172	700	24.6
Kasaragod	94	300	31.3
Total	2718	10000	27.2

**Annex Table 17: Sources of Loans by Districts**

	Commercial	Cooperative	Non-Banking	Money lenders	Friends	Others	Total
Trivandrum	30.6	26.0	7.1	8.7	1.9	25.7	100.0
Kollam	29.5	36.7	9.1	18.6	1.4	4.8	100.0
Pathanamthitta	21.2	33.3	7.1	16.2	1.0	21.2	100.0
Alappuzha	34.3	19.1	30.9	12.8	0.7	2.2	100.0
Kottayam	26.9	51.9	2.7	13.6	2.3	2.7	100.0
Idukki	27.7	48.5	11.2	9.7	1.5	1.5	100.0
Ernakulam	13.2	44.0	6.0	19.7	4.3	12.7	100.0
Thrissur	20.3	52.8	3.9	8.9	3.9	10.2	100.0
Palakkad	36.2	51.7	1.7	5.2	0.9	4.3	100.0
Malappuram	19.8	61.0	8.1	0.0	1.2	9.9	100.0
Kozhikode	22.1	52.0	2.6	13.7	1.1	8.5	100.0
Wayanad	53.8	32.8	4.3	6.5	0.5	2.2	100.0
Kannur	18.6	76.0	3.4	0.0	0.5	1.5	100.0
Kasaragod	29.5	66.1	1.8	0.9	0.0	1.8	100.0
Total	26.5	44.1	8.6	10.8	1.8	8.2	100.0

**Annex Table 18: Collateral for Loan By Districts**

	None	Land	House	Animals	Personal	Crops	Joint	Others	Total
Trivandrum	3.1	29.3	2.8	0.3	14.0	0.0	13.7	36.8	100.0
Kollam	7.5	45.8	2.2	0.0	11.9	0.0	11.0	21.6	100.0
Pathanamthitta	8.3	28.7	3.7	0.0	9.3	0.0	28.7	21.3	100.0
Alappuzha	1.7	17.6	0.2	0.2	7.5	0.2	25.5	47.0	100.0
Kottayam	0.8	29.3	1.9	0.0	25.2	0.0	3.0	39.8	100.0
Idukki	0.0	39.8	6.8	0.5	33.5	1.0	13.1	5.3	100.0
Ernakulam	1.0	17.6	1.7	0.0	20.7	1.2	23.3	34.5	100.0
Thrissur	2.2	37.2	7.7	0.6	34.0	0.0	2.9	15.4	100.0
Palakkad	9.4	40.6	10.9	0.0	14.8	0.0	8.6	15.6	100.0
Malappuram	8.0	37.4	5.9	0.0	11.2	0.0	10.7	26.7	100.0
Kozhikode	7.5	29.7	3.1	0.0	35.5	0.3	4.8	19.1	100.0
Wayanad	0.0	83.9	1.1	0.5	3.8	0.0	3.8	7.0	100.0
Kannur	2.4	28.7	1.4	0.0	53.1	0.0	0.5	13.9	100.0
Kasaragod	1.8	29.8	0.9	0.0	55.3	0.0	2.6	9.6	100.0
Total	3.3	32.8	3.2	0.2	22.6	0.3	11.9	25.8	100.0



**Annex Table 19: Average Interest Rate by Districts**

Trivandrum	15.28
Kollam	15.07
Pathanamthitta	18.10
Alappuzha	18.74
Kottayam	13.98
Idukki	12.06
Ernakulam	28.64
Thrissur	12.84
Palakkad	10.58
Malappuram	11.27
Kozhikode	18.59
Wayanad	11.18
Kannur	11.43
Kasaragod	11.04
Total	16.22

**Anne Table 20: Average Interest Rate by Source**

Commercial Banks	11.27
Cooperative Banks	11.31
Non-Banking Institutions	17.45
Money Lenders	47.30
Friends and Relatives	18.00
Others	15.90
Total	16.22

**Annex Table 21: Loans by Employment Status of the loan Seeker**

	Males	Females	Total	Males	Females	Total
Central State government	105	27	132	5.2	2.1	4.0
Quasi-Government	38	10	48	1.9	0.8	1.5
Private Sector	142	34	176	7.1	2.7	5.4
Self Employed	686	69	755	34.2	5.4	23.0
Unpaid Family Worker	14	10	24	0.7	0.8	0.7
Agricultural Labourers	217	31	248	10.8	2.4	7.6
Non-Agricultural Labourers	525	76	601	26.2	6.0	18.3
Persons Seeking Work	34	34	68	1.7	2.7	2.1
Persons Not seeking Work	10	1	11	0.5	0.1	0.3
Students	15	14	29	0.7	1.1	0.9
Household Work	7	887	894	0.3	69.5	27.3
Others	211	83	294	10.5	6.5	9.0
Total	2004	1276	3280	100.0	100.0	100.0

**Annex Table 22: Utilization of Loan by Districts**

	1	2	3	4	5	6	7	8	9	10	Total
Trivandrum	1.6	1.9	16.1	16.7	2.9	9.0	2.9	3.2	19.3	26.4	100.0
Kollam	3.3	8.1	11.9	17.6	2.9	10.5	8.6	5.7	13.8	17.6	100.0
Pathanamthitta	2.0	6.1	23.2	10.1	8.1	8.1	5.1	4.0	14.1	19.2	100.0
Alappuzha	2.2	0.2	13.0	14.5	4.7	6.6	10.5	8.3	8.8	31.1	100.0
Kottayam	0.4	4.5	9.5	14.8	11.7	11.4	9.5	9.1	20.1	9.1	100.0
Idukki	2.4	5.3	7.8	21.8	7.8	12.1	3.9	5.3	5.3	28.2	100.0
Ernakulam	2.4	7.0	5.0	14.7	10.3	12.3	7.0	9.9	10.6	20.9	100.0
Thrissur	2.6	4.9	7.5	22.0	7.2	6.9	0.3	10.2	14.8	23.6	100.0
Palakkad	0.9	21.6	3.4	15.5	5.2	5.2	2.6	12.1	3.4	30.2	100.0
Malappuram	1.2	3.5	8.1	22.1	4.1	4.7	3.5	21.5	8.7	22.7	100.0
Kozhikode	1.8	2.6	7.7	18.8	3.7	6.6	6.6	14.4	10.0	27.7	100.0
Wayanad	3.8	47.8	3.8	16.1	3.2	11.8	7.5	1.1	1.6	3.2	100.0
Kannur	2.0	7.4	8.3	52.9	3.9	5.9	1.0	5.9	2.9	9.8	100.0
Kasaragod	0.9	16.1	1.8	54.5	6.3	5.4	2.7	2.7	1.8	8.0	100.0
Total	2.0	7.8	9.2	20.6	6.0	8.7	5.6	8.4	10.6	21.0	100.0

1: Purchase of land; 2: Purchase of agricultural equipment; 3: Investment in Business; 4: Purchase of house (including construction); 5: Purchase of consumer durables (TV, Fridge, Vehicle); 6: Medical Treatment; 7: Educational Purpose; 8: Wedding and Dowry; 9: Loan repayment; 10: Others

## Bibliography

- Irudaya Rajan, S. 2004. "From Kerala to the Gulf: Impacts of Labour Migration," *Asia Pacific Migration Journal*, Volume 13, No.4, Pp. 497-509.
- Irudaya Rajan, S. 2006. "Remittances". Pp. 75-77, In Brij V Lal. 2006 (ed). *The Encyclopedia of the Indian Diaspora*. Editions Didier Millet. Singapore/Paris.
- Irudaya Rajan, S and P R Gopinathan Nair. 2006. "Saudi Arabia, Oman and the Gulf States". Pp. 222-233, In Brij V Lal. 2006 (ed). *The Encyclopedia of the Indian Diaspora*. Editions Didier Millet. Singapore/Paris.
- Irudaya Rajan and Prabhat Kumar. 2008. "International Migration from India in the Last Two Centuries". In D Narayana, Raman Mahadevan, and K Narayanan Nair (eds) 2008. *From Past to Present: Readings on Indian Economy*. (forthcoming).
- Irudaya Rajan, S and U S Mishra. 2007. 'Managing Migration in the Philippines: Lessons for India'. Centre for Development Studies *Working Paper No. 393*. Thiruvananthapuram. [www.cds.edu](http://www.cds.edu)
- Marie Percot and S Irudaya Rajan. 2007. "Female Emigration from India: Case Study of Nurses". *Economic and Political Weekly*, Volume 42, No.4, Pp.318-25.
- Zachariah, K.C and S Irudaya Rajan. 2008d. "Migration, Remittances and Employment: Short-term Trends and Long-Term Implications. Centre for Development Studies *Working Paper No. 395*. Thiruvananthapuram. [www.cds.edu](http://www.cds.edu)
- Zachariah, K.C and S Irudaya Rajan. 2008c. *Migration and Development: The Kerala Experience*, Daanish Publishers, New Delhi.
- Zachariah, K C and S Irudaya Rajan. 2008b. "Economic Consequences of Emigration from Kerala: Emigration and Unemployment". Chapter 4, Pp. 50-75 in B A Prakash and V R Prabhakaran Nair. 2008. *Kerala's Development Issues in the New Millennium*. Serials Publications, New Delhi.
- Zachariah, K C and S Irudaya Rajan. 2008a. "Migration and Development". Chapter 14, Pp. 381-402 in Planning Commission, Government of India. 2008. *Kerala Development Report*. Academic Foundation, New Delhi.

- Zachariah, K C, B A Praksah and S Irudaya Rajan. 2007. "Aspects of Indian Labour Diaspora in the United Arab Emirates," Chapter 9, Pp. 205-236 in Prakash C Jain (ed). *Indian Diaspora in West Asia: A Reader*. Manohar Publishers and Distributors, New Delhi.
- Zachariah, K.C and S Irudaya Rajan. 2007. "Economic and Social Dynamics of Migration in Kerala, 1999-2004: Analysis of Panel Data," Centre for Development Studies *Working Paper No. 384*. Thiruvananthapuram. [www.cds.edu](http://www.cds.edu)
- Zachariah, KC, PR Gopinathan Nair and S Irudaya Rajan. 2006. *Return Emigrants in Kerala: Welfare, Rehabilitation and Development*. Manohar Publishers and Distributors, New Delhi.
- Zachariah, K C and S Irudaya Rajan. 2006b. "Unemployment in Kerala at the Turn of the Century: Insights from CDS Gulf Migration Studies," Chapter 13, Pp.322-360 in R.Sthanumoorthy. (ed). *Kerala Economy: Achievements and Challenges*. The ICAFI University Press, Hyderabad.
- Zachariah, K C and S Irudaya Rajan. 2006a. "Internal Migration in Kerala" Paper presented at the conference on Macroeconomic Policies, Agriculture and Institutions: A Conference in Honor of Professor A.Vaidyanathan, held at the Institute of Economic and Social Change, Bangalore, 9-10 April.
- Zachariah, K C and S Irudaya Rajan. 2005. "Unemployment in Kerala at the Turn of the Century: Insights from CDS Gulf Migration Studies," Centre for Development Studies *Working Paper No. 374*. Thiruvananthapuram. [www.cds.edu](http://www.cds.edu)
- Zachariah, K C and S Irudaya Rajan. 2004b. "Gulf Revisited: Economic Consequences of Emigration from Kerala – Emigration and Unemployment," Centre for Development Studies *Working Paper No. 363*. Thiruvananthapuram. [www.cds.edu](http://www.cds.edu)
- Zachariah, K C and S Irudaya Rajan. 2004a. "Gulf Emigration of Women in Kerala" *Samyukta*, a Journal of Women's Studies, Volume IV, No.2, Pp. 41-52.
- Zachariah, K C, B A Praksah and S Irudaya Rajan. 2004. "Indian Workers in UAE: Employment, Wages and Working Conditions," *Economic and Political Weekly*, Volume XXXIX, No. 22, May 29 2004, Pp.2227-2234. 56

- Zachariah, KC, ET Mathew and S Irudaya Rajan. 2003. *Dynamics of Migration in Kerala. Dimensions, Determinants and Consequences*, Hyderabad: Orient Longman Pvt Limited.
- Zachariah, K.C, B A Prakash and S Irudaya Rajan. 2003. "The Impact of Immigration Policy on Indian Contract Migrants: The Case of the United Arab Emirates," *International Migration*, Volume 41. No.4, Pp. 161-172.
- Zachariah, K C, KP Kannan and S Irudaya Rajan. 2002. *Kerala's Gulf Connection: CDS Studies on International Labour Migration from Kerala State in India*. Centre for Development Studies (Thiruvananthapuram) Monograph Series.
- Zachariah, KC, BA Prakash and S Irudaya Rajan. 2002. "Gulf Migration Study: Employment Wages and Working Conditions of Kerala Emigrants in United Arab Emirates," Centre for Development Studies (Thiruvananthapuram) *Working Paper No.326, 2002*. [www.cds.edu](http://www.cds.edu)
- Zachariah, KC, PR Gopinathan Nair and S Irudaya Rajan. 2001. "Return Emigrants in Kerala: Rehabilitation Problems and Development Potential," Centre for Development Studies (Thiruvananthapuram) *Working Paper No.319, 2001*. [www.cds.edu](http://www.cds.edu)
- Zachariah, KC, E.T. Mathew and S.Irudaya Rajan. 2001a. "Impact of Migration on Kerala's Economy and Society," *International Migration*, Volume 39, No.1, Pp. 63-88. (First published as a CDS Working Paper No. 297. [www.cds.edu](http://www.cds.edu))
- Zachariah, KC, E.T. Mathew and S.Irudaya Rajan. 2001b. "Social, Economic and Demographic Consequences of Migration on Kerala," *International Migration*, Volume 39, No. 2, Pp. 43-71. (First published as a CDS Working Paper No. 303. [www.cds.edu](http://www.cds.edu))
- Zachariah, K C and S Irudaya Rajan. 2001a. "Gender Dimensions of Migration in Kerala: Macro and Micro Evidence," *Asia Pacific Population Journal*, 2001, 16 (3), pp. 47-70.
- Zachariah, K C and S Irudaya Rajan. 2001b. "Migration Mosaic in Kerala. Trends and Determinants," *Demography India*, 2001, 30 (1), pp. 137-165. 57.

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