

## Chapter 3

### Preliminary Analysis

In this chapter we describe the preliminary data analysis based on the 2000 population census data for the 14 southern provinces. In the first section we describe variables. In section 3.2 we show age distributions of the population separated by province, gender, area and religion. In section 3.3 we examine life tables by province.

#### 3.1 Variables of Interest

The variables of interest for this study include five determinants and one outcome.

Province is a nominal determinant. It comprises the 14 provinces in Southern Thailand. Age group is an ordinal determinant comprising the age groups (0-4, 5-9, ..., 85+). Gender, area and religion are binary determinants. Death is the binary outcome.

Their roles and data types are shown in Table 3.1

Variable	Role	Type
Province	Determinant	Nominal (14)
Age Group	Determinant	Ordinal (18)
Gender	Determinant	Binary
Area	Determinant	Binary
Religion	Determinant	Binary
Death	Outcome	Binary

*Table 3.1: Variable roles and types in this study*

### 3.2 Age Distribution

The age-sex distribution of a population can be most clearly presented in a graphical form known as a population pyramid. Figure 3.1 and Figure 3.2 show the population pyramids for the 14 southern provinces. The age distributions for the Muslim and non-Muslim population in these provinces are quite different, with the young Muslim populations much more than those of the non-Muslim populations, particularly in Pattani, Narathiwat and Yala. The population structures for the Muslim and non-Muslim population in Phuket are similar, with the middle age groups (20-24, 25-29, 30-34) having higher proportion.

Next we investigated the population distribution by age, gender, religion and area of residence. In each province there are eight combinations of subgroups (urban-male Muslim, rural-male Muslim, urban-female Muslim, rural-female Muslim, urban-male non-Muslim, rural-male non-Muslim, urban-female non-Muslim, and rural-female non-Muslim). The age distributions for these various subgroups of the population in each province are shown in Figures 3.3 – 3.16.

It is apparent from these graphs that the percentages of the two young age groups (0-4 and 5-9) for rural-male and rural-female Muslim are higher than those of other subgroups of populations in all provinces with the exception for Phatthalung Phuket Ranong Satun and Trang. The differences in the percentage of young population (up to age 25) for the Muslim and non-Muslim can be seen clearly in Narathiwat, Pattani and Yala.

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ศูนย์วิจัยและข้อมูลประชากร

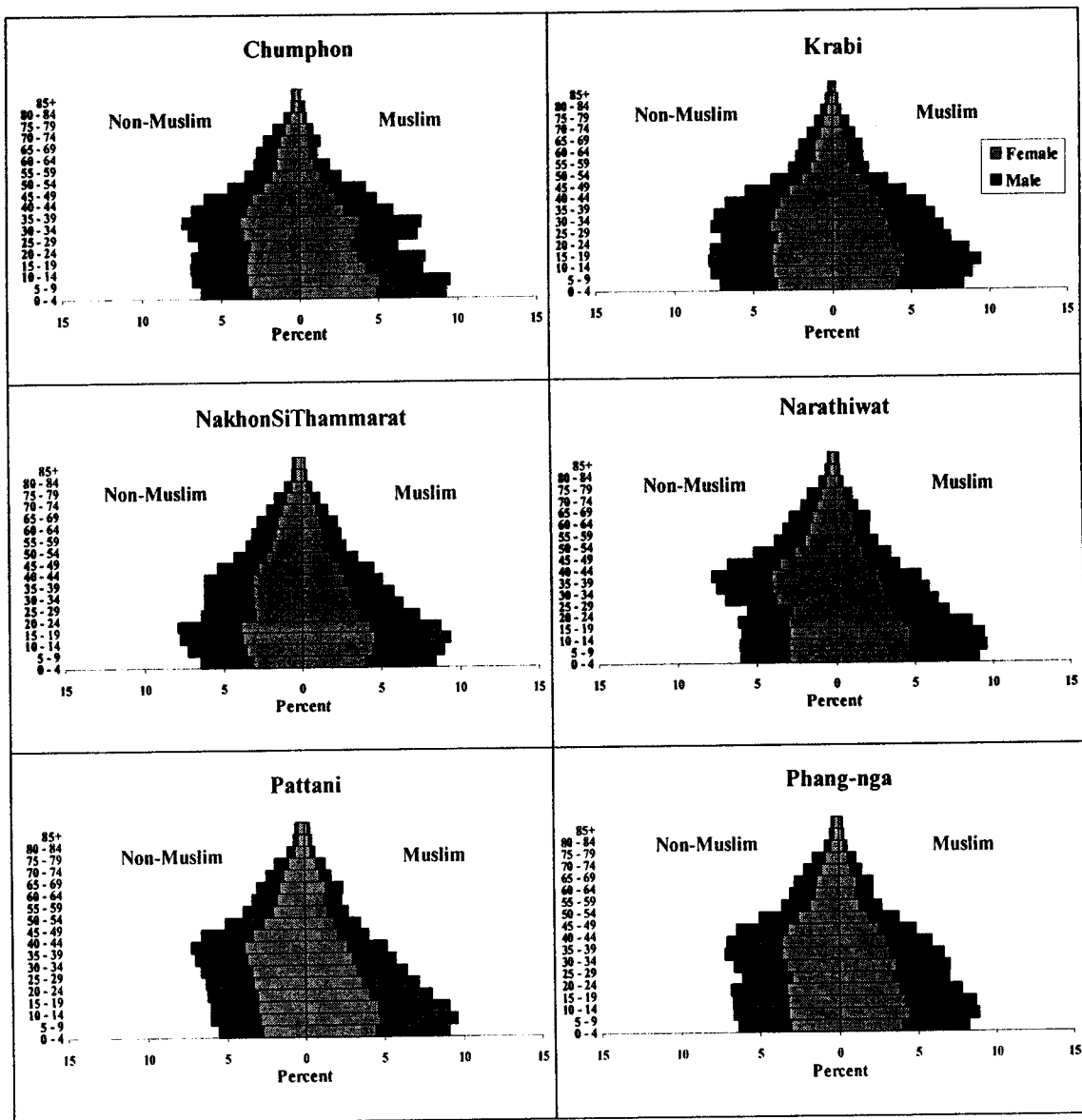


Figure 3.1: Age pyramids for Muslim and non-Muslim population for six provinces in Southern Thailand

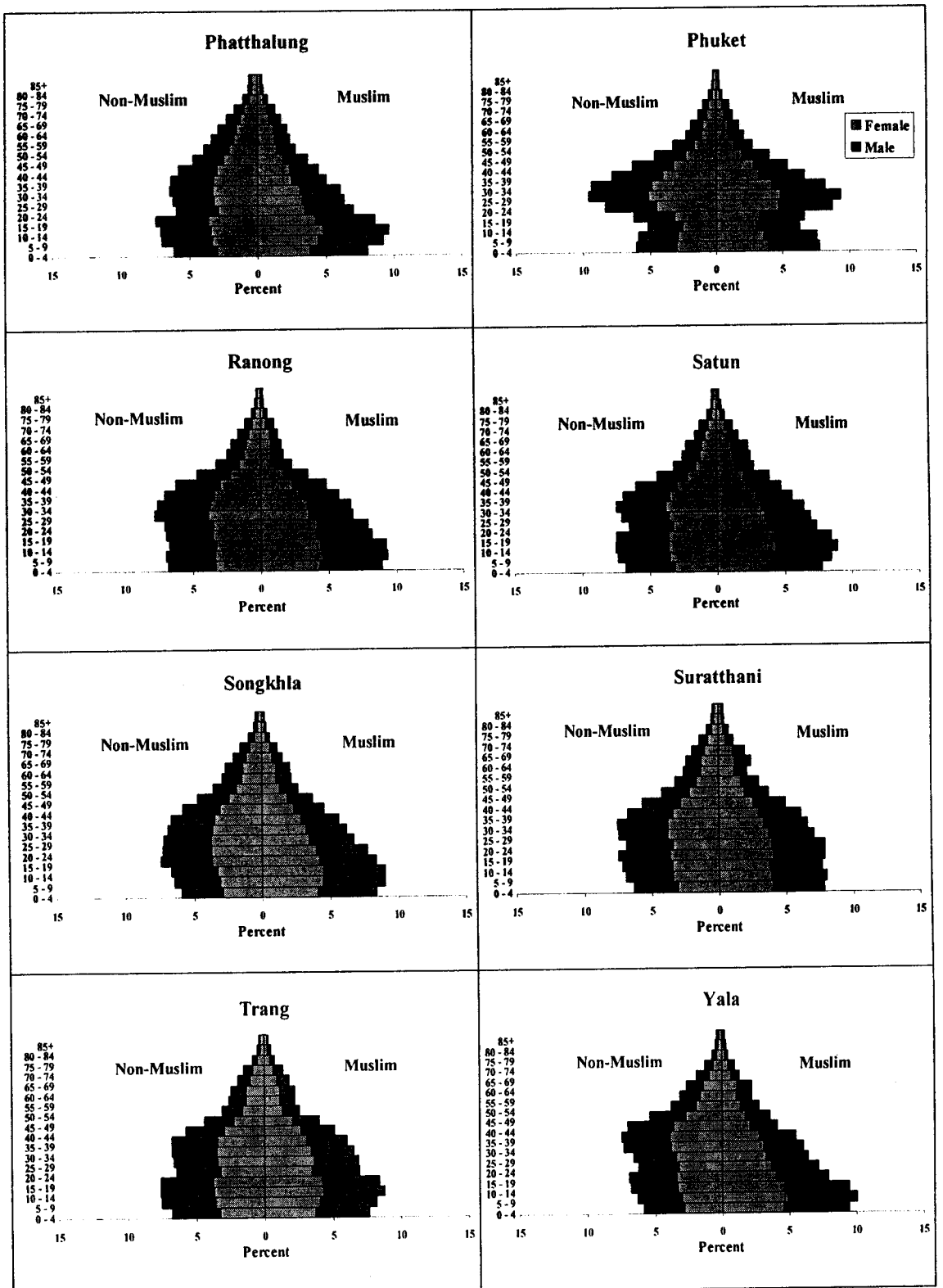


Figure 3.2: Age pyramids for Muslim and non-Muslim population for eight provinces in Southern Thailand

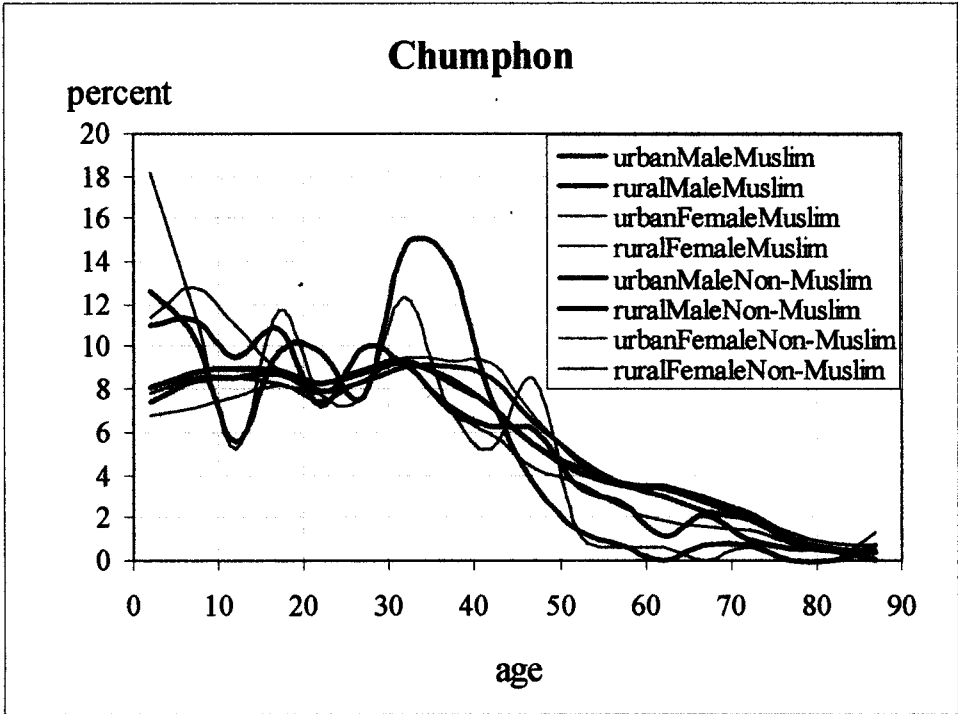


Figure 3.3: Percent of the population in Chumphon province

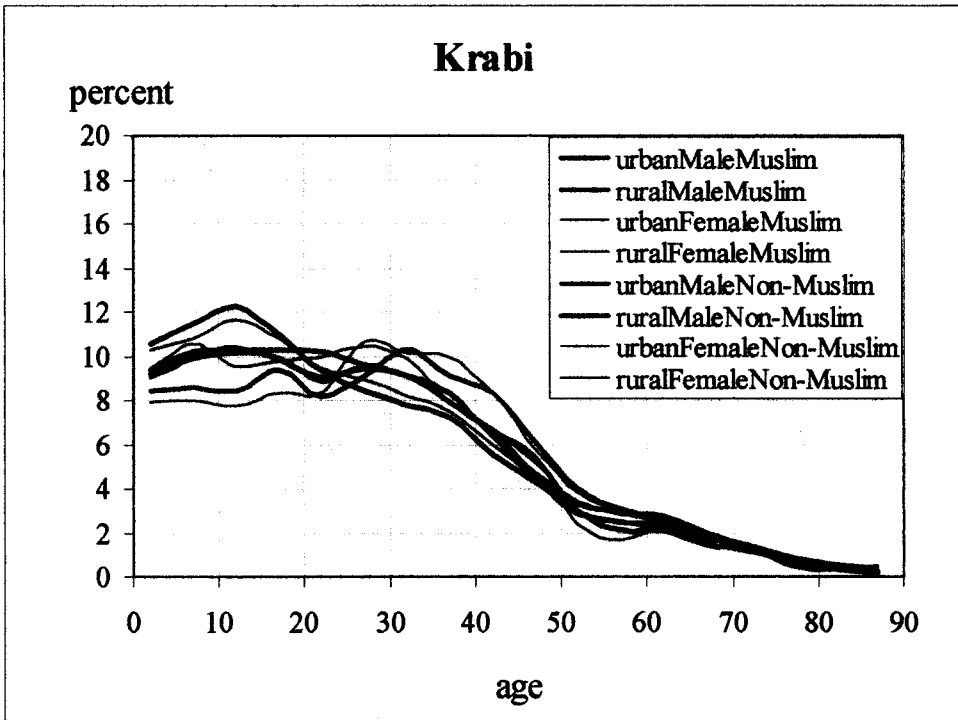


Figure 3.4: Percent of the population in Krabi province

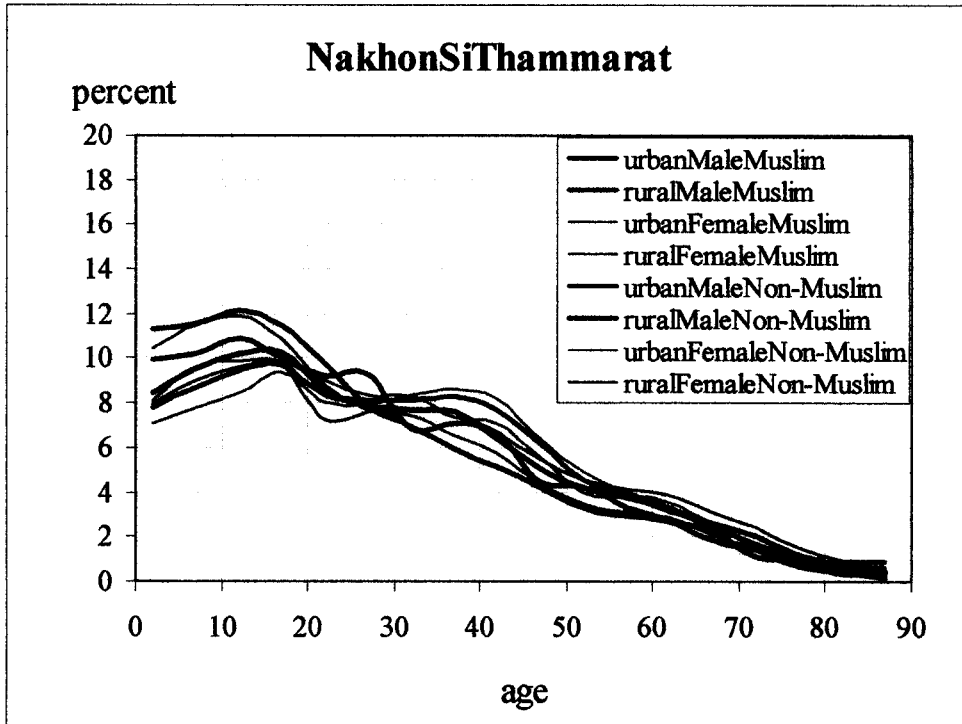


Figure 3.5: Percent of the population in NakhonSiThammarat province

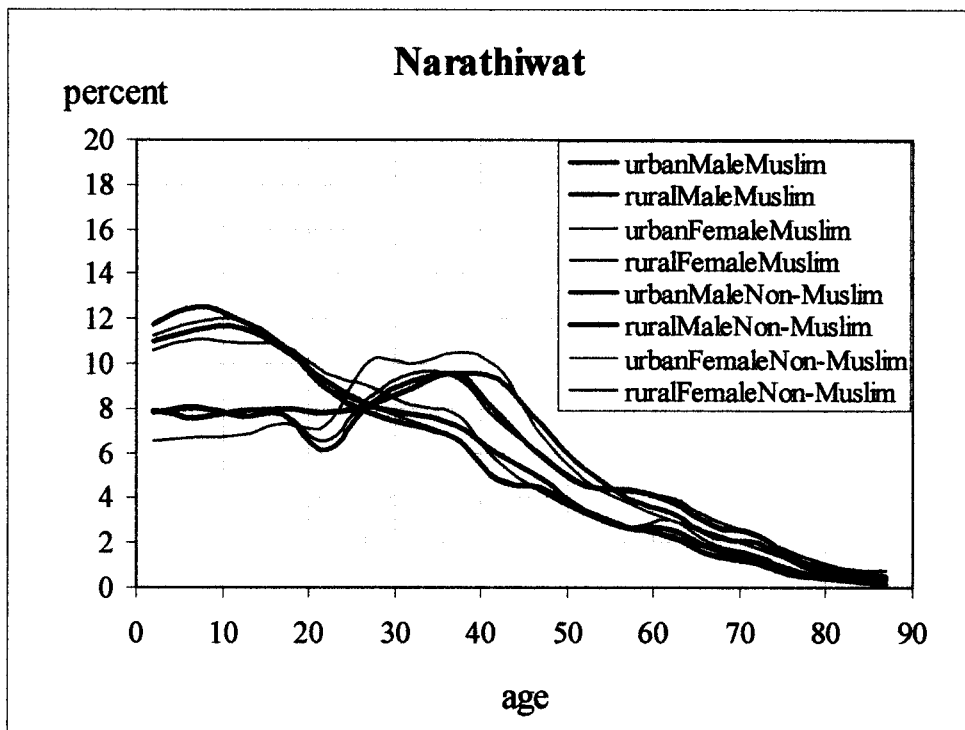


Figure 3.6: Percent of the population in Narathiwat province

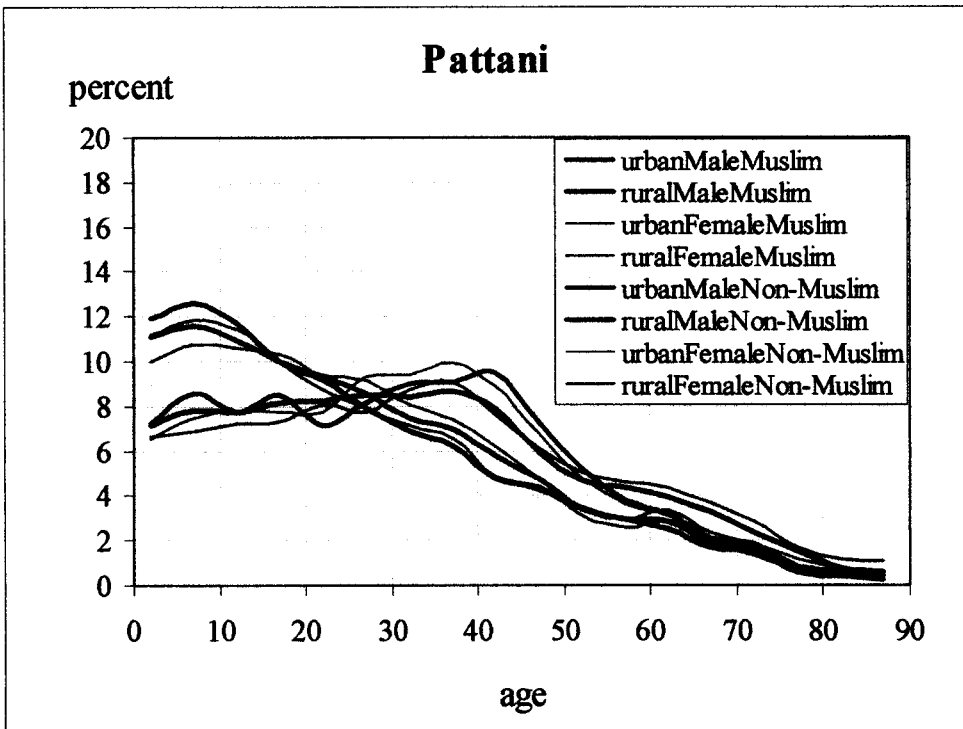


Figure 3.7: Percent of the population in Pattani province

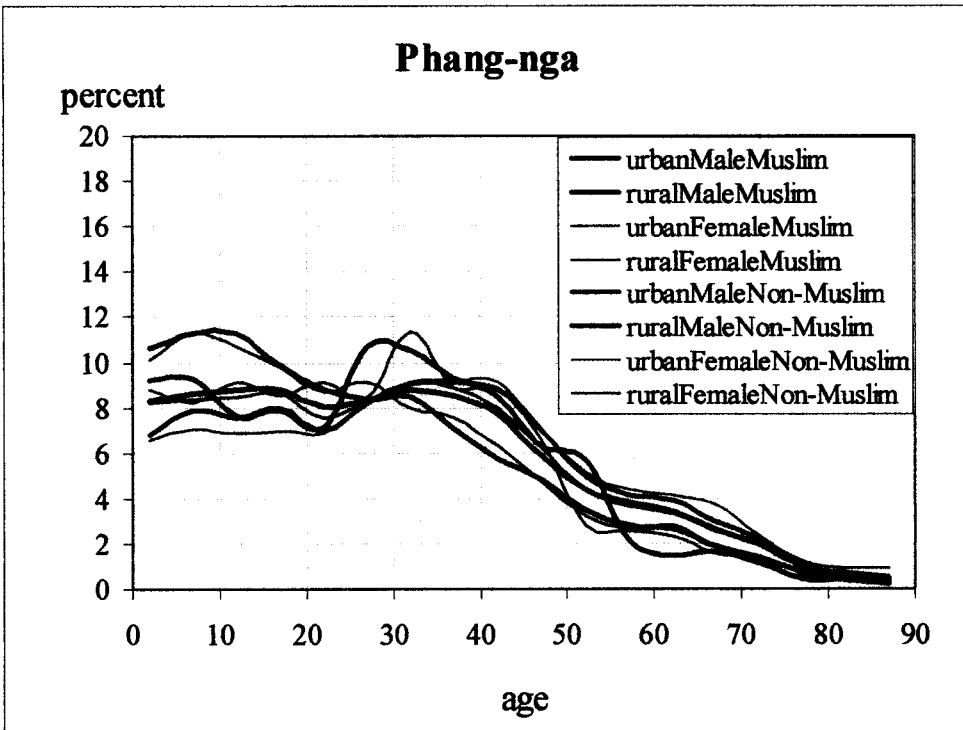


Figure 3.8: Percent of the population in Phang-nga province

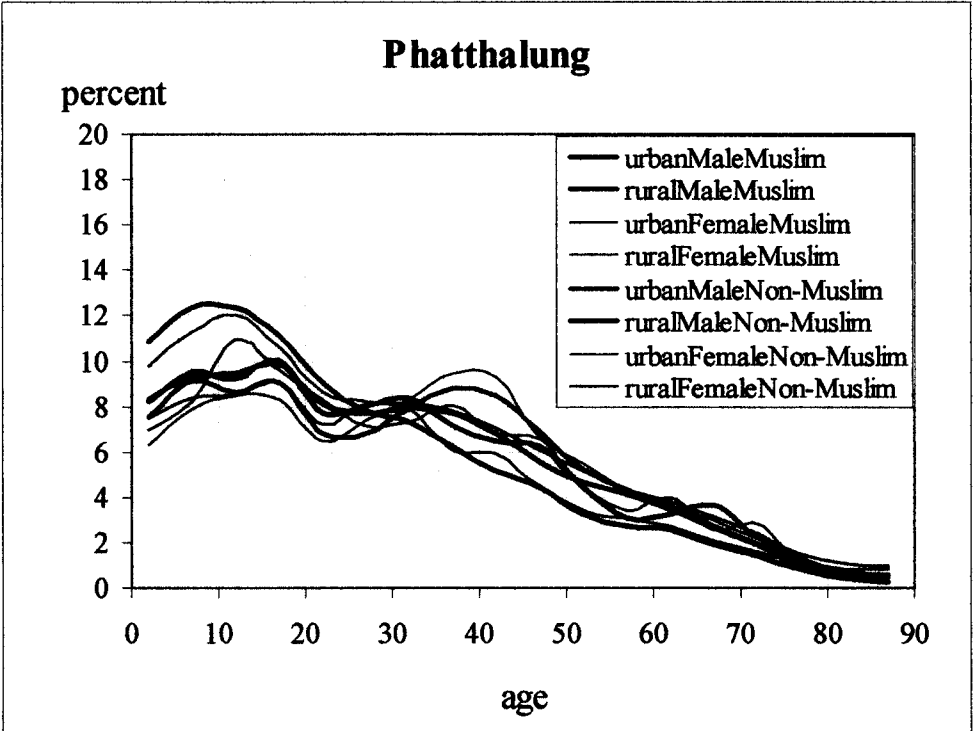


Figure 3.9: Percent of the population in Phatthalung province

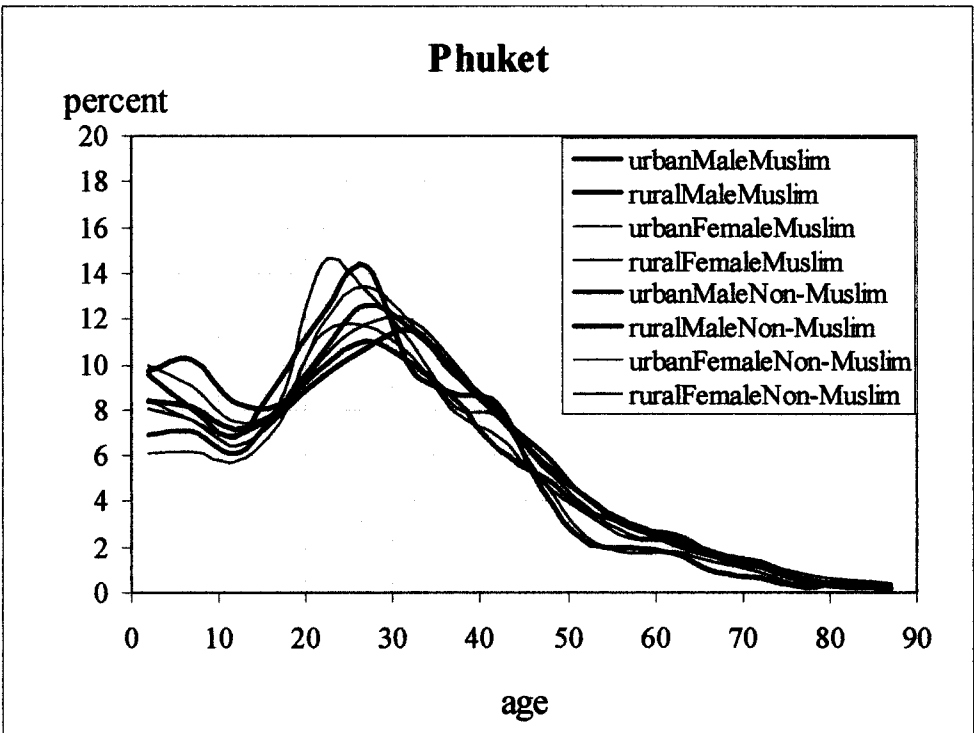


Figure 3.10: Percent of the population in Phuket province



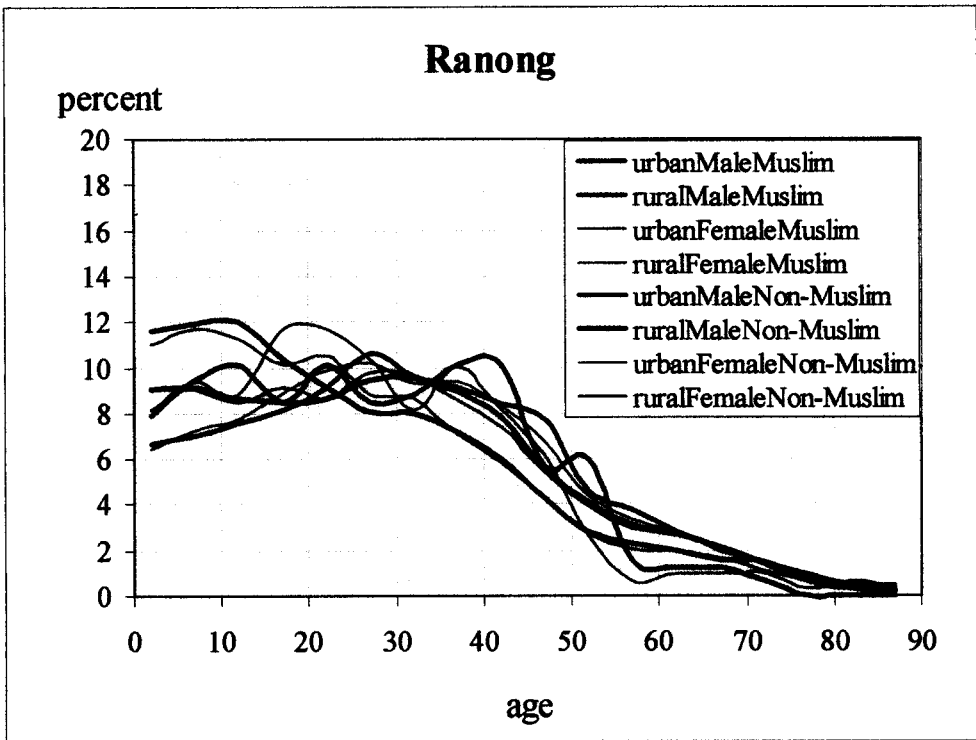


Figure 3.11: Percent of the population in Ranong province

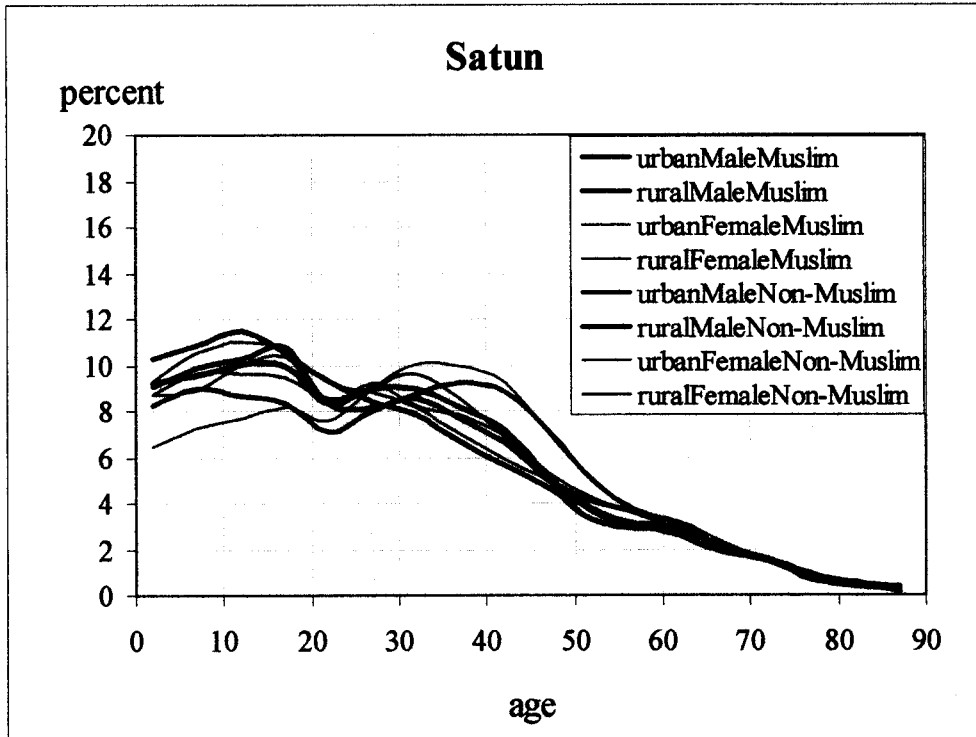


Figure 3.12: Percent of the population in Satun province

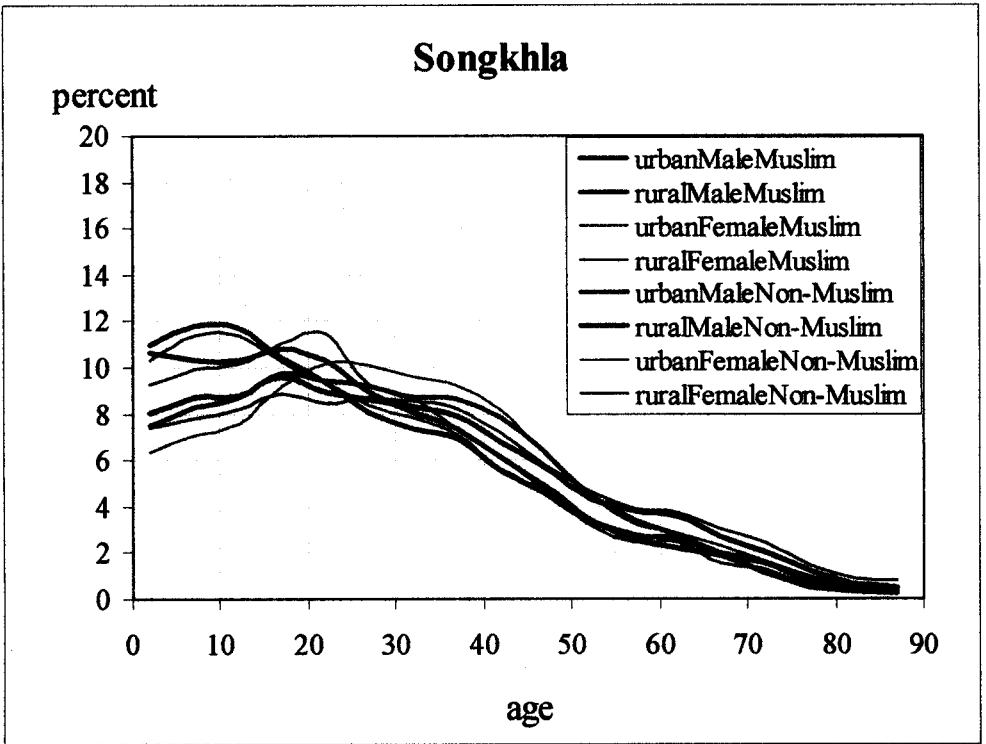


Figure 3.13: Percent of the population in Songkhla province

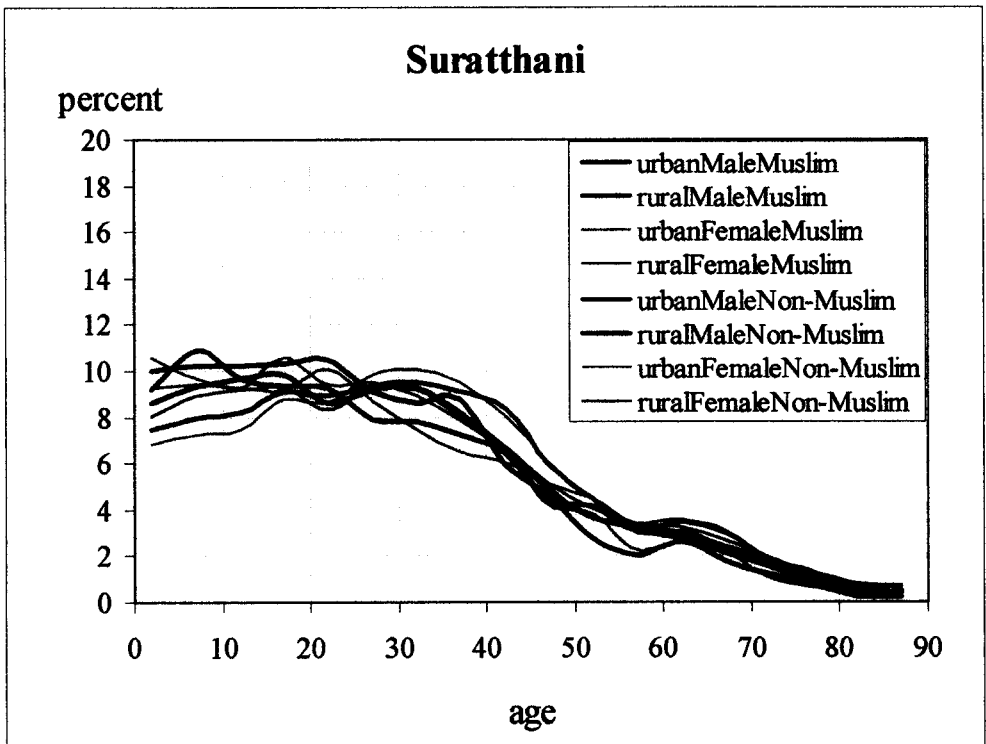


Figure 3.14: Percent of the population in Suratthani province

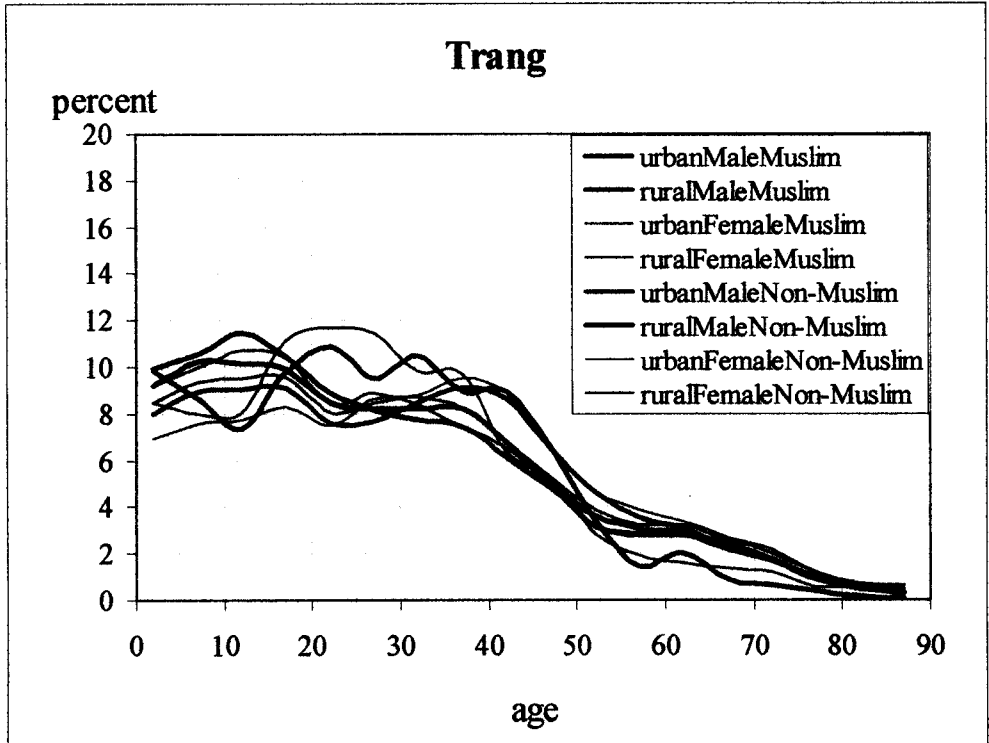


Figure 3.15: Percent of the population in Trang province

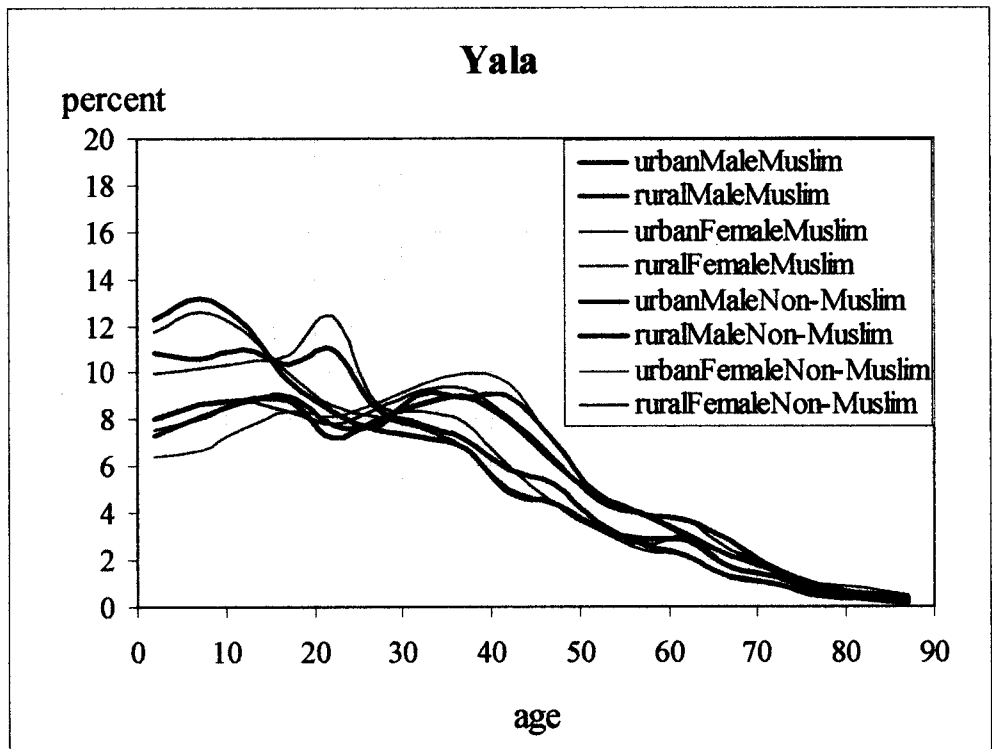


Figure 3.16: Percent of the population in Yala province

### 3.3 Life Tables

Table 3.2 gives the male and female life tables obtained by applying the method described in Chapter 2 to the aggregated data for the year 2000 from all 14 provinces in the Southern Region of Thailand. For purposes of comparison the 2002 life tables for all races in the United States (Arias, 2004) are also given in this table. Note that the female mortality levels are only slightly greater than those for the US, whereas the male mortality levels are substantially higher than those for the US.

x	Males				Females			
	$D_x$	$P_x$	$l_x$	$l_x$ (US)	$D_x$	$P_x$	$l_x$	$l_x$ (US)
0	766	364435	100000	100000	599	343532	100000	100000
5	221	394376	98955	99097	146	372369	99132	99267
10	217	397676	98678	99014	133	380638	98938	99199
15	539	391618	98409	98900	198	382400	98765	99120
20	805	349995	97734	98436	295	342789	98510	98922
25	1466	338153	96616	97746	486	354058	98087	98688
30	1579	333236	94545	97091	486	349292	97416	98424
35	1291	315919	92331	96367	509	327193	96741	98064
40	1013	267023	90463	95381	426	278914	95991	97500
45	1037	211532	88764	93929	504	220386	95261	96627
50	949	160092	86614	91809	569	168551	94178	95364
55	1196	135046	84084	88850	597	139516	92601	93572
60	1582	121082	80442	84637	955	133395	90641	90826
65	1911	91158	75353	78556	1290	102468	87453	86680
70	2086	67854	67848	70087	1588	78388	82117	80556
75	1878	37569	58163	58680	1609	45651	74200	71800
80	1660	20885	45241	44370	1805	28992	62183	59621
85	1985	15494	30242	28478	3082	25799	45433	43452

Table 3.2: Life table for Southern Thailand (2000) and the US (2002)

Figures 3.17 and 3.18 compare number surviving per 100,000 births among males and females by province. The numbers surviving among males are lower than those for females. Among province Phuket has the lowest number surviving for males and Narathiwat has the lowest number surviving for female at older ages.

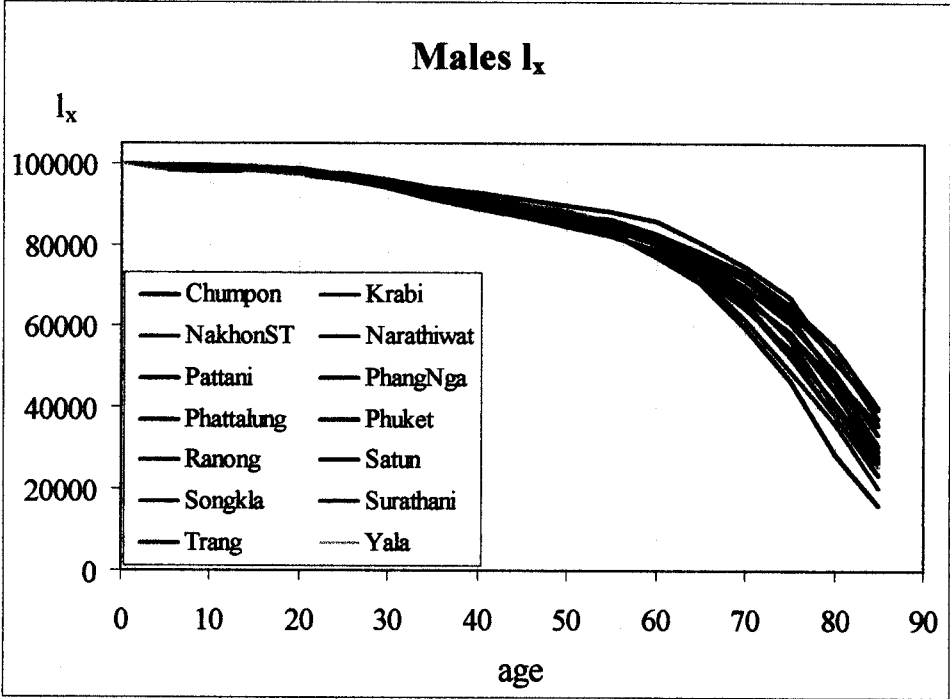


Figure 3.17: Hypothetical cohorts of males who live at exact age

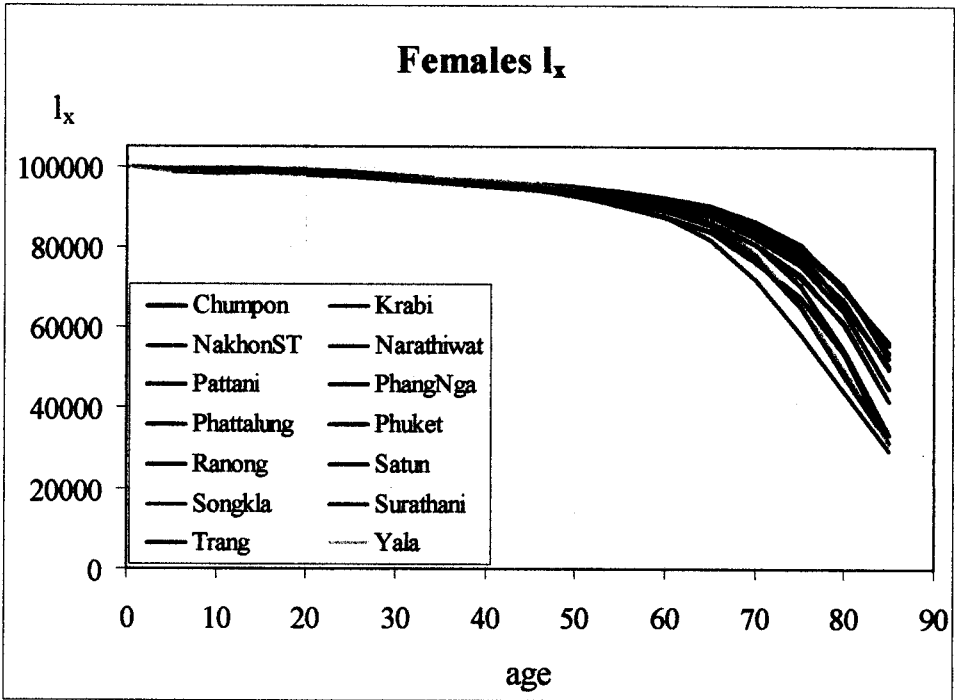


Figure 3.18: Hypothetical cohorts of females who live at exact age

Figures 3.19 and 3.20 show numbers dying in terms of base 2 logarithm among males and females by province.

The number dying increases with age after age 10 with the bulk at age 15-40 among males. The numbers dying among males age 40-75 and females aged 40-55 in Phuket is greater than those in other provinces. Among females aged 55-70 the greatest proportion deaths occurred in Narathiwat.

Table 3.3 shows the life expectancy for the first age group separated by province.

Females live longer than males. Males in Ranong province have longest life expectancy whereas females in NakhonSiThammarat and Phatthalung have longest life expectancy.

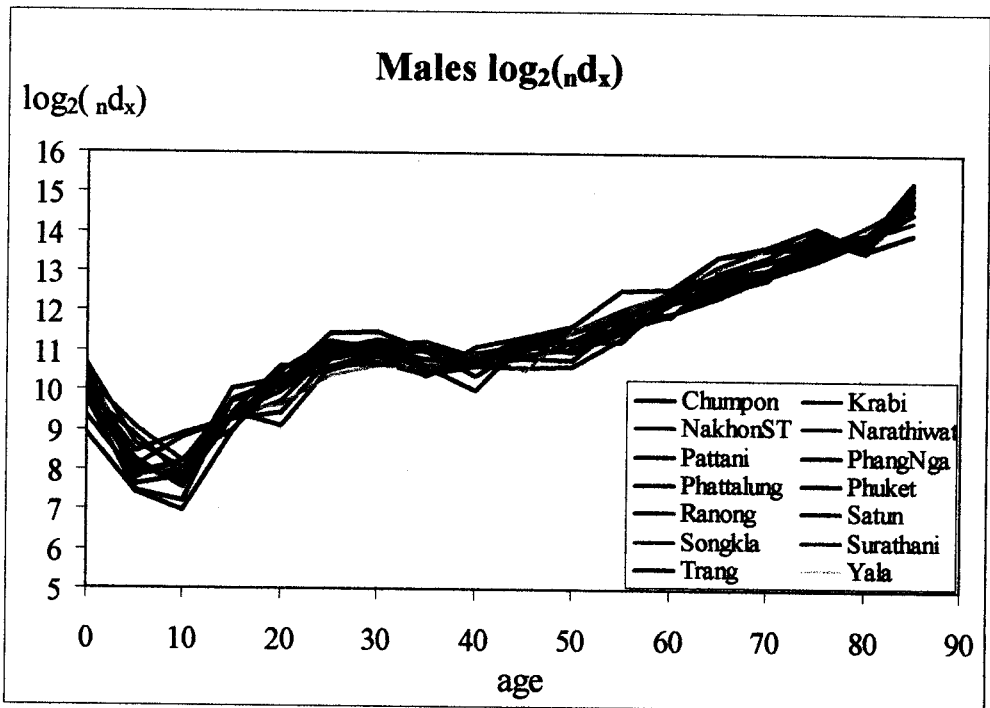


Figure 3.19: Log base 2 of number dying of males

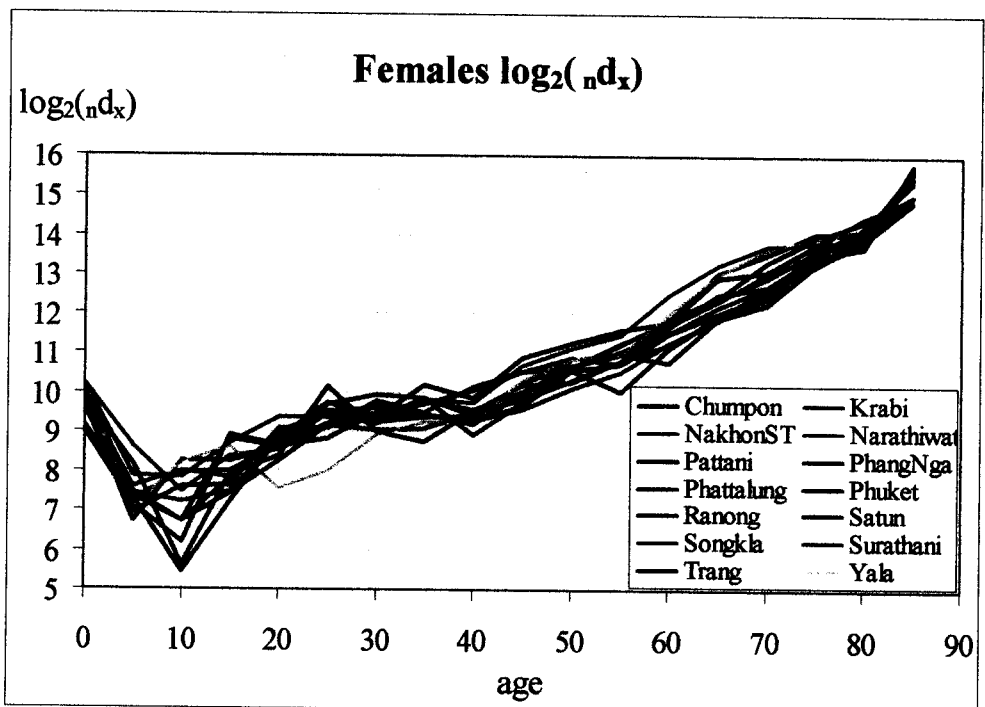


Figure 3.20: Log base 2 of number dying of females

Province	Life expectancy	
	male	female
Chumphon	71.7	80.0
Ranong	75.7	80.6
Suratthani	72.6	80.0
Phang-nga	73.7	79.2
NakhonSiThamarat	74.5	81.2
Phuket	69.1	76.4
Krabi	73.0	78.0
Trang	73.0	80.8
Phatthalung	75.1	81.2
Songkhla	71.2	78.4
Satun	71.9	77.2
Pattani	71.2	76.2
Yala	71.8	76.7
Narathiwat	69.8	74.8

*Table 3.3: Life expectancy for first age group by provinces in Southern Thailand*