

## Chapter 3

### Preliminary Results

In this chapter, we describe the preliminary data analysis for suicide mortality in southern Thailand from 1996 to 2006. These were 4,588 deaths notified for committing suicide during study period. The results are presented using frequency table and graphical displays for identifying the association between determinants and an outcome variable.

#### 3.1 Description of the variables

The roles of the variables are classified as determinants and an outcome. These variables with their roles and data types are listed in Table 3.1. There were 5 determinants: including gender, age group, year and province and suicide method. An outcome was the suicide mortality rate. It was continuous variable.

Table 3.1: Variables with their roles and data types

| Variable               | Role        | Type         |
|------------------------|-------------|--------------|
| Subject number         | Identifier  |              |
| Gender                 | Determinant | Binary       |
| Age Group              | Determinant | Ordinal (4)  |
| Method                 | Determinant | Nominal (4)  |
| Year                   | Determinant | Ordinal (11) |
| Province               | Determinant | Ordinal (14) |
| Suicide mortality rate | Outcome     | Continuous   |

#### 3.2 Distribution of determinants

The frequency distributions for determinants of suicide characteristics are described below.

### Sex

Most of the deaths notified for committing suicides were males (77.55%), and females being 22.45%.

*Table 3.2: Distribution of suicide deaths by gender*

| Gender | Number(n = 4,588) | percent |
|--------|-------------------|---------|
| male   | 3,558             | 77.55   |
| female | 1,030             | 22.45   |

### Age

The numbers of deaths by age group were shown in Table 3.3. The maximum number of suicide deaths occurred among age group 25-29 with being 14.86%, follow by age group 30-34 (13.25%) and 20-24 (13.06%). Whereas age group 10-14 had the lowest number of suicide deaths (0.94%).

*Table 3.3: Distribution of suicide deaths by age group*

| Age group | Number(n=4,588) | Percent |
|-----------|-----------------|---------|
| 10-14     | 43              | 0.94    |
| 15-19     | 406             | 8.85    |
| 20-24     | 599             | 13.06   |
| 25-29     | 682             | 14.86   |
| 30-34     | 608             | 13.25   |
| 35-39     | 495             | 10.79   |
| 40-44     | 403             | 8.78    |
| 45-49     | 265             | 5.78    |
| 50-54     | 196             | 4.27    |
| 55-59     | 184             | 4.01    |
| 60-64     | 218             | 4.75    |
| 65-69     | 168             | 3.66    |
| 70-74     | 151             | 3.29    |
| 75+       | 170             | 3.71    |

### ***Suicide Methods***

Numbers of suicide deaths classified by suicide method was shown in Table 3.4. The most common suicide method was hanging (60.03 %) followed by poisoning (14.54%) and firearm (5.60%).

*Table 3.4: Distribution of Suicide method*

| Methods of suicide      | Number(n=4,588) | Percent |
|-------------------------|-----------------|---------|
| Hanging                 | 2754            | 60.03   |
| Poisoning               | 667             | 14.54   |
| Firearm                 | 257             | 5.60    |
| Other unspecified means | 910             | 19.83   |

### ***Year***

Table 3.5 show annual numbers of suicide deaths. The numbers of suicide deaths were uniform across year, with the highest being 471 (10.27%) occurred in 2000.

*Table 3.5: Distribution of suicide deaths in each year*

| Year | Number(n=4,588) | Percent |
|------|-----------------|---------|
| 1996 | 388             | 8.46    |
| 1997 | 390             | 8.50    |
| 1998 | 364             | 7.93    |
| 1999 | 415             | 9.05    |
| 2000 | 471             | 10.27   |
| 2001 | 462             | 10.07   |
| 2002 | 462             | 10.07   |
| 2003 | 462             | 10.07   |
| 2004 | 396             | 8.63    |
| 2005 | 415             | 9.05    |
| 2006 | 363             | 7.91    |

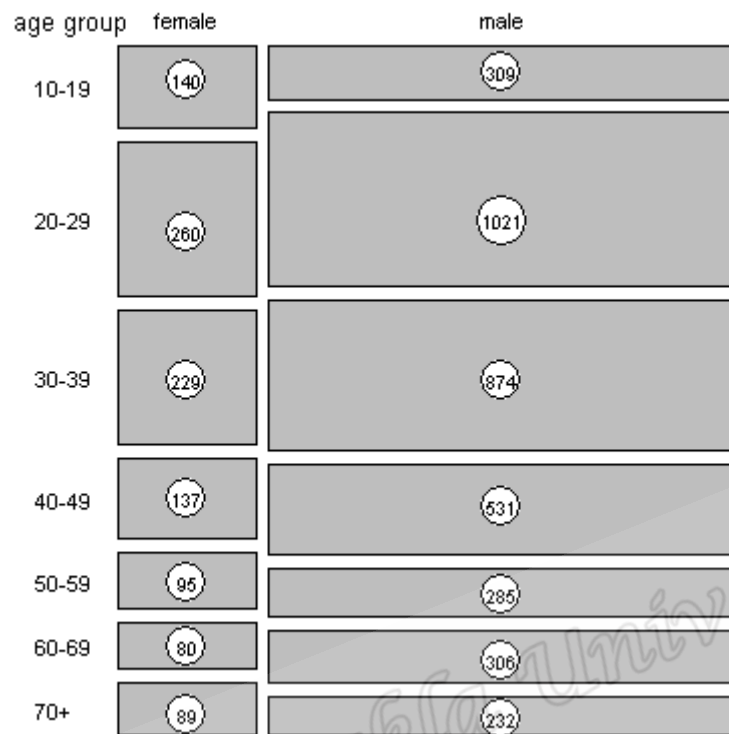
### *Province*

Table 3.6 shows numbers of suicide deaths classified by province. The maximum number of deaths was occurred in Nakhon Si Thammarat with being 1,083 deaths (23.61%) followed by Songkhla (14.76%) and Surat Thani (12.97%).

*Table 3.6: Distribution of suicide deaths by Provinces*

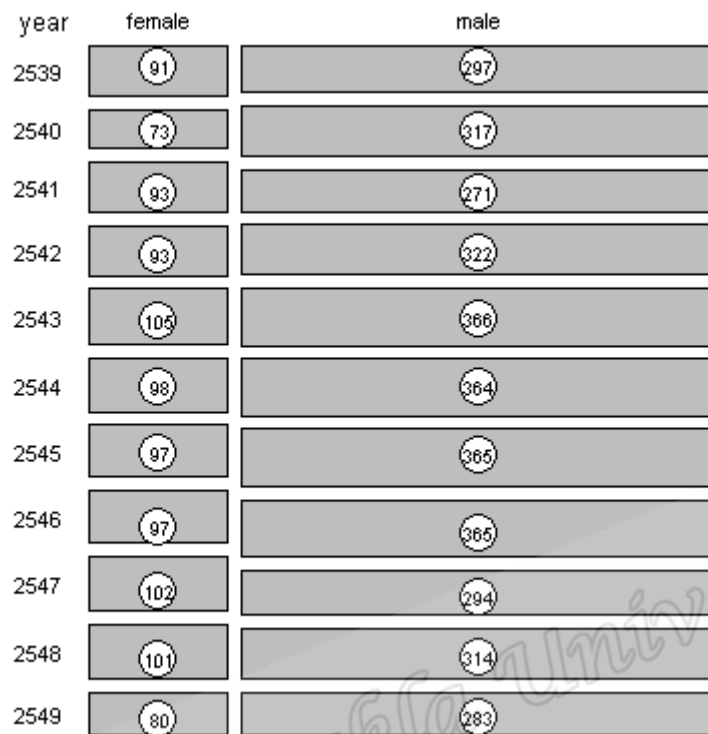
| Province          | Number(n=4,588) | Percent |
|-------------------|-----------------|---------|
| NakhonSiThammarat | 1,083           | 23.61   |
| Songkhla          | 677             | 14.76   |
| Surat Thani       | 595             | 12.97   |
| Chumphon          | 446             | 9.72    |
| Trang             | 416             | 9.07    |
| Phatthalung       | 359             | 7.82    |
| Krabi             | 205             | 4.47    |
| Phuket            | 172             | 3.75    |
| Phang-nga         | 135             | 2.94    |
| Ranong            | 127             | 2.77    |
| Narathiwat        | 97              | 2.11    |
| Satun             | 95              | 2.07    |
| Yala              | 92              | 2.01    |
| Pattani           | 89              | 1.94    |

Figure 3.1 shows a mosaic plot between age groups in horizontal axis and gender in vertical axis. The numbers of suicide deaths are shown in rounded circles in each rectangle of the plot. In this graphs, age was grouped into decades except the oldest was grouped as 70 years and over. More than half (66.52 %) of suicide deaths occurred in persons aged 20-49 years old (3,052 deaths). Male had higher number of suicide deaths than females.



*Figure 3.1: Mosaic plot of gender and age group*

In Figure 3.2 shows mosaic plot between gender and year at death. Since year 1996 to 2006, the numbers of deaths were almost the same for each year.



*Figure 3.2: Mosaic plot of annual numbers of deaths by gender*

Figure 3.3 shows a mosaic plot of suicide deaths by province gender. The high

number of suicide deaths for males and females were occurred in Nakhon Si

Thammarat, Songkhla and Surat Thani .

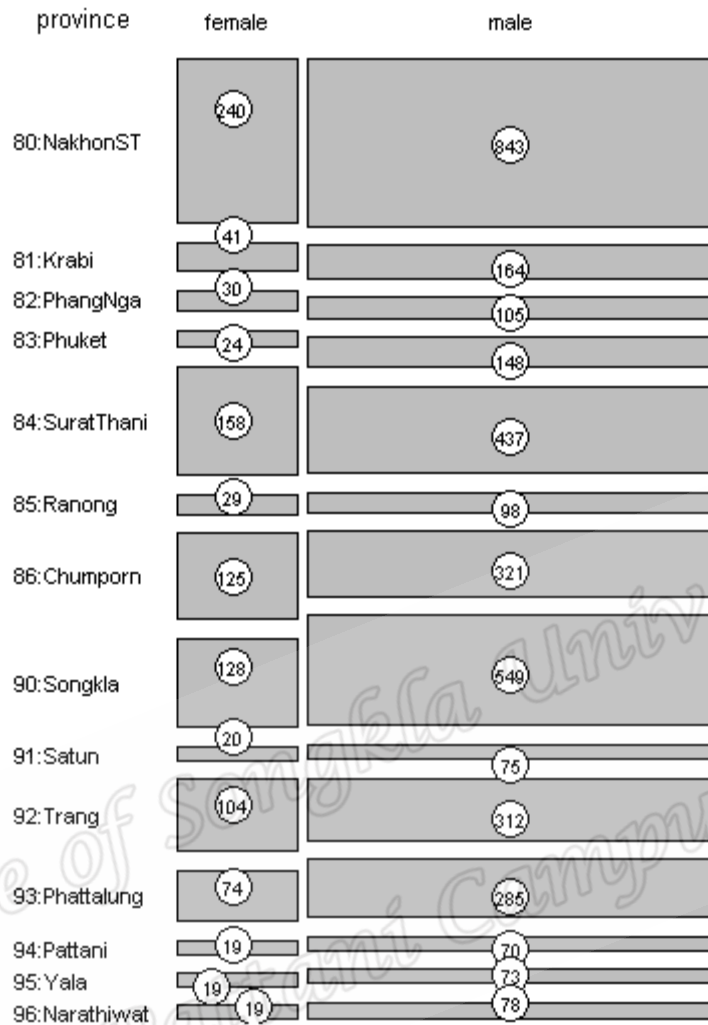


Figure 3.3: Mosaic plot of gender and provinces

Figure 3.4 shows a mosaic plot by method of suicide and gender. The highest number of suicide deaths was by hanging for both of genders.

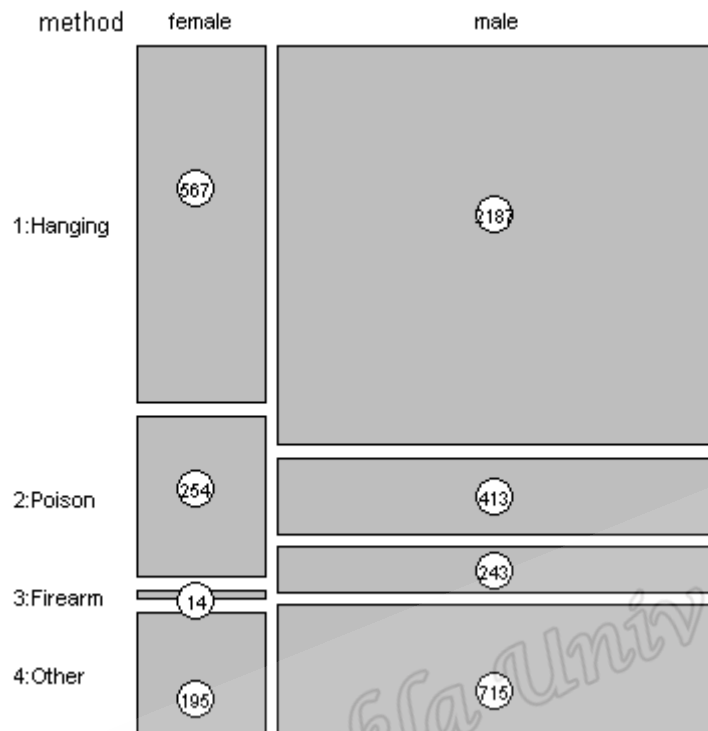


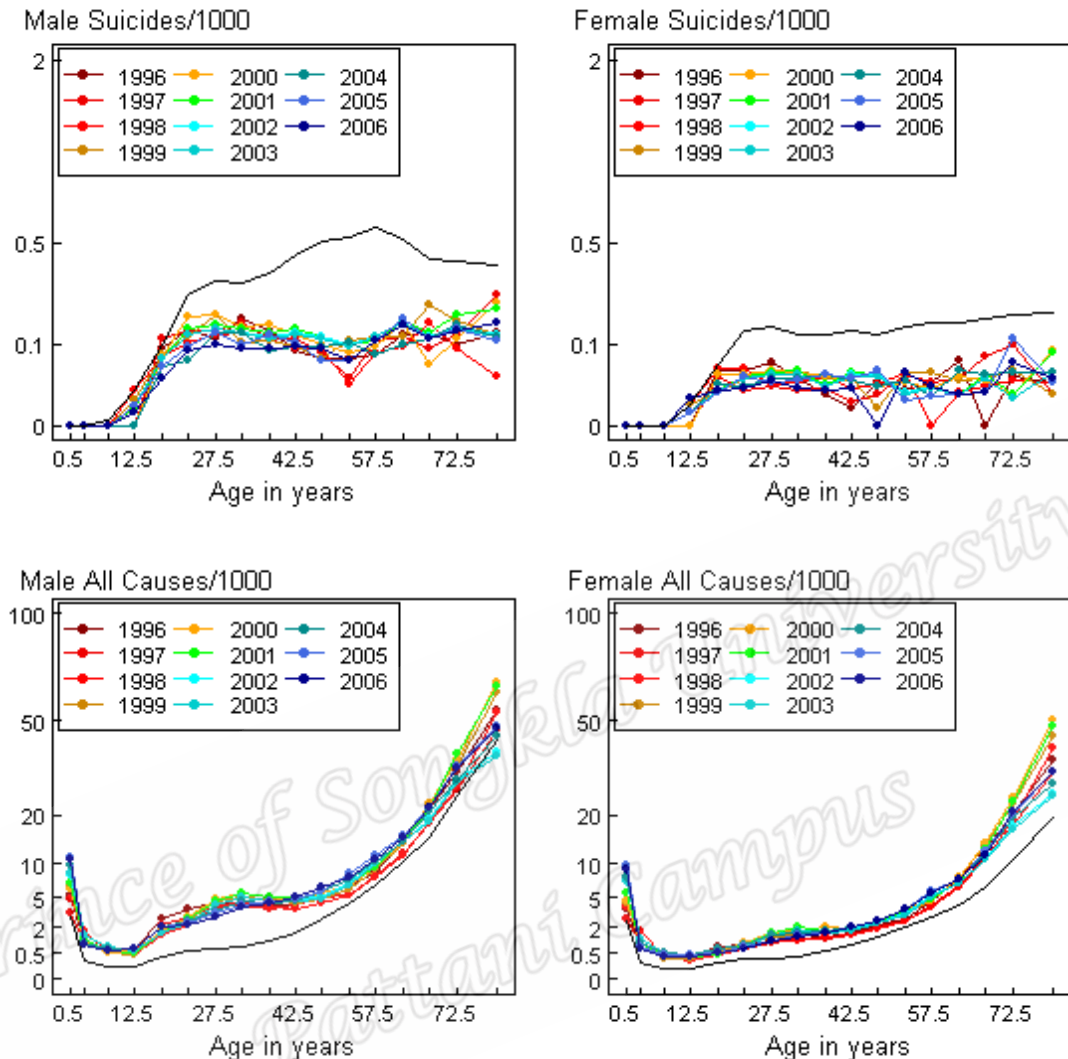
Figure 3.4: Mosaic plot of gender and method of suicide

### 3.3 Mortality rates and excess deaths

Suicide mortality rates were calculated using Equation (1) mentioned in Chapter 2. To facilitate the comparison at different ages, square root scale was used for plotting mortality rates curves. The mortality rates from “all causes of deaths” were also plotted, together with the mortality rates country such as Japan.

In order to compare southern Thailand mortality with Japan and other regions of Thailand, we calculated excess mortality rates and excess deaths for southern Thailand over Japan in 2006 and other regions by year.

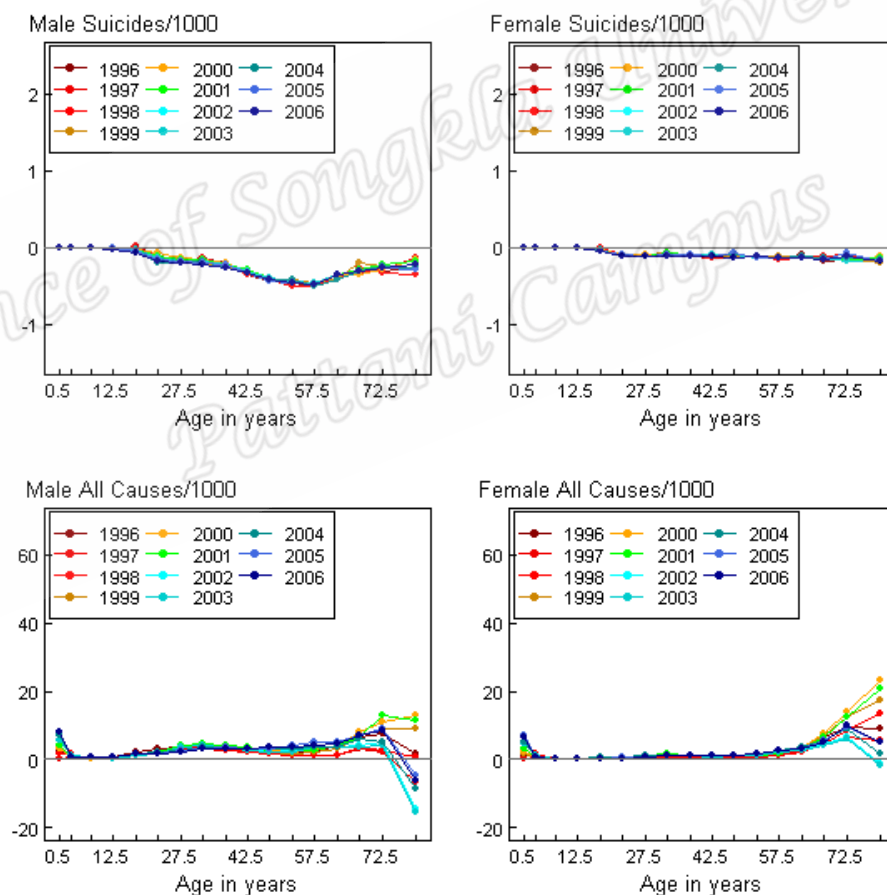




*Figure 3.5: Age-specific death rates (per 1000 population) for suicide and “all causes of deaths” in Southern Thailand*

Figure 3.5 shows the age-specific death rates for suicide and “all causes of death” mortality rates for each year and compared them with suicide and “all causes of deaths” rates from Japan in 2006 using a square root scale. The undotted black lines are represented Japan’s age-specific mortality rates in 2006. In both genders, there was a remarkable difference in the patterns between the age groups each year. In the comparison between southern Thailand and Japan, Overall, age specific mortality rates from suicide in Japan were almost twice as high for males and almost two times

higher for females compared with Southern of Thailand. Japan suicide mortality rates were higher than southern Thailand at age groups 15 years and over. Whereas “all causes of death” for southern Thailand rates were higher overall of both gender. for the male, suicide rates indicated a dramatic fall and rise in pattern of suicide trends in southern of Thailand for each year. The male suicide rate was slightly high at age group 20-34 and peaked at elderly age group. The female suicide rates were uniform across year. For “all causes of death”, showed similar patterns for both males and females. It showed a rising trend as age increasing after 25 years.



*Figure 3.6: Excess mortality rates in southern Thailand over Japan rates in 2006*

Figure 3.6 shows plots of the excess of the suicide mortality rates in southern Thailand over Japan rates in 2006 with a square root scale. There were no excess suicide mortality rates for southern Thailand in all age group. In other hand, the shortage of mortality rates occurred for age groups 15 and over, particularly for male age groups 50-59. In “all cause of death”, for males and females the excess mortality rates were quite large for the oldest age group and slightly high at youngest age group. Males had the bump of excess mortality rates at age groups 25-39 years.

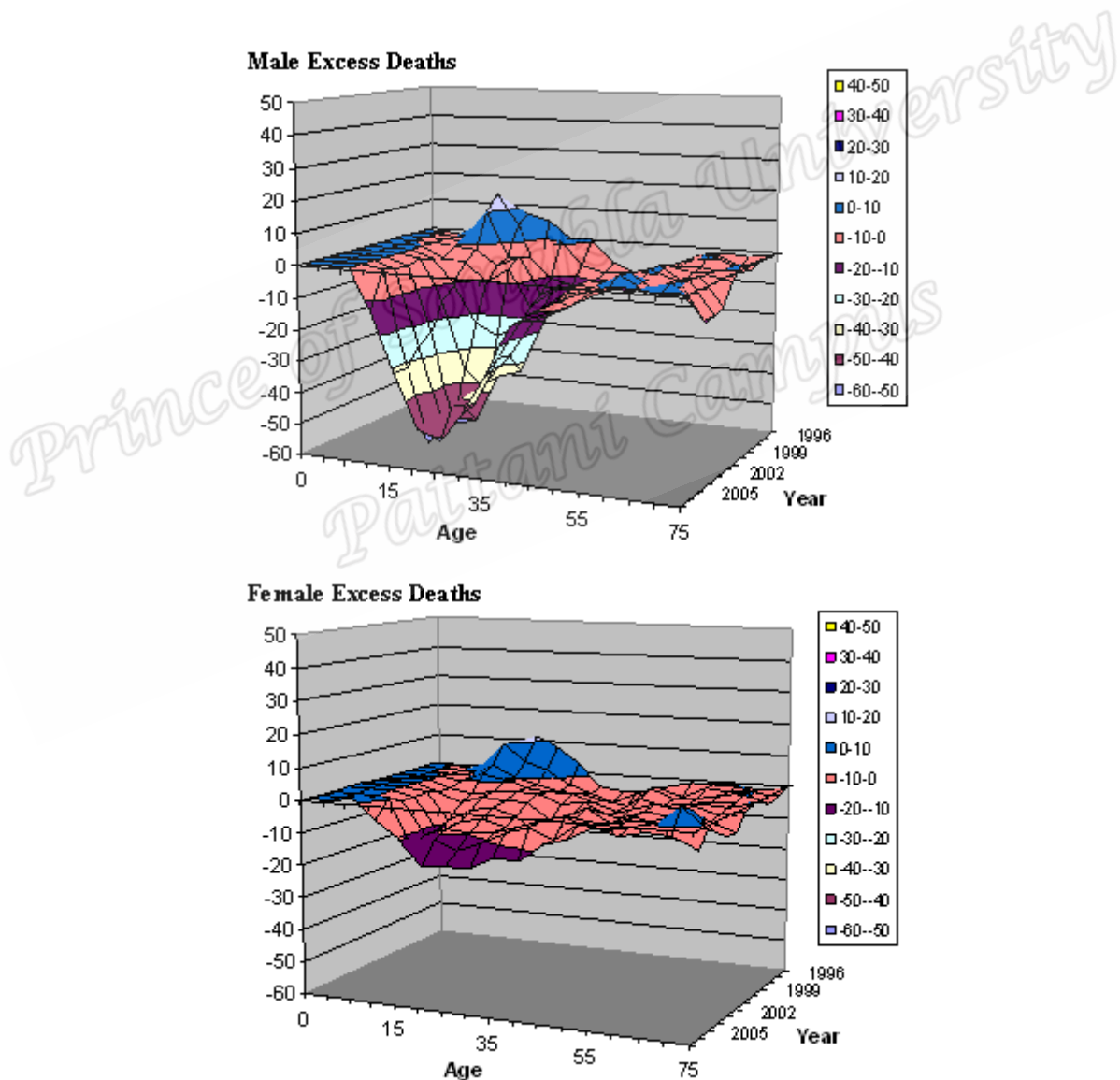
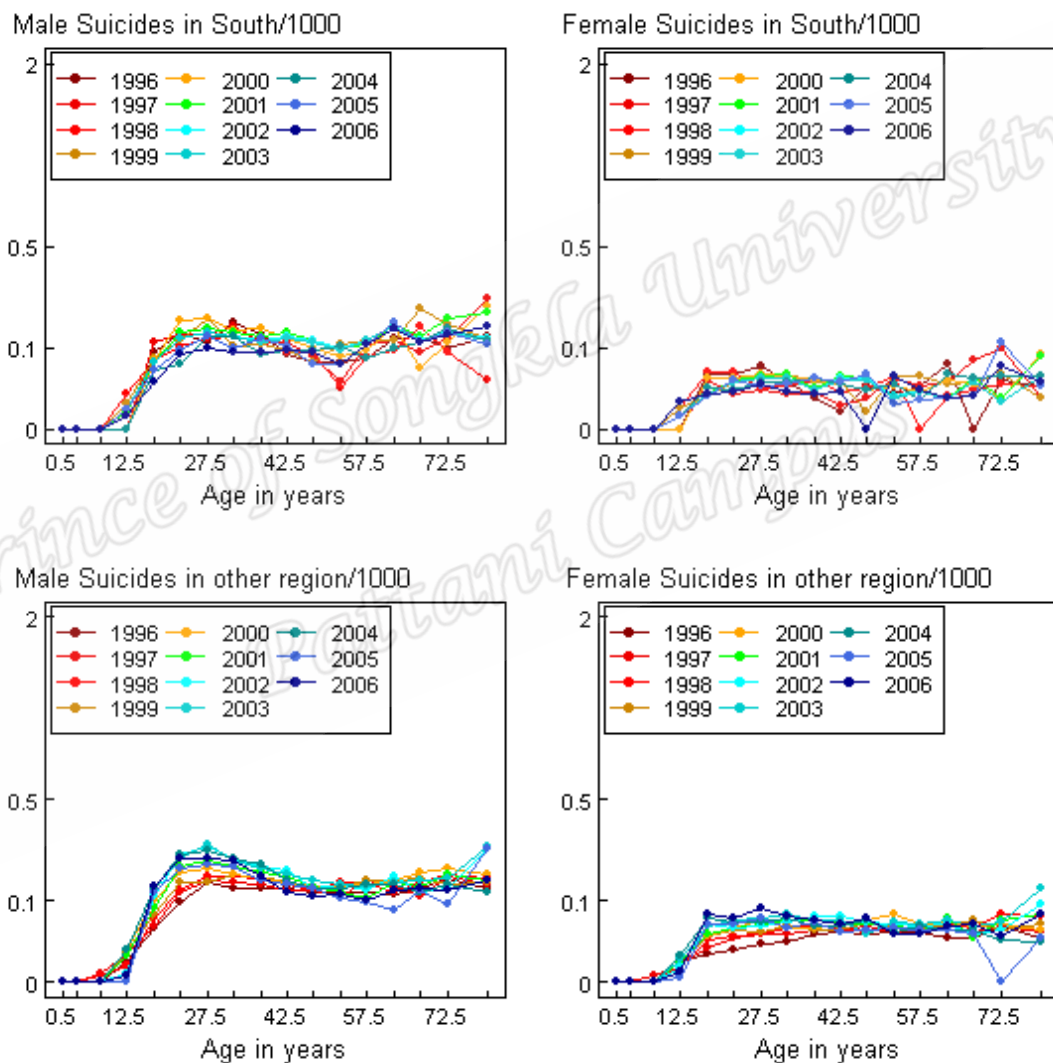


Figure 3.7: Excess deaths in Southern Thailand over the rest of Thailand

Figure 3.7 shows excess suicide deaths in southern Thailand over other regions of Thailand for both of genders in the perspective 3D view surface where the X-axis is presented age group, Y-axis is excess and Z-axis is year. The surfaces show that males had excess deaths among age groups 25-29 and 40-45 with more than 10 cases. Females had an excess death among age groups 35-39 years.



*Figure 3.8: Southern and other regions of Thailand suicides mortality rates per 1,000 population*

Figure 3.8 shows suicides mortality rate per 1,000 populations for Southern and other regions of Thailand. The patterns of suicides mortality rates in Southern Thailand are

quite similar to other region for male and female. The male suicide rates vary from 0 to 0.3 per 1,000 populations and 0 to 0.1 per 1,000 populations for female.

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