Contents

	Page
Abstract	iii
Acknowledgements	v
Contents	vi
List of Tables	viii
List of Figures	ix
List of Tables List of Figures Chapter 1. Introduction 1.1 Introduction	
1. Introduction	
1. Introduction1.1 Introduction1.2 Disease definition1.3 Situation in Thailand	1 majorus
1.2 Disease definition	60000
1.3 Situation in Thailand	2
1.4 Literature review	3
2. Methodology	
2.1 Data source	6
2.2 Path diagram and variables	7
2.3 Statistical methods	7
3. Preliminary data analysis	
3.1 Description of determinants	10
3.2 Numbers of deaths and mortality incidence rat	es 11
4. Statistical Modeling	
4.1 Statistical Models	20

5. Conclusions and Discussions

5.1 Conclusions	28
5.2 Discussion	29
5.3 Limitations	31
5.4 Suggestion for further studies	31
References	32
Appendix Vitae	35 45
Vitae Somple Campus Prince of Somple Campus	

List of Tables

Table	Page
Table 3.1 Determinant categories	10

List of Figures

Figures	Page
Figure 2.1 Schematic diagram of variables of interest	7
Figure 3.1 Mosaic plot of annual number of deaths by gender	11
Figure 3.2 Mosaic plot of numbers of deaths by age group and gender	12
Figure 3.3 Mosaic plot of numbers of deaths by province and gender	13
Figure 3.4 Southern Thailand mortality incidence rates per 1000 population	
in square root scale	15
Figure 3.5 Excess deaths in Southern Thailand over Japan in 2006	16
Figure 3.6 Excess mortality incidence rates in Southern Thailand	
over Japan in 2006	17
Figure 3.7 Southern and other regions of Thailand diabetes mortality	
incidence rates per 100,000 population	18
Figure 3.8 Excess deaths in Southern Thailand over the rest of Thailand	19
Figure 4.1 Diagnostic plots of linear models on top panels and Poisson models	
on bottom panels	22
Figure 4.2 Diagnostic plots of Poisson models for age less than 30 on top	
panels and Poisson models for age more than 30 on bottom panels	23
Figure 4.3 Plot of observed counts and observed incidence against fitted values	24

Figures	Page
Figure 4.4 Male mortality incidence per1000 by each factor, adjusted	
for the other factors	26
Figure 4.5 Female mortality incidence per1000 by each factor, adjusted	
for the other factors	26
Figure 4.6 Schematic maps of diabetes mortality incidence rates	
(left panel for males and right panel for females)	27
(left panel for males and right panel for females)	