

CHAPTER 1

INTRODUCTION



1.1 Background

Since 1962, Thailand has implemented "The National Economic and Social Development Plan" in order to maximize the efficiency of the process of development. The First, Second, Third and Fourth National Economic and Social Development Plans, focused on similar concerns, namely, the construction and improvement of the main highways connecting Bangkok with the various regions, the construction of inter - regional highways, and the construction of rural roads in order to provide road access to every province in the country. The main purpose of these road being done to connect the sources of production to the markets and sales spots, with a special emphasis on roads leading to remote villages and roads along the borders. The Fifth and Sixth Plans focused on the construction of roads in rural areas and on maintenance of the existing network. Finally, during the term of the Seventh plan, inter - city motorways - have been constructed and existing highways widened. (Department of Highways, 1997)

Thailand's economy has undergone rapid expansion over the past decade with an average annual growth rate of 8 %. During the period of 1988 - 1990, the country even experienced an annual growth rate estimated to be between 11.6 % and 13.3 %. Even afterwards, the economy has continued to experience a growth rate of approximately 8 %. The per capita income increased by 2 times between 1982 and 1993. The high growth are mainly attributed to the rapid expansion of the industrial sector. Earlier, the bulk of hence, the country's income was generated by the agriculture sector. Since 1982, the income from the industrial sector has achieved growth rates higher than those of the farming sector. In 1990, for example, the growth rate of the industrial sector was 72 %, or 1.7 times higher than the rate of the agriculture sector. (National Economic Social Development Board of Thailand, 1997).

There is therefore strong indication that the country has moved towards industrialization. This led to an increasing demand for the transportation of goods. (NESDB, 1997)

Increased roads and economic expansion have contributed to the increasing demand for transportation and travel facilities. The number of registered motor vehicles also has rapidly increased in Thailand. As a consequence, some of the years between 1984 and 1986, the growth rate number of road accidents has been increasing as shown in table 1.1.

The figure of road accidents in Thailand have been considerably high. According to the report of the National Safety Council, the number of road accidents throughout the country in the year 1996 was 88,556 (table 1.1). This figure is approximately 5 times higher than in 1983.

Table 1.1 : Road Accident Statistics in Thailand Year 1983 - 1996

Year	Number of Road Accidents (times)	Growth Rate of Number of Road Accidents (%)
1983	17,864	-
1984	18,445	3.25
1985	18,420	- 0.14
1986	23,959	30.07
1987	24,132	0.72
1988	35,289	46.23
1989	42,532	20.52
1990	40,481	- 5.07
1991	49,625	22.59
1992	61,329	23.58
1993	84,892	38.42
1994	102,610	20.87
1995	94,362	- 8.74
1996	88,556	- 6.56

Source : Information Department, National Safety Council, 1996, Thailand

1.2 Rationale

Road accidents are a non - communicable health hazard disease caused by road users, vehicles, roads and environment. According to a report conducted at Wichienburi Hospital, Wasunsirisakul (1996), road users behavior was the main cause of road accidents because of alcohol drinking, careless driving, lack of helmet use and limited respect of road regulations. Insufficient Law enforcement was also identified.

The main consequences of road accidents are death, injury and economic loss.

The number of deaths and injured persons from road accidents have been increasing year after year. Death and injury due to road accidents occurred at all ages. The Ministry of Public Health reports in 1996 the road accidents throughout Thailand to cause 14,949 deaths, male 12,356 and female 2,593 (table 1.2). Age ranged from under 1 year to more than 85 years old. The third cause among 75 diseases for inpatients department of all public hospitals was road accidents from motorcycle that is marked about 150,000 injured persons in 1996.

Table 1.2 : Deaths from road accidents by Sex and Number Year 1986 - 1996

Year	Total Death (persons)	Male Death (persons)	Female Death (persons)
1986	4,208	3,261	947
1987	4,441	3,518	923
1988	5,428	4,297	1,131
1989	6,617	5,271	1,346
1990	8,335	6,761	1,574
1991	10,155	8,218	1,937
1992	11,044	9,019	2,025
1993	12,321	10,166	2,155
1994	13,367	10,993	2,374
1995	14,479	12,013	2,466
1996	14,949	12,356	2,593

Source : Public Health Statistics, 1995, Thailand

Another issue to be considered is economic loss. Road accidents have created a huge economic burden for the country. The economic burden of road accidents comprised three elements: the direct cost to the health care sector to treat the victims and loss on properties damage; the indirect cost due to productivity loss because of morbidity, patients care and premature mortality; and the intangible cost in pain, suffering and loss in psychological caused by the injury. According to, the Police Department loss of properties of the country in 1996 was approximately 1,562 million Baht.

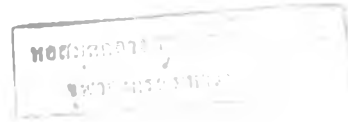
Pattamasiriwat (1993) reports that the value of social cost of road accidents was approximately 69.656 million Baht in 1993 or 2.23 percent of GNP.

Presently, road accidents are one of the most serious problem in Thailand. This could be explained by many factors such as: planning and budget allocation for road transportation, growth rate of vehicles on roads, alcohol drinking, careless driving, lack of helmet use and limited law enforcement. The consequence from road accidents are death, injury and economic loss. The gap of knowledge concerning these factors and consequences are very interesting to study as to know these factors influenced the road accidents and these consequences estimated to the trends of economic loss.

The related factors such as the investment of the government for road transportation might have a positive or a negative effect on road accident which the previous studies have not been done for identification this factor. This investment of the government is the allocation of budgets for road transportation in each year. This budgets is the enormous resources for society. The other risk factors such as drinking alcohol, lack of helmet use and seat belt have been studied only one factor to road accidents from the previous studies. They have not been studied in combination together.

The economic loss from road accidents has not been studied in the trends of economic loss. It was studied only one year in 1994. The trends of economic loss can be conducted to construct the cost indicator of road accidents. The utility of cost indicator of road accidents is indicating the level of economic loss due to road accidents in comparison to the base year. The individual earning function will be used to find the average individual income of victims and families care due to work inability.

In sum, the trends of economic loss and cost indicator of road accidents are interesting to study as to know the economic burden from road accidents. The related factors are also studied in order to estimate the contributing effects of the number of deaths from road accidents. Such a study could be helpful for the organizations in charge of road accidents such as the Department of Highway, Police Department, Land Transport Department, Ministries of Public Health, local government etc. to take appropriate actions to prevent road accidents. Finally, any persons' death or injury is a loss: first for the relatives or friends of a victim and second for



the society whose resources must be expanded to access the problem. Society is diminished by the economic loss and social productivity of road accidents.

1.3 Research Questions

- (i) What is the economic loss due to road accidents?
 - What are the trends of economic loss and cost indicator of road accidents?
 - What is the value of the economic loss and cost indicator of road accidents?
- (ii) What extent have the related factors contributed to number of deaths from road accidents ?

1.4 Research Objectives

1.4.1 General Objective :

This study aims to assess the trends of economic loss from road accident and explore the contribution of related factors that influence the number of deaths from road accidents.

1.4.2 Specific Objectives :

- (i) To estimate the trends of the economic loss and cost indicator of road accidents between 1981 - 1995.
- (ii) To derive the value of the economic loss and cost indicator from road accidents between 1981 - 1995
- (iii) To estimate the contributing effects of the related factors to the number of deaths from road accidents.

1.5 Limitation of the Study

- (i) The assessment of economics loss does not include in the intangible cost such as pain, suffering and loss in psychological caused by the injury.
- (ii) Most of the characteristics of the victims from road accident, which will be used in earning function, are estimated as an average value.
- (iii) Some of the important data are not available for the study in economic loss such as: the length of hospital stay for injured persons from road accidents and the total number of disabled persons from road accidents.
- (iv) Opportunity cost of injured persons could only be calculated in patients report by the Ministry of Public Health.
- (v) The number of deaths from road accidents is used to represent the situation of road accident in Thailand. This omits the influence of the number of population at risk.
- (vi) The number of deaths and injured persons from the report of the Ministry of Public Health may be underestimated.