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# Speed management strategies and drivers' attitudes in Thailand

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ABSTRACT

In Thailand where speeding on highways and roads has been a key contributing factor in road traffic crashes, considerable efforts to control vehicle speeds have been made, mostly through speed limit enforcement. However, the fact that speed limits are very often violated on a large scale in Thailand suggests the need for implementing more effective speed management strategies such as automatic speed cameras, increasing speeding penalty, and smart vehicle design to control vehicle speeds. While the effectiveness of such measures depends mainly on how well they could lead drivers to change speeding behavior, public acceptability is also vital as a key to sustainability of most speed management programs. This paper attempts to identify public acceptability of speed management measures, both currently implemented and under consideration, in Thailand. In doing so, data from the questionnaire surveys based on a random sample of 2180 drivers in Thailand including a wide range of individual characteristics of respondents and their attitudes to select speed management schemes are analyzed using an econometric technique. In particular, we introduce a simplified methodological framework to develop a better understanding of factors that explain drivers' attitudes towards speeding behavior and alternative speed management strategies. Findings from this research provide several important implications that could improve the current practices of speed management in Thailand.


## 1. Introduction

Speed management is one of the biggest challenges for policy makers and road safety professionals around the world. While controlling vehicle speeds on roads is clearly a crucial need for improving traffic safety, this inevitably encounters an enhanced capacity of modern cars to go faster and an increasing demand to build roads with a higher standard, which encourage speeding behaviors.

In Thailand, speed control is at the core of the most recent discussed issue related to road safety, apart from other human related factors such as drunk driving and non-helmet wearing among motorcyclists. Though there are a number of alternative strategies for managing and reducing speed on streets and highways in the road safety knowledge arena, only some of these strategies have been employed in Thailand. With traffic law enforcement as an integral part of the country's speed management policy, physical policing has been the most common method used for speed limit enforcement on highways located outside cities, though it appears to have been in operation sporadically. In this regard, speed offenders along the highway are detected by means of a radar gun, and they are immediately stopped by the highway police. For streets and highways in cities and metropolitan areas where regular police officers have been given the authority, however, it is sadly true that no enforcement of speeding offenders has been in action, partly due to the lack of speed limit enforcement equipment and training.

Apart from the law enforcement, another speed management initiative involves public education campaigns which have been undertaken by various stakeholders. Information on the danger of speeding has been communicated to the public through media releases, tailored feature articles, on-street boards and posters, government publications, and websites. The engineering approach taken as part of speed management measures on streets and highways mainly involves installing rumble strips to alert drivers to the presence of potentially high crash-risk areas. Given the presence of non-standardization for the design and installation, the question of whether any appreciable reduction in vehicle speeds has been achieved in the Thai context remains unanswered.

Despite these efforts, the accident statistics compiled by Thailand's Department of Highways indicate the seriousness of speeding as the principal contributing factor for road traffic crashes and fatalities in the country. From the years 2001 to 2007, speeding involvement has been reported to be as high as nearly 80% of all traffic crashes on national highways, and about two-thirds of fatal crashes on national

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highways was related to speeding. These crash and fatality risks associated with speeding are practically reflected by the fact that speed limits are very often violated on a large scale in Thailand. Some recent roadside surveys for the speed limit compliance rate show that 40% to 70% of car drivers typically exceed the speed limit of 90 kph on highways, while similar results are found for truck and bus drivers who are not allowed to exceed 80 kph [1–4]. Moreover, previous studies, as reviewed in [5], suggest that some obstacles to the success of speed law enforcement in Thailand could be limited understanding of speed regulation and negative public attitude regarding existing speed limit enforcement program.

These findings clearly suggest the urgent need for implementing more effective speed management strategies. Much attention among concerned agencies has increasingly been paid to some other new approaches such as automatic speed cameras, increasing speeding penalty, making use of smart vehicle design to control speed of vehicles such as Intelligent Speed Adaptation (ISA), and installing roundabouts to reduce traffic speeds through a junction. However, deterring the speeding behavior remains to a great extent a real challenge. While the effectiveness of such measures depends mainly on how well they could lead drivers to change speeding behavior, public acceptability is also vital as a key to sustainability of most speed management programs. The use of some aforementioned speed control measures, though presenting no technical difficulty, may not be feasible from the political point of view, if motorists who constitute a majority of the electorate would not stand for such measures. For the successful implementation of speed management and control, it is therefore important for policy makers to determine the acceptability of specific strategies which were influenced by individual drivers' attitudes [6].

The purpose of this research is to gain insight into public acceptability of speed management strategies, both currently implemented and under consideration, in the context of Thailand. Our analysis utilizes the data obtained from questionnaire surveys of randomly selected 2180 drivers in Bangkok and six other provinces. Respondents were asked to express their attitude towards speeding behavior and alternative speed management strategies, while providing personal and other information regarding type and age of their own vehicle, years of driving experience, driving characteristics (*i.e.*, maximum speed used and travel distance), and accident history. In addition to descriptive analysis of the survey data, making use of an econometric technique permits us to empirically identify which particular groups of drivers tend to have positive or negative attitudes towards speeding behavior and specific speed management measures. Findings from this research have several important implications that could improve the current practices of speed management in Thailand. Moreover, if the public acceptability of speed management strategies is known, it will be useful information to design the public campaigns for educating and promoting the speed management strategies.

## 2. Data collection and questionnaire survey

### 2.1. Study area for data collection

The selection of study area was based on the number of speeding-related crashes in the area. Fig. 1 shows the selected study areas where mostly located in the suburb of Bangkok, including seven provinces; Bangkok, Lopburi, Chonburi, Nakhon Ratchasima, Chachoengsao, Samutprakarn and Saraburi. The data collection was conducted at several locations such as gas stations, roadside rest areas, parking lots, public transit terminals, *etc*. Respondents were randomly selected from different days of week, time of the day, places in each province and characteristics of drivers (gender, age, family status, occupation, education, and monthly income). However, the sample for this survey was limited to drivers with age 18 and above who normally drive any of five vehicle types including passenger cars, pickups, vans, buses, and trucks.

### 2.2. Questionnaire survey

A questionnaire was designed in a simple and easy format for the respondents to understand. The questionnaire was divided into three parts. In the first part, the questions are related to socio-economic characteristics, while the second part is related to vehicle use and driving characteristics of the drivers. The first two parts were designed based on the selected influencing factors of drivers' attitudes such as:

- Socio-economic characteristics: gender, age, family status, education, monthly income, occupation.
- Vehicle use and driving characteristics: vehicle type, vehicle age, average maximum speed, average travel distance per day, average travel time per day, driving experience in years, traffic accident history.

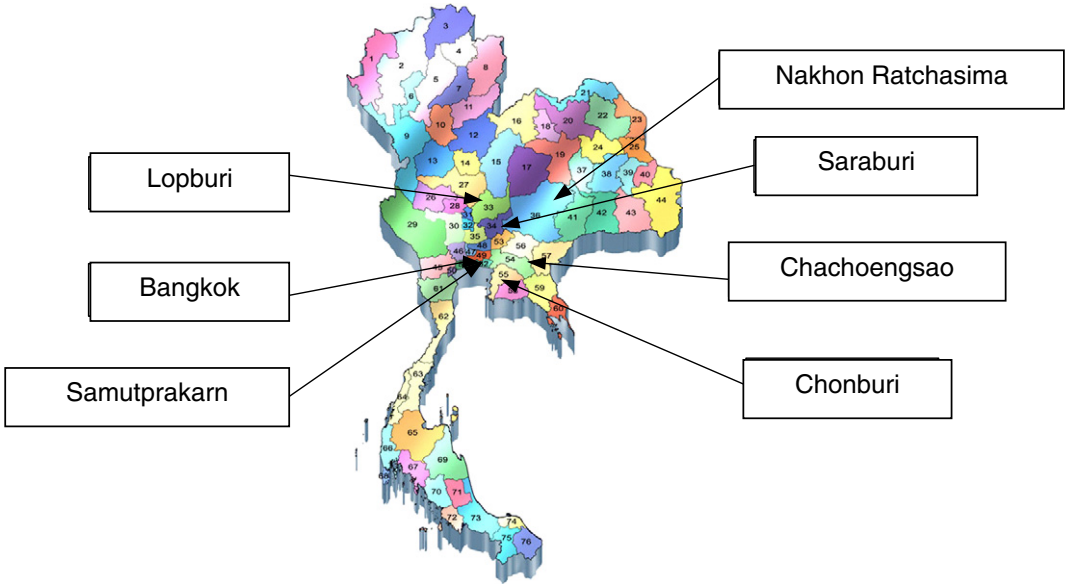


**Fig. 1.** Selected study areas.