

An Analysis of Drivers' Attitudes and Behavior Toward Red Light Cameras in Bangkok and Their Effectiveness in Preventing Red Light Violations.”

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Abstract

An increasing number of cities around the world are currently increasing its investment on surveillance camera systems, including traffic and red light cameras. As red light running is known to be a major cause for collision at intersections, red light cameras could be a solution for enforcement of red light running by actual real-time observation by police officers, which requires substantial manpower and location. Initially invented to provide a more comprehensive enforcement, 24/7 coverage, successive studies are of searching for the level of effectiveness of these cameras. Various studies have implemented different methods, including obtaining data through models, statistics, and surveys in order to come to a reasonable conclusion. The aim of this study is to determine whether there is a change in behavior of drivers upon awareness of red light cameras. The study employs the expected utility function by Becker, 1968, with survey questions directed to explain each of the three present variables: Probability, benefit, and cost. Given  $P$  is the probability of getting away with the violation, there are two cases:  $P$  when there are NO red light cameras and  $P$  when there ARE red light cameras. It is then reasonable to say that the value of  $P$  is high with the installation of cameras ( $P_{hi}$ ), and low without the cameras ( $P_{low}$ ). Based on the central limit theorem, 43 respondents were surveyed. Results show 52% of drivers has changed their behavior, and does not violate after seeing the cameras. The paper also discusses the behavior of other influences, such that a change in the probability of getting caught, also changes the behavior of certain people, accordingly. Costs, measured in the amount of fines, vary according to each type; however results suggested that an increase in punishment (fine) will substantially deter red light violations. The overall result confirm that cameras are considerably effective in deterring red light violations.