

# Abstract

Whenever a government agency creates a new policy, it would be interested in analyzing of its impact on the population. In this study, a diffusion model for the timing of initial adoption of new policy or innovation is developed. This model includes the interdependent decision making in the social networks where participants have heterogeneous motivation to accept the policy or innovation. The basic assumption of the model is that the timing of a consumer's acceptance is related to the number of people in his/her local network who have accepted the policy or innovation. As local networks or peers are important in the formation of public opinion. The model yields good predictions of the policy acceptance peak and the timing of the peak when applied to other data. If we can have a long range forecast of how many people will accept a new innovation or policy and when, this will help the policy makers to plan in advance. An understanding of how changes in policy or innovation affect the outcome also helps in planning efficiently. A behavioral rationale for the model is offered in terms of innovative and imitative behavior.

Key words: Diffusion of innovation, Transportation policy, Collective action, Adoption of policy, Decision making, Behavioral model