



Florida Department of Transportation Research Improving Cost Effectiveness of Financial Incentives in Managing Travel Demand Management (TDM) BDK85-977-41

During the last two decades, financial incentives have become common in efforts to reduce demand on roadways by motivating commuters to use alternative modes of transportation. Despite common use, limited effort has been made to understand how specific incentive plans affect commuter mode choice. A better understanding of the effectiveness of incentives is critical to improving the performance of financial incentives as a transportation demand management (TDM) strategy.

In this project, University of South Florida researchers studied how the elements (form, amount, and structure) of financial incentives determine their effectiveness in changing commuter behavior, and they investigated how commuters develop a habitual mode choice. This research drew on behavioral economics, empirical data, and a controlled field experiment with commuters to understand these relationships.

A comprehensive literature review on various commuter incentive programs in TDM revealed great potential to improve the incentive programs. Researchers catalogued the variety of incentive programs used in domestic and foreign settings, ranging from Tampa to Taipei. Researchers reviewed studies of those incentive programs, where they existed.

To lay the foundation for a controlled field experiment to compare incentive schemes, researchers conducted a Web-based survey of mode choice behavior of Florida commuters and measured the feasibility of commuters adopting non-single-occupant-vehicle options, including telecommuting. Survey results suggested that people change preferences based on how incentives are framed. Most respondents were interested in rewards for reducing vehicle miles traveled (VMT savings) instead of for shifting modes, indicating that shifting modes was not a realistic option for many respondents, especially where alternatives are limited.



Incentives can be effective in motivating commuters to use alternative modes that reduce demand on roadways.

Based on the survey, researchers developed a controlled quasi-experiment to evaluate the effectiveness of financial incentives on commuter behavior. The pilot test, called "I driveless", used two incentive schemes to reward people who reduced VMT compared to their baseline use. Group A participants were rewarded based on completed and reported VMT savings. Group B participants pre-committed to certain VMT reductions, but if unmet, they had to return the incentive. The latter scheme was based on the loss aversion effect: in general, people strongly prefer avoiding losses to acquiring gains. In exit interviews, participants gave feedback on their experience with VMT savings strategies, challenges, alternative mode use during the study period, and recommendations and/or comments about the study.

Results showed that, for both Groups A and B, about 50 percent of participants saved VMT. Significant VMT was saved in both groups beyond the level of compensation. A control group showed no change in VMT from baseline.

Additional findings provided insight into how the incentive programs influenced participant behavior, which can be used to fine-tune TDM strategies and improve the efficiency of Florida's roadways.

Project Manager: Michael Wright, FDOT Public Transportation Office
Principal Investigator: Chanyoung Lee, University of South Florida
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