Carbon Footprinting & Ecodriving:
Understanding How Public Education Can Result In Reduced Greenhouse Gas Emissions And Fuel Use

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Providing ecodriving feedback improves efficiency behavior, particularly driving practices.

Ecodriving, the concept of altering driving behavior and vehicle maintenance practices in existing vehicles, has gained recent prominence as a strategy for drivers to reduce gasoline consumption and greenhouse gas (GHG) emissions. Ecodriving is gaining attention because it is easily implemented regardless of the vehicle driven, and it has been reported to reduce fuel consumption between 10-20%. Consumers who depend on the automobile can take actions to immediately reduce their fuel consumption.

Researchers are assessing how feedback can help inform drivers on how to implement ecodriving practices. Ecodriving feedback can range from public education through static information (e.g., websites and fact sheets) about driving habits and vehicle maintenance to real-time driver feedback devices. Moreover, carbon footprinting allows individuals to monitor their GHG emissions based on personal energy consumption and travel behavior.

This research project focused on four key study questions:

- Will travelers adopt ecodriving driving and maintenance practices in response to ecodriving and carbon footprinting information?
- What methods for disseminating information about ecodriving are effective?
- What is the extent of GHG emission reductions, if the new behaviors are adopted?
- How long will the modified behavior persist?

Study Methods

To answer these questions, this research project involved several methods. First, a literature review assessed the state of ecodriving and carbon footprinting education worldwide. Second, expert interviews were conducted with people involved in educating the public about a variety of environmental goals. Two focus groups discussed responses to Internet-based public education campaigns and specific ecodriving and carbon footprinting websites.

Next, a major component of the project involved a longitudinal survey, conducted with over 100 University of California, Berkeley faculty, staff and students over a period of three months. An "experimental" group was provided ecodriving information at www.ecodrivingusa.com, while a "control" group was not. Both groups were asked to complete a series of questionnaires to evaluate whether any behaviors had changed.

Finally, the project included a 300-person intercept (in-person) survey, conducted with the general public in the San Francisco Bay Area, which employed a simple, easy-to-read ecodriving fact sheet.

Findings

Providing ecodriving feedback improves efficiency behavior in drivers.

The results from the longitudinal study design indicate that providing information about ecodriving does influence the behavior of some drivers, and shifts in behavior are large enough to be statistically significant. The reported shifts provide evidence of improvement in some drivers based on the pre- and post- responses to several key questions. The statistical significance of shifts observed in the experimental group, coupled with the absence of significance in shift observed in the control group, does indicate that the website had an effect.

Respondents were more amenable to driving practices than maintenance practices. The number of people engaging in meaningful changes in maintenance practices within the experimental group is far smaller than the majority who did alter some driving practices. Results suggest that maintenance practice information could be improved. However, this also could indicate that maintenance practices are more difficult to implement and thus may be better targeted by automation technologies.

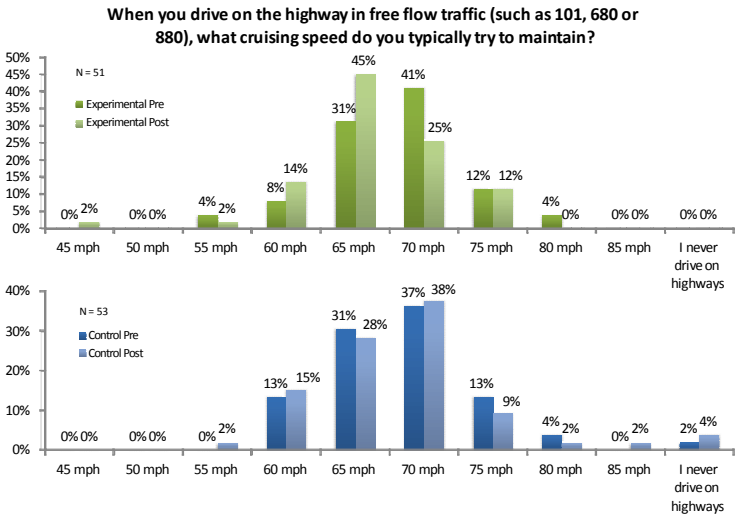

Figure 1. Sample pre- and post-survey question regarding highway cruising speed, comparing experimental and control groups.

Policy Recommendations

The authors recommend increased public education on ecodriving and carbon footprinting for greater awareness in the following ways:

- Ecodriving information should be provided at the time people obtain or renew their licenses. Website information appears to assist a subset of people toward behavior modification at very little cost. Therefore, presenting similar information at this time may impact a larger group of drivers at minimal cost.
- Ecodriving and carbon footprinting educational websites should connect economic and environmental concerns, but this should focus on economic incentives to address drivers' personal finances.

About the Authors

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To Learn More

For more details about the study, download the full report at ***transweb.sjsu.edu/project/2808.html***

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