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RESEARCH
SERVICES SECTION

TECHNICAL
SUMMARY

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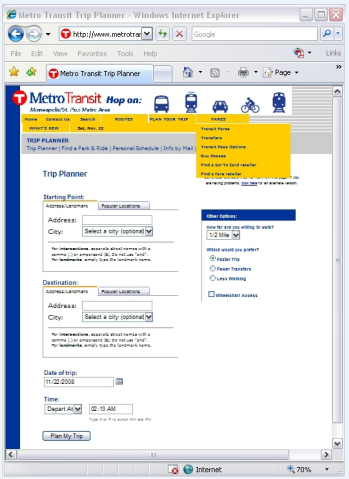

Metro Transit's online trip planner has received positive response.

Improving Carsharing and Transit Service with ITS

What Was the Need?

Intelligent Transportation Systems refers to any use of information and communications technology to solve surface transportation problems. Recent research into how ITS can best serve Minnesota's diverse population indicates that two ITS applications—carsharing and Advanced Transportation Information Services—could bring significant benefits by providing travelers with increased mobility and access to transit services.

Carsharing is the practice of renting cars for short periods, usually by the hour; this option encourages participants to give up car ownership and related fixed costs. In 2005, Mn/DOT supported a market assessment to determine the potential for carsharing in the Twin Cities. Shortly afterward, the HOURCAR carsharing organization began offering service in the Twin Cities. While not directly involved in CSO operations, Mn/DOT has a stake in helping value-pricing strategies like CSOs succeed, and helping them to better understand their customers will increase the likelihood that these programs will remain viable.

Advanced Transportation Information Services applications, like the online public transit sites used to locate transit route information and plan trips, are becoming more prevalent and often serve as the only communication point between the user and the transit service. Understanding how users' interactions with these ATIS applications affect their perceptions of the agency and its services will allow agencies to improve their services.

What Was Our Goal?

The objectives of this research were to:

- Gather information about the carsharing market in the Twin Cities to make recommendations for improvements to CSO providers.
- Gather information regarding how citizen perceptions of trust and confidence in a public transit agency and its service are affected by the use of an online trip planner.

What Did We Do?

Researchers approached the two elements of the study with different research strategies.

Carsharing. At the time of the study, two CSOs operated in the Twin Cities: HOURCAR and Zipcar. Zipcar elected not to participate in the study.

In the fall of 2007, HOURCAR, a nonprofit CSO, operated 15 neighborhood hubs with one or two cars at each hub. During a three-week period from September to October 2007, researchers administered an electronic survey of 28 questions to members of HOURCAR and a control group, randomly selected from residents of census tracts containing HOURCAR hubs. Researchers analyzed 152 responses from the control group and 186 HOURCAR member responses. An electronic copy of a travel log was provided for participants to fill in the trips they made on a single weekday.

ATIS. Researchers used surveys and focus groups to investigate an online trip planner developed and maintained by Metro Transit, the largest transit provider in the Twin Cities. Links to an online survey designed to inquire about user experiences with the online trip planner were placed on the Metro Transit Web site during the month of March 2008, resulting in 446 completed surveys. To gain more in-depth understanding of user perceptions, researchers conducted two 90-minute focus group sessions, which were attended by 24 survey respondents.

continued

"Carsharing organizations in the Twin Cities can use the results of this study to more thoroughly understand their market and adjust their services to make their programs more viable."

–Ken Buckeye,
Program Manager, Mn/DOT Office of Policy Analysis, Research & Innovation

"This study demonstrated that ITS can be used to promote alternative travel modes as well as more conventional, highway-based applications."

–Frank Douma,
Assistant Program Director, State and Local Policy Program, University of Minnesota Hubert H. Humphrey Institute of Public Affairs

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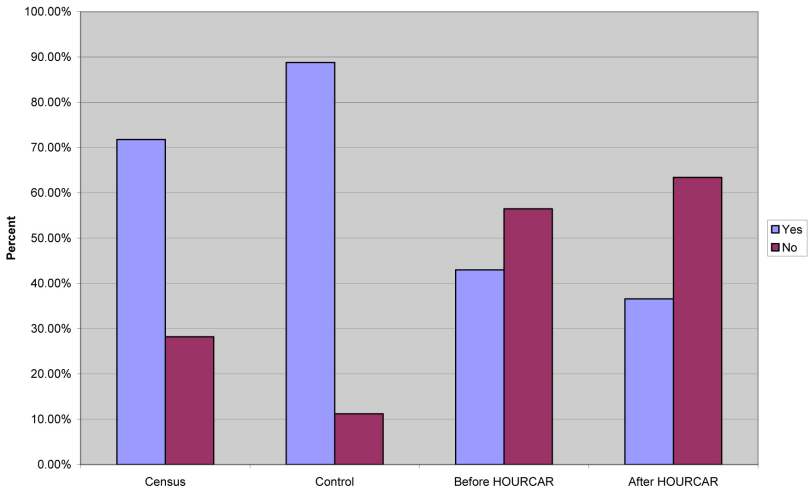

Fewer members owned cars (blue) after joining HOURCAR (group 4) than before joining (group 3), but this group's ownership rates were much lower before joining than the population as a whole (group 1).

What Did We Learn?

Results of the carsharing survey included:

- Auto ownership declined among CSO members in nearly all cases. Researchers' extrapolated calculations indicated that each HOURCAR removes 2.5 other vehicles. However, HOURCAR members surveyed showed a low level of private vehicle use as compared to the population even before joining HOURCAR.
- HOURCAR members displayed no significant demographic differences from the control group.
- Convenience and financial considerations were the primary motivations for joining HOURCAR, not environmental considerations.

For the ATIS element of the study, researchers found:

- A strong positive view of the trip planner, including generally positive responses to its new features. This service was found to help increase trust in Metro Transit.
- Negative experiences, including bus driver behavior and attitudes, customer service functions, as well as bus and bus stop cleanliness, affected how participants perceived Metro Transit.

The online transit trip planner could provide a means for improving perceptions of trust and confidence by mitigating these negative experiences.

What's Next?

The results of this study are being presented at the 2009 Transportation Research Board Annual Meeting. Mn/DOT is supportive of continuing research into the viability of CSOs. Further research could be pursued under the Federal Highway Administration's Value Pricing Pilot Program. This competitive solicitation provides funding to support studies of a value-pricing project, like a CSO, that manages congestion on highways through tolling and other pricing strategies. Additional research might include a follow-up survey in a couple of years to assess the ongoing travel choices of HOURCAR members, including the impact of higher costs of car ownership on CSO member travel behavior.

This Technical Summary pertains to Report 2008-43, "Improving Carsharing and Transit Service with ITS," published September 2008. The full report can be accessed at http://www.lrrb.org/PDF/200843.pdf.