

Drivers cautious but curious over automated cars, first Canadian study shows

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Schulich transportation engineering master's student Mahsa Ghaffari has conducted a survey on attitudes toward autonomous (driverless) vehicles. Credit: Riley Brandt, University of Calgary

Say what you will about old dogs and new tricks, it appears men over 50 are most keen to embrace fully automated cars when computer-chauffeured vehicles finally appear on Canadian streets.

That's one key finding of a groundbreaking University of Calgary study, the first in Canada to measure attitudes toward automated vehicles

(AVs) and society's willingness to accept a future where vehicles can drive themselves.

"When [fully autonomous vehicles](#) are available, [drivers](#) over 50 years old would be more willing to own and drive them for commute trips, and men in particular," explains author Mahsa Ghaffari, a graduate student at Schulich School of Engineering.

"For me, the results of both age and gender were surprising and interesting."

Confident, aggressive drivers least likely to surrender control

Conducted in Edmonton and Calgary, this survey marks the first time residents in a major Canadian city have been asked for opinions on different levels of vehicle autonomy and the choices they'd make between private and shared vehicles.

Based on a stated-preference survey of 485 men and women across all 18-plus age groups, the research paper also looks at experience and habits behind the wheel, including tendency to speed—and it shows confident and aggressive drivers are least likely to surrender control.

"Respondents who stated to be either aggressive drivers, confident about their response time, or enjoy driving or dangerous driving, are shown to be less willing to give up control of the tasks to the vehicle," says Ghaffari in her report.

Written as a master's thesis under the supervision of Lina Kattan, associate professor at Schulich's Department of Civil Engineering and Urban Alliance Professor in Transportation Systems Optimization,

Ghaffari's paper shows a majority are ready to accept AVs to some degree, based on perceived benefit, cost and convenience, as well as various levels of automation.

Enthusiasm for automation varies depending on the auto-task

Some citizens are enthusiastic about certain auto-tasks: 81 per cent of respondents said they are willing "to a very high degree" to let a computer choose the route, and 43 and 40 per cent are equally willing to allow control of lane keeping and speed, respectively.

On the other end of the scale, 15 per cent of drivers are "not at all" or "to a very low degree" willing to let computers control braking and accelerating, and 12 per cent had negative feelings about automated speed control.

The detailed survey outlined a multitude of scenarios, and Ghaffari found automated vehicles are more acceptable for commuting to work than non-commute trips like shopping and recreation within the city. "Drivers like to cede the control to the vehicle for trip destinations outside the city so that they can use their time more efficiently," reported Ghaffari.

Other findings include:

- Respondents who drive 10 to 20 hours per week are approximately three times more willing to give up control compared to those who drive less than 10 hours per week.
- People without children showed more trust in vehicle automation.
- There are widespread concerns about how AVs will handle poor

weather conditions and unexpected situations like a child running into traffic.

- Only six per cent to eight per cent of the respondents would trust AVs completely in all situations. More than half of the respondents are highly willing to use AVs if more tests are conducted to confirm reliability and safety performance.
- Only 36 per cent of respondents said they would feel safe without looking at the road when the vehicle is driving itself and 22.5 per cent said they would be constantly watching the roads rather than reading, texting and so forth.
- Females and people over 35 are less keen on sharing a ride with strangers in an autonomous [vehicle](#).
- Drivers with more than 35 years of experience are most open to full automation.

Overall, the civil-engineering graduate says the study, funded by Urban Alliance Professorship and by the AMA/AITF Smart Multimodal Transportation Systems strategic fund, points to a society cautious but curious about automated vehicles.

"It's a matter of trust, and the more people know and experience, the more they will trust driverless vehicles," says Ghaffari.

Provided by University of Calgary

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