CONFIDENTIAL - FOR PEER-REVIEW ONLY

Automated Vehicles - Label and Liability 08-14-2023 (#140949)

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1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
In a previous study, we found that marketing labels of autonomous vehicles (AVs), specifically whether it is labeled'Autopilot' or 'Copilot', affects the perceived level of automation of the AV, with higher levels of perceived automation for'Autopilot' compared to 'Copilot'.
In this study, we are interested in studying the effect of the marketing labels on the ascriptions of responsibility and liability on the fi rm, software, and the human driver in the event where an AV is involved in an accident.

3) Describe the key dependent variable(s) specifying how they will be measured.
The dependent variables in this study are (1) the perceived level of automation of the AV, (2) the responsibility of the AV software, (3) the responsibility of the human driver, (4) the liability of the firm and (5) the liability of the human driver. For (1), we will measure the perceived level of automation of the autonomous vehicles on 6-point scale with endpoints, 1 – Level 1 automation (not automated at all) and 6 – Level 6 automation (fully automated). For (2) and (3), we will measure the level of responsibility with 2 questions on a 100-point scale with endpoints, 0 – completely disagree that the AV system (human driver) is responsible for the accident and 100 – completely agree that the AV system (human driver) is responsible for the accident. For (4) and (5), we will measure the level of liability with 2 questions on a 100-point scale with endpoints, 0 – completely disagree that the company (human driver) is liable for damages in the accident and 100 – completely agree that the company (human driver) is liable for damages in the accident.
For (2) the responsibility of the AV and (4) the liability of the firm, we would create a composite measure called "firm liability" if the Cronbach Alpha were larger than 0.7 by taking a simple average between two of the measures. We will do the same for (3) the responsibility of the human driver and (5) the liability of the human driver, and combine into a composite measure called "human liability if the Cronbach Alpha were larger than 0.7.

4) How many and which conditions will participants be assigned to?
This will be a between-subjects design. Participants will be randomly assigned to two different marketing labels for the AV, namely 'Autopilot' or 'Copilot'. They will be told that the AV firm is calling their AV system one of the two marketing labels.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
We will conduct ANOVA test on the difference in means for the dependent variables for the two labels. We predict that the AVs with marketing label 'Copilot' would have lower ascriptions of responsibility and liability to the firm and software, but higher ascriptions of responsibility and liability to the human driver. Regardless of the ANOVA result, we will conduct t-tests comparing the dependent variables for the two conditions.
We will run a parallel mediation analysis with perceived automation capability as the mediator, the label as the predictor variable and the responsibility and liability measures (or composite liability measures) as the outcome variables.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
We will exclude participants who fail any of three comprehension check questions incorrectly.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
We will collect responses from 1,000 participants.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
Only participants who pass at least one of two attention checks at the beginning of the survey will be eligible to participate. We will include some demographic questions but nothing identifiable (age, gender, whether they have a drivers license). We will also ask participants how familiar they are with AVs on a 100-point scale with endpoints, 0- Very little and 100- A lot. These will be included as covariates in additional exploratory analyses as robustness checks.