# Applying the Unified Theory of Acceptance and Use of Technology (UTAUT) to the Adoption of Private and Fleet-based AVs

## Singapore Survey
March 2019

## Part 0:  Informed Consent/Introduction

Thank you for your interest in participating in our research study! This study---conducted by the Massachusetts Institute of Technology (MIT) Urban Mobility Lab---collects information about people's travel behavior and preferences among different transportation modes.

**Procedure**
The study consists of a simple questionnaire survey, which should take about 20 minutes to complete. You must be on a large-screen device to complete this study.

**Risks/Discomforts**
Risks are minimal for involvement in this study. However, you may feel emotionally uneasy when asked to pass judgment on certain questions.

**Benefits and Participation**
Participation in this research study is completely voluntary. Through your participation, researchers will learn more about how to meet the needs of travelers when providing varied transportation services.

At any time during the study, you have the right to withdraw at anytime or refuse to participate entirely. If you desire to withdraw, please close your internet browser.

**Confidentiality**
This survey does not ask you for any information that can be used to identify you. All data obtained from participants will be kept strictly confidential and will only be reported in an aggregate format (as combined results), never as individual responses. The data collected will be stored in the HIPPA-compliant, Qualtrics-secure database until it has been deleted by the primary investigator. No one other than the primary investigator or assistant researchers listed below will have access to the data, unless additional permissions are received.

**Questions about the Research or about your Rights as Research Participants?**
If you have questions regarding this study, you may contact Joanna Moody at +1-434-409-5679 / jcmoody@mit.edu or Professor Jinhua Zhao of the Department of Urban Studies and Planning at +1-617-324-7594 / jinhua@mit.edu. If you have questions you do not feel comfortable asking the researcher listed above, you may contact MIT's Committee on the Use of Humans as Experimental Subjects (COUHES) via email at couhes@mit.edu or securely through the web at https://couhes.mit.edu/contact-us.

I have read and understood the above consent form and desire of my own free will to participate in this study.
- Yes
- No

## Eligibility Screening

Are you a Singapore citizen or permanent resident?
- Yes
- No

Are you currently residing in Singapore?
- Yes
- No

[If "No" is selected for either of the above, skip to end of survey]

We care about the quality of our survey data and hope to receive the most accurate measures of your opinions, so it is important to us that you thoughtfully provide your best answer to each question in the survey.

Do you commit to providing your thoughtful and honest answers to the questions in this survey?
- I will answer thoughtfully and honestly
- I will not answer thoughtfully and honestly
- I can't promise either way

[If "I will not answer thoughtfully and honestly" or "I can't promise either way" is selected, skip to end of survey]

## Response Quota Screening

First we would like to ask you a few screening questions about yourself and your household.

For the purposes of this survey, a household refers to a group of two or more persons living together in the same house and sharing common food or other arrangements for essential living. It also includes a person living alone or a person living with others but having his own food arrangements. Although persons may be living in the same house, they may not be members of the same household.

In which year were you born? _____
[If birth year is greater than 2001 (age < 18), skip to end of survey]

How many cars does your household currently lease or own?
- 0
- 1
- 2
- 3 or more

What is your household monthly income (including employer CPF contributions, if applicable) in Singapore dollars? [drop-down menu]
- Household currently has no source of earned income
- Below S$1,000
- S$1,000 - S$2,499
- S$2,500 - S$3,999
- S$4,000 - S$4,999
- S$5,000 - S$5,999
- S$6,000 - S$6,999
- S$7,000 - S$7,999
- S$8,000 - S$8,999
- S$9,000 - S$9,999
- S$10,000 - S$10,999
- S$11,000 - S$12,999
- S$13,000 - S$14,999
- S$15,000 - S$17,499
- S$17,500 - S$19,999
- S$20,000 or more

# Part 1. Current Travel Behavior

Thank you so much for your willingness to participate in our survey!
This first set of questions asks you about your current travel behavior.

What percentage of your monthly trips do you take by each of the following modes? (Trips can include, but are not limited to, any travel among home, work, school, shopping, food, recreation, healthcare or other social service/facility, etc.)
(responses must add up to 100%)
[slider bars 0-100%; constant sum]
- Private/personal car
- Taxi
- Ridehailing: private service (e.g. GrabCar Economy or Premium, Ryde, or GOJEK GOCAR)
- Ridehailing: shared service (e.g. GrabShare or Ryde Carpool)
- Motorcycle or scooter
- MRT/LRT
- Bus
- Bicycle
- Walk

What driving license(s) do you currently hold?
[allow multiple responses]
- None
- Class 1
- Class 2B, Class 2A, or Class 2 (Motorcycle)
- Class 3, Class 3A, Class 3C or Class 3CA (Motorcars)
- Class 4A, Class 4, or Class 5 (Heavy motor vehicles)

Can you move outdoors independently?
- Yes: without assistance
- Yes: with physical, auditory, or visual assistance
- No

How many of the following vehicles does your household currently lease or own?
[slider bars from 0 to 5]
- Motorcycle or scooter
- Goods vehicle or (mini)bus
- Bicycle

## Ridehailing/Ridesharing

Smartphone applications have enabled "ride-hailing" or "mobility-on-demand" service, which allow individuals to input their origin and destination and book a vehicle/driver to serve their trip in real-time. There are many companies that currently operate these services, which come in two types:

1. Private: where the vehicle is reserved exclusively for yourself (and your guests).
[Examples of private ridehailing services include GrabCar Economy or Premium, Ryde, or GOJEK GOCAR.]

2. Shared: in which you are matched with another rider in the system with an overlapping trip.
[Examples of shared ridehailing services include GrabShare or Ryde Carpool].

Have you ever worked as a driver for a ridehailing service?
- Yes
- No

Have you ever used these ridehailing services (as a passenger)?
[allow multiple responses]
- No: I have never used a ridehailing service
- Yes: I have used a private (or exclusive) ridehailing service
- Yes: I have used a shared ridehailing service

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*If "Yes: I have used a private (or exclusive) ridehailing service" is selected:*

In the past month, how many trips have you made using a private ridehailing service?
[slider bar; 0-30]

If the private ridehailing service had not been available, what percentage of these private ridehailing trips would you have made by the following modes instead?
(responses must add up to 100%)
[slider bars 0-100%; constant sum]

- Personal car
- Shared ridehailing service
- Motorcycle
- Taxi
- Public transit (MRT, LRT, and/or bus)
- Nonmotorized transport (walking or biking)
- None; would not have made the trip

What is your overall satisfaction with private ridehailing services?
[star rating; 0-5 with half steps]

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*If "Yes: I have used a shared ridehailing service" is selected:*

In the past month, how many trips have you made using a shared ridehailing service?
[slider bar; 0-30]

If the shared ridehailing service had not been available, what percentage of these shared ridehailing trips would you have made by the following modes instead?
(responses must add up to 100%)
[slider bars 0-100%; constant sum]

- Personal car
- Private ridehailing service
- Motorcycle
- Taxi
- Public transit (MRT, LRT, and/or bus)
- Nonmotorized transport (walking or biking)
- None; would not have made the trip

What is your overall satisfaction with shared ridehailing services?
[star rating; 0-5 with half steps]

## Primary Vehicle Details

[This question block is shown only to those respondents who did not answer "0 to the quota screening question: "How many cars does your household currently own?"]

You indicated that your household owns at least one car.
Please tell us a little more about the household car that you primarily (most regularly) use.

Was this vehicle purchased used or new?
[drop-down menu]
- Used/pre-owned
- New

In what year (YYYY) was this vehicle purchased? _____
[If YYYY => 1990, then vehicle was purchased under Certificate of Entitlement (COE) policy]

What was the purchase price of the vehicle (including the COE price, if applicable)? (in Singaporean dollars)
[drop-down menu options if vehicle was purchased "Used/pre-owned"]
- Below S$10,000
- S$10,000-19,999
- S$20,000-29,999
- S$30,000-39,999
- S$40,000-49,999
- S$50,000-59,999
- S$60,000-69,999
- S$70,000-79,999
- S$80,000-89,999
- S$90,000-99,999
- S$100,000-149,999
- S$150,000-199,999
- More than S$200,000
- Or provide exact value: _____

[drop-down menu options if vehicle was purchased "New"]
- Below S$50,000
- S$50,000-74,999
- S$75,000-99,999
- S$100,000-124,999
- S$125,000-149,999
- S$150,000-174,999
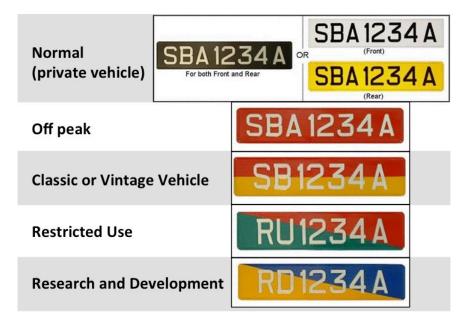- S$175,000-199,999
- S$200,000-249,999

- S$250,000-299,999
- S$300,000-$349,999
- More than S$350,000
- Or provide exact value: _____

What type of vehicle is it? (choose all that apply)
- Sedan
- Hatchback or wagon
- Sports car
- Minivan/van
- Sport utility vehicle (SUV)
- Pick-up or other small truck
- Luxury
- Hybrid vehicle
- Plug-in electric vehicle

In Singapore, vehicles can be registered under multiple types of license plates. The type of plate is distinguished by the first letters (prefix) and their coloring as in the image below:



Under what type of license plate is this vehicle registered?
- Normal (private vehicle)
- Off peak
- Classic or vintage vehicle
- Restricted use
- Research and development

Who is the vehicle registered under?
- Individual: me
- Individual: member of my household other than me
- Company

## Commute Trip

Do you have a fixed school and/or work place?
- Yes, school and/or workplace away from home
- Yes, school and/or work at home
- No fixed school or work place
- Not currently employed or going to school

[If "yes, school or workplace away from home" proceed to next set of questions regarding commuting behavior; otherwise, end block]

What is the postal code of your school or workplace?
[open text entry; response must be numeric, 6 digits]

Which option best describes how you travel from home to school/work on a typical commute?
(if you use multiple modes on your typical commute trip, please select the mode that is used for the longest leg of the journey)
- Private/personal car: driver
- Private/personal car: passenger
- Ridehailing: private service
- Ridehailing: shared service
- Taxi
- Company, school, or shuttle bus/van
- Public bus only
- MRT/LRT only
- MRT/LRT and public bus
- Motorcycle/scooter (rider or passenger)
- Bicycle
- Walk
- Other: _____

How often do you take this typical commute trip (above)?
[drop-down menu]
- 6-7 days/week
- 5 days/week
- 3-4 days/week
- 1-3 days/week
- Once every two weeks
- Once every month

## Car Pride

Please tell us about your attitudes towards **driving/using a car now and in the future**.
If you do not drive a car now, please imagine that you do and answer the questions about your potential general and future car use. [13]
[7-point Likert Scale; strongly agree to strongly disagree]

| [statements] | Strongly agree | Agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|---|
| | O | O | O | O | O | O | O |

- Driving meets my self esteem or personal image
- Driving a car makes me feel superior to those who don't
- Driving a car positively affects my perception of myself
- I would love to be seen more often driving
- If more people saw me in/with my car, I would drive more
- *Attention check:* [Please select "somewhat disagree"]
- I gain respect from my peers because I drive a car


Please tell us about your attitudes towards **owning a car now and in the future**.
If you do not own a car now, please imagine that you do and answer the questions about your potential general and future car ownership. [13]
[7-point Likert Scale; strongly agree to strongly disagree]

- Having a car is connected with one's social image
- I deserve to own and express myself with a great car
- Others would see me as more successful if I owned a better car or more cars
- I have achieved in life and therefore I deserve a good car
- I feel owning a car is a positive component of my identity
- I want to have a successful life and that includes owning a nicer car or more cars


## Bus Shame

Please tell us how you feel about riding the bus now and in the future.
If you do not ride the bus, please imagine that you do and answer the questions about general and future bus usage.
[7-point Likert Scale; strongly agree to strongly disagree]

- I am proud of riding the bus
- I feel that riding the bus positively impacts my social image
- Only poor people ride the bus
- I gain respect from my peers when I ride the bus
- I feel successful riding the bus
- I feel like a loser if I ride the bus
- I should not ride the bus if I have achieved a certain level of success in my life/career
- People who ride the bus should be ashamed

# Part 2: Autonomous Vehicle Use Intentions

In this next set of questions, we are going to ask you about automated vehicle technology. There is a range of automated vehicle technology, from simple driver assistance technology (such as automatic braking and lane departure warnings) now available in many vehicles to complete automation (often known as self-driving car technology).

## Experience and Safety

What is your current level of knowledge of autonomous vehicle technology? [12]
- I have no knowledge of autonomous vehicles
- I have little knowledge of autonomous vehicles (for example, I have heard of or seen them)
- I have a moderate knowledge of autonomous vehicles (for example, I have read about them)
- I have advanced knowledge of autonomous vehicles
- I am a developer of autonomous vehicle technology

Have you ever ridden in an autonomous vehicle?
- Yes
- No

How safe do you think autonomous vehicle technology is today? [12]
- Very safe
- Somewhat safe
- Not very safe
- Not safe at all

How soon, if at all, do you think autonomous vehicles will be safe enough for you to consider using one? [12]
- I would consider using one now
- Within the next 2 years
- In 2-5 years
- In 5-10 years
- In 10-20 years
- More than 20 years
- Never

## Private Vehicle Ownership vs. Autonomous Mobility-on-Demand

This section of the survey asks you to imagine a scenario in which vehicles have achieved complete automation. This means that the automated vehicle system controls all driving-related tasks and requires no human attention or intervention on the part of the passenger.

Consider that completely automated vehicle technology is available today and can be accessed in one of three ways: 1) privately owned, 2) private hailed service, or 3) shared hailed service. Each of these is described in more detail below.

First, completely automated vehicles can be purchased and privately owned, just as with human-driven cars today. Alternatively, completely automated vehicles are operated as a fleet by a public or private service provider, similar to how ridehailing services are operated today. In such an "autonomous-mobility-on-demand" service, trips in a completely autonomous vehicle

can be booked via a smartphone application in real-time (similar to how one can book a ride with a human driver today). Just as how human-driven ridehailing services offer private or shared service, autonomous-mobility-on-demand services can be either private (booked exclusively for you and your guests) or shared (in which you are dynamically matched with another rider.

*Private Autonomous Vehicle Ownership*
If completely autonomous vehicles were available today, how likely would you be to purchase one as your next vehicle?
[7-point Likert Scale; extremely likely to extremely unlikely]

How much more would you be willing to pay for a completely autonomous vehicle compared to a manually-driven vehicle that is otherwise equivalent? (in Singaporean dollars)
[open text entry]

If you owned a completely autonomous vehicle, what percentage of your trips would you take in it each month?
[slider bar from 0-100%]

*Autonomous Mobility-on-Demand Service Use*
If a completely autonomous mobility on-demand service were available today, how likely would you be to use:

|  | Extremely likely | Likely | Slightly likely | Neither likely nor unlikely | Slightly unlikely | Unlikely | Extremely unlikely |
|---|---|---|---|---|---|---|---|
| The private / exclusive service | O | O | O | O | O | O | O |
| The dynamically shared service | O | O | O | O | O | O | O |

If you had ready access to a completely autonomous mobility-on-demand service, what percentage of your monthly trips would you take using:
[slider bars from 0-100%]

- The private/exclusive service
- The dynamically shared service

*If respondent indicates their household owns > 0 vehicles in quota screening question:*

If you had ready access to a completely autonomous mobility-on-demand service, would your household own fewer cars?
- Yes
- No

# Part 3: Latent Factors in the UTUAT

For the following items, continue to imagine that you have access to a completely autonomous vehicle. This vehicle may be either your own personal vehicle or a vehicle that you can order to pick you up and drop you off whenever and wherever you need to go. In either case, the vehicle system is completely autonomous, requiring no human intervention regardless of the driving environment.

## Performance Expectancy (including perceived usefulness)

To what extent do you agree with the following statements regarding the performance of a completely autonomous vehicle?
[7 point Likert scale; strongly agree to strongly disagree]

- *Useful:* I would find using a completely autonomous vehicle useful in my daily life. [1]
- *Productivity:* Using a completely autonomous vehicle would allow me to be more productive while traveling. [2,3]
- *Safety:* Using a completely autonomous vehicle would make me safer from traffic accidents. [3,4]
- *Efficiency:* Using a completely autonomous vehicle would help me get to my destination more quickly [5]
- *Access:* Using a completely autonomous vehicle to travel would help me to achieve things that are important to me. [1,6]
- *Convenience:* Using a completely automated vehicle would not be more convenient than using my existing form(s) of travel. [5; rev]
- *Parking:* Completely autonomous vehicles would make my life easier since I would no longer need to look for parking. [7]

## Effort Expectancy *(including perceived ease of use)*

To what extent do you agree with the following statements regarding the expected effort of using a completely autonomous vehicle?
[7 point Likert scale; strongly agree to strongly disagree]

- Learning to use a completely autonomous vehicle would be easy for me [1,2]
- Interacting with a completely autonomous vehicle would not require a lot of mental effort [2]
- It would not take me long to learn how to use a completely autonomous vehicle [5]
- *Attention check:* [Please select "somewhat agree"]
- It will be a lot of work to figure out how to use a completely autonomous vehicle. [3; rev]
- I would find it easy to get a completely autonomous vehicle to do what I want to do. [2]

## Social Influence

To what extent do you agree with the following statements about social influences on your autonomous vehicle use?
[7 point Likert scale; strongly agree to strongly disagree]

- People whose opinions I value would approve of me using a completely autonomous vehicle [4,6]
- I would be more likely to use a completely autonomous vehicle if my friends and family use it. [5]
- People who are important to me would think that I should use a completely autonomous vehicle [6]
- People who influence my behavior would discourage me to use a completely autonomous vehicle. [6; rev]

## Facilitating Conditions *(could include perceived behavioral control, perceived risk, and fitness)*

To what extent do you agree with the following statements about the conditions facilitating your potential use of autonomous vehicles?

<span style="color:gray">[7 point Likert scale; strongly agree to strongly disagree]</span>

- *Risk:* Using a completely autonomous vehicle would be risky. [2]
- *Interoperability:*
    - Using a completely autonomous vehicle would work well with other smart technologies that I use. [4]
    - Completely autonomous vehicle technology would be compatible with other forms of transport I use. [6]
- *Lifestyle fit:* Using a completely autonomous vehicle would fit into my lifestyle. [4]

## Hedonic Motivations *(including sensation seeking)*

To what extent do you agree with the following statements about the pleasures of traveling in an autonomous vehicle?

<span style="color:gray">[7 point Likert scale; strongly agree to strongly disagree]</span>

- Using a completely autonomous vehicle would be fun. [1,6]
- I would enjoy traveling in a completely autonomous vehicle. [1,6]
- I would miss the experience of driving when using a completely autonomous vehicle [rev]
- I would prefer not to have the responsibility of driving. [7]

# Part 4: Additional Latent Factors

## Trust

To what extent do you agree with the following statements about your trust in autonomous vehicle technology?

<span style="color:gray">[7 point Likert scale; strongly agree to strongly disagree]</span>

- *General Trust:* Overall, I feel I could trust a completely autonomous vehicle. [2]
- *System Transparency:* A completely autonomous vehicle would act predictably. [2]
- *Technical Competence:*
    - A completely autonomous vehicle system would be free of error. [2]
    - I would be able to depend and rely on a completely autonomous vehicle. [2]
    - A completely autonomous vehicle would act consistently in a variety of circumstances. [2]
    - People would need to watch self-driving cars closely to be sure the computers don't make mistakes. [3; rev]
- *Situation Management:* Completely autonomous vehicle would provide adequate, effective, and responsive help should an issue arise. [2]

## Technology Interest

To what extent do you agree with the following statements about your interest in new technology?

<span style="color:gray">[7 point Likert scale; strongly agree to strongly disagree]</span>

- I try new technologies before others that I know. [7,8]
- I am generally one of the last to try a new technology product. [5,8; rev]
- *Attention check:* [Please select "strongly disagree"]
- I know more than others about the latest technologies. [7,8]
- New technologies excite me. [7,9]

- I have little to no interest in new technology. [rev]
- I often purchase new technology products, even though they are expensive. [7,10]
- I like to think of myself as a trendsetter when it comes to new technologies. [11]

# Part 5. Socio-Demographic Information

In this final section of the survey, we ask that you provide us additional information about yourself and your household. As with all other responses, data will be kept completely anonymous and confidential.

How many people are there in your household (including yourself)?
[dropdown menu: {1, 2, 3, 4, 5, 6, 7 or more}]

How many working adults are there in your household?
[dropdown menu: {0, 1, 2, 3, 4 or more}]

How many kids (ages 10 and younger) are there in your household?
[dropdown menu: {0, 1, 2, 3, 4 or more}]

What type of dwelling does your household currently live in?
- HBD apartment/condominium
- HUDC apartment
- Private apartment/condominium
- Landed property
- Other type of property

Does your household own this dwelling?
- Yes: owned and fully paid for
- Yes: owned with housing loan
- No: rented
- No: provided with subsidy or free by employer
- No: provided with subsidies or free by parents/relatives/friends/others

What is the postal code of your home/residence?
[open text entry; must be numeric with 6 digits]

*General Pride:* To what extent do you agree with the following statements about yourself and your accomplishments in life? [13]
[7 point Likert scale; strongly agree to strongly disagree]
- I am proud of myself and what I have achieved
- I feel a sense of self-worth
- I have accomplished a degree of greatness in my life and career
- I would consider myself superior to the majority of my peers
- I am not ashamed of who I am and what I will become
- My peers would say that I am successful
- I am confident in my abilities

What is the highest level of education you have completed/attained?
- Pre-primary or primary
- Secondary: "N" & "O" levels
- Junior College/Upper Secondary: "A" level
- Diploma: Polytechnic or others
- University: Bachelors Degree
- University: Masters Degree
- University: Doctoral Degree or other advanced professional training

Which option best describes your current employment status?
[allow multiple selection]
- Employed: full time
- Employed: part time
- Self-employed: full time
- Self-employed: part time
- Contributing family worker (assist in the operation of family business without receiving regular wages)
- Unemployed looking for work
- Unemployed not looking for work or unable to work
- Retired
- Student

With which ethnic group(s) do you identify?
[allow multiple selection]
- Chinese – includes Hokkiens, Teochews, Canonese, Hakkas, Hainanese, Hockchias, Foochows, Henghuas, Shanghainese, etc.
- Malay or Indonesian – includes Javanese, Boyanese, Bugis, etc.
- Indian, Pakistani, Bangladeshi or Sri Lankan – includes Tamils, Malayalis, Punjabis, Bengalis, Singhalese, etc.
- Other

With which gender do you most identify?
- Male
- Female

# References

[1] Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly 36*(1), 157-178.

[2] Choi, J. K., & Ji, Y. G. (2015). Investigating the importance of trust on adopting an autonomous vehicle. *International Journal of Human-Computer Interaction 31*(10), 692-702. http://doi.org/10.1080/10447318.2015.1070549

[3] Nees, M. A. (2016, September). Acceptance of self-driving cars: an examination of idealized versus realistic portrayals with a self-driving car acceptance scale. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, No. 1, pp. 1449-1453). Los Angeles, CA: SAGE Publications.

[4] Lee, C., Ward, C., Raue, M., D'Ambrosio, L., & Coughlin, J. F. (2017, July). Age Differences in Acceptance of Self-driving Cars: A Survey of Perceptions and Attitudes. In *International Conference on Human Aspects of IT for the Aged Population* (pp. 3-13). Springer, Cham.

[5] Madigan, R., Louw, T., Dziennus, M., Graindorge, T., Ortega, E., Graindorge, M., & Merat, N. (2016). Acceptance of Automated Road Transport Systems (ARTS): an adaptation of the UTAUT model. *Transportation Research Procedia 14*, 2217-2226. https://doi.org/10.1016/j.trpro.2016.05.237

[6] Madigan, R., Louw, T., Wilbrink, M., Schieben, A., & Merat, N. (2017). What influences the decision to use automated public transport? Using UTAUT to understand public acceptance of automated road transport systems. *Transportation Research Part F: Traffic Psychology and Behaviour 50*, 55-64. https://doi.org/10.1016/j.trf.2017.07.007

[7] Haboucha, C. J., Ishaq, R., & Shiftan, Y. (2017). User preferences regarding autonomous vehicles. *Transportation Research Part C: Emerging Technologies 78*, 37-49. http://doi.org/10.1016/j.trc.2017.01.010

[8] Roehrich, G., 2004. Consumer innovativeness: concepts and measurements. *Journal of Business Research* 57 (6), 671–677. http://dx.doi.org/10.1016/S0148-2963(02)00311-9

[9] Ewing, G. & Sarigollu, E. (2000). Assessing consumer preferences for clean-fuel vehicles: a discrete choice experiment. *Journal of Public Policy and Marketing* 19(1), 106-118. http://doi.org/10.1509/jppm.19.1.106.16946

[10] Jensen, A.F., Cherchi, E., de Dios Ortúzar, J. (2014). A long panel survey to elicit variation in preferences and attitudes in the choice of electric vehicles. *Transportation* 41, 973-993. https://doi.org/10.1007/s11116-014-9517-6

[11] White, L.V., & Sintov, N. D. (2017). You are what you drive: Environmentalist and social innovator symbolism drives electric vehicle adoption intentions. *Transportation Research Part A: Policy and Practice* 99, 94-113. http://doi.org/10.1016/j.tra.2017.03.008

[12] Moody, J., Bailey, N., & Zhao, J. Public perceptions of autonomous vehicle safety: An international comparison. *Safety Science* [in press]

[13] Moody, J. & Zhao, J. (2019). Car pride and its bidirectional relation with car ownership: Case studies in New York City and Houston. *Transportation Research Part A: Policy and Practice* [in press]