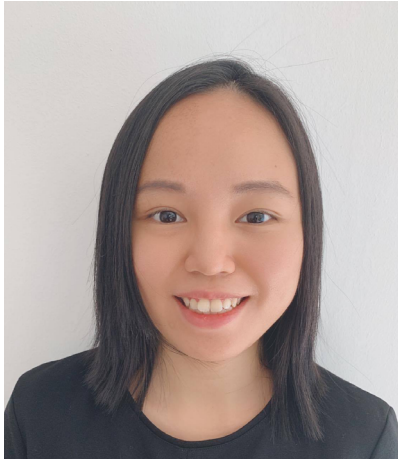


How Can User Needs be Met as we Introduce Automated Vehicle Services?



Pei Nen Esther Chee is a PhD researcher and project collaborator affiliated with ITRL.

In this interview, Esther shares some of her thoughts on her most recent publication:

Which factors affect willingness-to-pay for automated vehicle services? Evidence from public road deployment in Stockholm, Sweden

In order to make ITRL's research more accessible to both industry and the public, we asked a range of questions designed to give an overview of Esther's paper and inspire you to learn more.

What is the article about?

The article is about developing a model for how people's willingness to pay for three types of autonomous vehicle services are affected by their perceptions of the service quality.

More specifically, the services are: On demand personalized autonomous vehicles (like waymo), ride sharing with the same vehicles, and finally first-last mile bus services that mimic the public bus service by providing a feeder to connect people to public transport hubs, like train or bus stations.

Unlike previous willingness to pay models, we link people's perception of the service (expected level of service quality whilst using automated vehicle services) to willingness to pay, however we also include individual characteristics, such as social demography, experience with, and knowledge about, autonomous vehicles, as well as a few other characteristics. This enables us to find out what the minimum requirements are for different groups of people related to the different services.

What are the possible implications of the research?

The research is useful for the operators keen on introducing new AV services. It can be applied to understand the expectation potential users have of new AV services and it also helps to identify which users are willing to pay for a new service. This means that these services can be designed according to the users' needs. So, it identifies what the needs of the targeted user groups are.

How would you say that the research could make a positive impact on society?

Good question. This model will hopefully encourage companies to design an AV service that takes user needs into consideration. With such a model we are able to understand the users more and then you can decide to adopt a user centric design to introduce an AV service. It is usually about how the service providers perceive the service quality but instead, with this model, we can understand what the expectations of users are first, and then design the services accordingly.



Picture featuring EZ10, the small automated vehicle used in the trial operation in Kista, Stockholm [photo taken on 4th May 2018 by SARA1 research team]

Interview with an ITRL Researcher

What should industry be paying attention to in regards to the article?

First of all, from this article we can say that people's perceptions in terms of expected levels of service quality associated with specific types of AV services is important, because it is found to be influential towards their willingness to pay for services. I would say that this model provides a platform for industry to explore which groups the potential users or first adopters will be and subsequently, that perception will evolve from levels of expectation to levels of satisfaction when the services start running. So therefore, at later stages they can also adopt the model to check whether or not the service meets the level expected. But also, what people will pay is linked to what people expect. For example, for a self-driving car service people expect it to be safe, give good ride comfort, and offer a competitive price compared to metro or train for the same distance.

What further research could this lead to?

We found in this research that the people who are very familiar with AV technology are more sceptical towards AV services and perceive it to be unsafe when compared to others users. One interesting further avenue of research would be asking why more knowledge about AVs seems to lead to less WTP for AV services. If people understand more, perhaps they should trust the services more, but it doesn't happen that way.

What is the take home message of the paper?

Understanding users' perceptions towards the associated service quality of AV services to be introduced is very important because the expectation and subsequent level of satisfaction are the things that affect a potential user's willingness to pay for the service. Therefore, to forecast future demand, you should also take into account WTP, not just willingness to use. This information is important to the design of a new AV service

You can read Esther's full research article [here](#), or feel free to [contact Esther](#) for more information.

