

How do people experience a driverless bus?



Jia Guo is a former postdoc researcher at ITRL, with a background in Urban Planning.

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

Influence of Individual Perception on the Decision to Adopt Automated Bus Services

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 Jia's paper and inspire you to learn more.

“... it is crucial to investigate the public's perception of this real, fully operational, automated bus service.”

Could you explain what you investigated in this research?

The research is about understanding how people experience automated public transport systems. Now that we are in a phase where automated buses become an integrated part of the public transport system, it is crucial to investigate the public's perception of this real, fully operational service. Previous studies have mainly focused on hypothetical scenarios, but this research is different because we surveyed passengers that actually travelled on the automated bus line in Barkaby in real-life. And we also included people that did not (yet) travel with the automated bus or never even heard of it.

With an online survey we assessed how the perception of the driving speed and the experienced level of safety, convenience and reliability influenced the willingness of people to adopt the automated transport service. We also considered socio-demographic factors, such as age, gender and income, to see if those factors have any influence.

Could you summarize the main results of your research?

Safety is one of the primary needs of humans, so it was expected that the perceived level of safety is a very important factor in deciding whether or not to take the autonomous bus. But also important for people is the actual speed of the bus: people do not want to spend much more time travelling than they are currently used to. Currently the buses go only 10 km/h, but fortunately automated buses that drive faster are already being designed! Reliability and convenience, e.g. the punctuality of the bus service, are also decisive factors for people to use the automated bus line.



An automated bus driving around in Barkabystaden. [source: www.drivesweden.net]

Interview with an ITRL Researcher

The social-demographic analysis yielded that age is significant to determine how likely people are to adopt the automatic bus line. Youngsters are highly enthusiastic about experiencing and interacting with new technology, while elderly people are a bit more cautious in this. Gender and income are not of any significant effect, nor is the amount of ‘regular’ public transport use.

What could further research in line with your findings be about?

I was very surprised to learn that only a mere 25% of the respondents had ridden one of the automated buses. 99.2% of the respondents had heard the technique existed in Barkabystaden though, but apparently they were not highly attracted to use it. It would be very interesting to know why this is the case.

Furthermore I would like to point out that the respondents took three surveys, with several weeks in between. For this paper we only analysed the data from the first survey round, and we are still in the process of analysing the data of the second and third round. We aim to compare the perception and level of expectation of the participants over time. This research paper is thus only the beginning. I am very curious to investigate how the perception of the respondents varies over time and whether this improved perception will help in attracting more people using the transport mode!

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

Autonomous vehicles in general enhance public transport: reduce (labour) cost, improving safety and capacity, avoid traffic congestion and make it more accessible to young, elderly and disabled people. But

“Youngsters are highly enthusiastic about experiencing and interacting with new technology.”

in order for it to do so, we need to realize that not only the technique should be ready, also the public that will be interacting with it on a daily basis should be ready. I hope that engineers, policy-makers and all others involved take away from this research that it is very important to understand the needs and desires of potential users and adjust the automated buses – and other driverless transport systems – to their requirements.

We can also learn from this study that we need to improve the image of driverless buses. It is a really promising technology and as many wonder: very safe! I think that for example bus companies (but also other actors) could play a major role by highlighting the advantages of automated transport even more, such that people will be more open to adopt it.

You can read Jia’s full research article [here](#), or feel free to [contact Jia](#) for any questions or comments!