

INTISARI

Terdapat peningkatan skeptisme publik terhadap AV karena dipandang tidak mampu meningkatkan keselamatan berkendara. Malfungsi dari sistem otonom dapat mengancam keselamatan yang menjadi faktor penting penerimaan AV. Informasi mengenai kesalahan diketahui dapat meminimalkan dampak buruk pasca malfungsi dan meningkatkan keselamatan berkendara. Tujuan penelitian ini yaitu mengidentifikasi pengaruh level AV dan pengaruh jenis pesan *error* AV terhadap elemen *human factors* yang meliputi *situation awareness*, *mental workload*, *trust*, *willingness to use*, *willingness to buy*, dan *willingness to pay*.

Eksperimen ini melibatkan 17 responden (7 pria, 10 wanita) yang diminta untuk melakukan simulasi mengemudi menggunakan *driving simulator* sebanyak 3 sesi yang merepresentasikan level otomasi yang diamati, yaitu *manual driving*, *conditional autonomous driving*, dan *fully autonomous driving*. Mode *autonomous driving* dimodelkan oleh seorang *driving wizard*. Selama mengemudi, responden akan menemukan notifikasi pesan *error* dan *probes* yang membutuhkan respons dari pengemudi berdasarkan metode *Situation Present Assessment Method* (SPAM). Setiap sesi mengemudi berakhir, responden diberikan kuesioner *Trust in Automation*, dan kuesioner *willingness to use*, *willingness to buy*, dan *willingness to pay*.

Hasil penelitian memaparkan bahwa level otomasi tidak berpengaruh secara signifikan terhadap *situation awareness*, *mental workload*, taraf kepercayaan atau *trust*, dan *willingness to buy*. Namun level otomasi berpengaruh signifikan terhadap *willingness to use*, penambahan harga yang bersedia dibayarkan, dan harga yang diinginkan. Serta tidak terdapat pengaruh yang signifikan antara jenis pesan *error* terhadap *situational awareness* dan *mental workload*.

Kata kunci: *autonomous vehicle, human factor, error information, malfunction*

ABSTRACT

There is increasing public skepticism towards AVs because they are seen as unable to improve driving safety. Malfunctions of autonomous systems can threaten safety, which is an important factor in AV acceptance. Information about faults is known to minimize the downside of malfunction and improve driving safety. This research aims to identify the influence of AV level and the influence of the type of AV error message on human factors elements which include situation awareness, mental workload, trust, willingness to use, willingness to buy, and willingness to pay.

This experiment involved 17 respondents (7 men, 10 women) who were asked to carry out driving simulations using a driving simulator for 3 sessions which represented the level of automation observed, namely manual driving, conditional autonomous driving, and fully autonomous driving. The autonomous driving mode is modeled by a driving wizard. While driving, respondents will encounter error message notifications and probes that require a response from the driver based on the Situation Present Assessment Method (SPAM). At the end of each driving session, respondents were given a Trust in Automation questionnaire, and a willingness to use, willingness to buy, and willingness to pay questionnaire.

The research results show that the level of automation does not have a significant effect on situation awareness, mental workload, trust level, and willingness to buy. However, the level of automation significantly affects willingness to use, additional price willing to be paid, and desired price. There is no significant influence between the type of error message on situational awareness and mental workload.

Keywords: *autonomous vehicle, human factor, error information, malfunction*