

## ABSTRAK

Teknologi *automated vehicle* berpotensi membawa berbagai macam manfaat dalam mobilitas, seperti menurunkan resiko kecelakaan akibat *human error*, meningkatkan mobilitas kelompok tertentu (pengemudi lansia, orang berkebutuhan khusus, pengemudi dibawah umur), mengurangi tingkat kemacetan, dan meningkatkan penghematan konsumsi bahan bakar. Teknologi ini diprediksi akan siap diluncurkan pada tahun 2022. Dalam tahap pengembangan ini, banyak pihak yang mempertanyakan jenis gaya mengemudi yang akan diadopsi oleh *automated vehicle*. Hal ini dikarenakan perbedaan gaya mengemudi dapat mempengaruhi preferensi pengguna terhadap teknologi ini, yang berdampak pada tingkat penerimaan teknologi. Berdasarkan latar belakang tersebut, penelitian ini menganalisis pengaruh kesesuaian gaya mengemudi *automated vehicle* dan pengemudi terhadap tingkat penerimaan teknologi.

Subjek penelitian ini adalah 20 orang mahasiswa (10 laki-laki dan 10 perempuan) usia  $20,8 \pm 1,05$  tahun. Seluruh responden dalam penelitian ini telah memiliki SIM A dan belum pernah menggunakan *automated vehicle* sebelumnya. Terdapat dua kelompok responden berdasarkan gaya mengemudinya, yaitu kelompok pengemudi agresif dan kelompok pengemudi defensif. Penelitian ini menggunakan tingkat otomasi SAE level 4 yang disimulasikan menggunakan metode *Wizard of Oz* dengan 2 orang *driving wizard* (2 laki-laki) usia  $20,5 \pm 0,70$  tahun. Dalam eksperimen, responden akan mengujicobakan *automated vehicle* pada kondisi *match* dan *mismatch*. Tugas responden selama eksperimen adalah mengemudi mengikuti rute GPS. Penggunaan mode otonom selama mengemudi bersifat sukarela (*voluntary*). Pengukuran dalam penelitian ini meliputi *perceived ease of use*, *perceived usefulness*, *perceived safety*, *trust*, *personal innovativeness*, *driving enjoyment*, *behavioral intention*, dan *actual usage*. Dalam melakukan analisis untuk mengukur hubungan antar variabel, digunakan teknik statistik *Structural Equation Modelling Partial Least Squares* (SEM PLS).

Hasil penelitian menunjukkan pengemudi defensif dan agresif sama-sama memiliki signifikansi niat penggunaan dan penggunaan aktual yang lebih tinggi saat mengujicobakan kendaraan otonom dengan gaya mengemudi defensif. Selain itu, model PLS pada kedua kondisi juga menunjukkan pengaruh signifikan positif *personal innovativeness* terhadap *behavioral intention* dan *trust* terhadap *perceived usefulness*. Signifikansi positif *perceived ease of use* terhadap *trust* ditemukan pada model PLS kondisi *mismatch*. Penelitian ini juga berhasil menemukan signifikansi positif pengaruh niat penggunaan terhadap penggunaan aktual teknologi.

**Kata kunci:** *Automated Vehicle, Technology Acceptance Model, Driving Style, Wizard of Oz, Partial Least Square*

## ABSTRACT

The automated vehicle technology has the potential to bring various benefits in mobility, such as reducing the risk of accidents due to human error, increasing the mobility of certain groups (elderly drivers, disabled drivers, underage drivers), reducing congestion and increasing fuel consumption savings. This technology is predicted to be ready for launch in 2022. During this development stage, many people questioned the type of driving style about being adopted by the automated vehicle. This is because differences in driving style can affect user preferences, which has an impact on the level of technology acceptance. Based on this background, this study analyzed the effect of driving style conformity of automated vehicle and driver on the level of technology acceptance.

Respondents in this study were 20 students (10 males and 10 females) aged  $20,8 \pm 1,05$  years. All respondents in this study had a valid driving license and had never interacted with the automated vehicle previously. There are two groups of respondents based on their driving styles, aggressive driver group and defensive driver group. This study simulated SAE level 4 automation level by using the Wizard of Oz method with 2 driving wizards (2 men) aged  $20,5 \pm 0,70$  years. In the experiment, the respondents will test the automated vehicle in match and mismatch conditions. The task of the respondent during the experiment was to drive accordingly to the routes which were generated by GPS. The use of automated mode during driving was voluntary. The measurements in this study included perceived ease of use, perceived usefulness, perceived safety, trust, personal innovativeness, driving enjoyment, behavioral intention, and actual usage. The analysis of measuring the relationship between variables use a statistical technique called Structural Equation Modelling Partial Least Squares (PLS-SEM).

The results showed that both defensive and aggressive drivers had a higher significance of actual usage and behavioral intention when simulated the automated vehicle with defensive driving style. In addition, the PLS model in both conditions also showed a significant positive effect of personal innovativeness on behavioral intention and trust on perceived usefulness. Positive significance of perceived ease of use on trust was found in PLS model for mismatch condition. This study also found a significantly positive effect of behavioral intention on the actual use of technology.

**Keywords:** Automated Vehicle, Technology Acceptance Model, Driving Style, Wizard of Oz, Partial Least Square