

The German Pedelec Naturalistic Cycling Study – Overview of Results

T. Gehlert¹, K. Schleinitz², T. Petzoldt², L. Franke-Bartholdt² & J. Krems²

¹ Vehicle Safety

German Insurers Accident Research (UDV)
Wilhelmstr. 43 /43 G, 10117 Berlin, Germany
e-mail: t.gehlert@gdv.de

² Cognitive & Engineering Psychology

Chemnitz University of Technology
Wilhelm-Raabe-Str. 43, 09120 Chemnitz, Germany
e-mail: [katja.schleinitz; tiber.petzoldt;
luise.bartholdt; josef.krems]@psychologie.tu-
chemnitz.de

ABSTRACT

In recent years, the number of pedelecs and e-bikes increases in Germany and elsewhere [1]. Given their higher maximum speed it raises concerns about actual speed and crash risks but also questions about user characteristics and travel behaviour. Therefore, a large scale pedelec naturalistic cycling study was set up to investigate travel and traffic behaviour [2]. Three groups using their own bicycles were compared: i) pedelecs, ii) S-pedelec / E-bike and iii) conventional bicycle. Ninety participants took part. The sample includes more pedelec than e-bike users, and fewer young pedelec cyclists. This reflects the current user characteristics in Germany. The bicycles were equipped with a data acquisition system over a period of four weeks. Questionnaires and a time use travel diary assessed current travel and traffic behaviour and changes thereof, motives and experiences with pedelecs / E-Bikes. In summary the results show no distinctive pedelec/e-bikes travel or traffic behaviour patterns that are problematic for road safety. Even though pedelec cyclists cycle faster than conventional bicyclists the difference is small [3]. Also pedelecs, E-bikes and conventional bicycles are similarly involved in critical traffic situations. It seems that at present the motor assistance of pedelecs is mainly used to reduce effort and to increase comfort. S-pedelecs / E-bike users, however, are considerably faster [3]. And even though this does not result in more critical situations, in case of an accident they may be at risk of more severe injuries due their higher speed.

Keywords: road safety, e-bikes, traffic behaviour, travel behaviour, naturalistic cycling study.

REFERENCES

- [1] Zweirad-Industrie-Verband, *Jahresbericht, (2014)*, pp. 43.
- [2] T. Gehlert, M. Kühn, K. Schleinitz, T. Petzoldt, S. Schwanitz, R. Gerike, „The German Pedelec Naturalistic Cycling Study – Study Design and First Experiences”, *Proceedings of the International Cycling Safety Conference ICSC (2012)*, 7-8 November, Helmond, The Netherlands.
- [3] K. Schleinitz, T. Petzoldt, L. Franke-Bartholdt, J. Krems & T. Gehlert, „The German Pedelec Naturalistic Cycling Study – Comparing cycling speed”, *Proceedings of the International Cycling Safety Conference ICSC (2014)*, 18-19 November 2014, Göteborg, Sweden.