

Investigation of cyclists' safety perception of infrastructure: A German interview study in the field

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Besides well-known advantages on individual health, cycling is the most cost-effective, climate-friendly and fast means of transport. Nevertheless, the proportion of cyclists is still very low in many cities, also in Germany. Recently published studies argue that a rather low safety perception is one major reason for not using the bicycle as a means of transportation. While the influence of various personal factors (e.g. gender, age, experience) on the safety perception has been investigated frequently, research on the impact of infrastructural aspects is rare for German cyclists and cross-country comparisons seem to be limited. Furthermore, the majority of the studies was conducted using questionnaires or online-surveys methods, which might be affected by memory biases. This study aims at investigating cyclist's safety perception towards diverse (cycling) infrastructure in a natural context. Therefore, we conducted a field study containing semi-standardized interviews at 5 spots in the German city of Chemnitz. From 1202 passing cyclists, 175 participated in the interview (36.00 % female, 63.40 % male, 0.60 % divers). Participants were on average 38.73 years ($SD = 15.83$). The majority of the interviewees cycled at least weekly in summer (97.10 %) as well as in winter (81.70 %). Cyclists were asked to rate their safety perception 1) in the recently passed 2) as well as in an infrastructural comparable past situation and 3) their overall safety perception as a cyclist in the city (1="very safe" to 5= "very unsafe") immediately after they had passed the relevant situations. In addition, we asked if the situation was perceived as safety critical (SCE). The interviews were conducted from 8 a.m. to 6 p.m. on 5 weekdays. According to the results the interviewees felt neutral or slightly insecure as cyclists in their city ($M = 3.22$). Considering the different scenarios, cycling at the advanced stop line (with box) was rated the safest ($M = 2.12$), followed by the cycle lane with a public transport connection ($M = 2.25$), a signalized intersection with separate bicycle lane ($M = 2.50$), the roundabout ($M = 2.71$) and a bike lane merging into the centre of a street ($M = 3.00$). Of 175 interviewed cyclists 18.5 % stated that they experienced the situation as safety-critical (SCE). Cyclist that experienced an SCE rated the current as well as a comparable past situation significantly more unsafe than interviewees without SCE. Further, the analysis revealed that past comparable situations were evaluated safer than the currently experienced. Further aspects (e.g. gender, age) will be discussed in the final paper for ICSC2020. Eventually, we can summarize that the infrastructure, which supports cyclists (e.g. bike lanes), is rated rather positively. Nevertheless, we find that especially cycling in mixed traffic significantly causes negative feelings, which is in line with other studies. Cyclists tend to review past situations more negatively. A possible explanation could be the before mentioned memory biases or that the particular moment was not representative. Hence, at least when investigating the influence of the infrastructure on safety perception, studies in natural contexts can provide significant additional insight.

Website: <https://nationaler-radverkehrsplan.de/de/praxis/untersuchung-der-dunkelziffer>

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