

Cyclists' Perception of Factors influencing Route Choice – a Repertory Grid Approach

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The cyclist's route choice is an important issue for the management of future urban mixed traffic as well as for the planning and improvement of cycling infrastructure and, hence, the promotion of cycling. Previous studies already found cyclists to prefer safe and comfortable infrastructure, but these terms such as "safe" or "comfortable" belong to broad concepts which often differ in their definitions or refer to different sub-aspects. Additionally, the evaluation of cycling infrastructure was often examined in questionnaires with preset concepts and criteria. This raises the questions, how cyclists describe those route criteria like safety and comfort, and whether these terms actually suit the cyclists' own perception and evaluation of cycling infrastructure. This study aims to examine cyclists' individual evaluation criteria regarding 15 route attributes which have been found to be important in route choice. We conducted a Repertory Grid interview which allows in an inductive and qualitative way to examine the personal constructs that individuals use to structure and describe their world. 23 participants elicited their individual constructs about the 15 route attributes, rated each attribute on each construct, and rated the relevance for route choice of every construct. For analysis, the constructs were categorized in terms of content and afterwards grouped by a cluster analysis in terms of the mean element ratings. The analysis revealed six evaluation dimensions, namely Interaction, Ease of Use, Pedestrians, Mental Comfort, Physical Comfort, and Surrounding. The cluster on Mental Comfort contained the most constructs including constructs about safety issues and stress-free cycling. The term "comfort", in contrast, was mainly used by the participants to describe ergonomic and physical comfort. The constructs in both of the comfort clusters were rated the most relevant for route choice. Results also show the evaluation of route attributes on each cluster, including different cycling facilities or road levels. This study reveals how cyclists evaluate their infrastructure when no criteria are given in advance. Those inductive criteria are similar to the criteria of safety and comfort used in the literature, but this study also provides a more detailed understanding of and connection between those criteria. Furthermore, findings expand the existing research by qualitative data and contributes to a better understanding of cyclists' route choice. This can be used to analyze current cycling infrastructure and to build attractive and preferable future cycling infrastructure.