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Data Article

Data and material of the Safe-Range-Inventory: An assistance tool helping to improve the charging infrastructure for electric vehicles

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ABSTRACT

The Safe-Range-Inventory (SRI) was constructed in order to help public authorities to improve the charging infrastructures for electric vehicles [1; 10.1016/j.trf.2017.04.011]. Specifically, the impact of fast (vs slow) charging stations on people's range anxiety was examined. Ninety-seven electric vehicle users from Germany (81 male; $M_{age}=46.3$ years, $SD=12.1$) were recruited to participate in the experimental design. Statistical analyses were conducted using ANOVA for repeated measures to test for interaction effects of available charging stations and remaining range with the dependent variable *range anxiety*. The full data set is publicly available via https://osf.io/bveyw/ (Carbon and Gebauer, 2017) [2].

Specifications Table

Subject area	*Psychology*
More specific subject area	*Traffic Psychology, electromobility usage*
Type of data	*Table, graph, figure* *Survey*

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How data was acquired	
Data format	*Raw, analyzed*
Experimental factors	*Multivariate analyses*
Experimental features	*Very brief experimental description*
Data source location	*Germany*
Data accessibility	*Partial data are within the article; the full data set is publicly available via Open Science Framework* (https://osf.io/bveyw/)

Value of the data

- The data is important to evaluate the variance of typical Safe-Range-Inventory assessments
- Important to estimate the impact of fast vs. slow charging stations on electric vehicle user's range anxiety
- The data could be used for public authorities to assist in the planning of electric charging infrastructures
- The data is important to conduct recalculations with own analysis tools and methods
- The data could be useful as a starting point for further research on electric users' range anxiety

1. Data

This paper contains data of the Safe-Range-Inventory (SRI) based on a recently published paper [1; 10.1016/j.trf.2017.04.011]. It examines how far different charging infrastructure might have an

Table 1
Describing the introduction for each scenario.

Standardized introductory part that was the same for all scenarios	Imagine you are in a city and you have an appointment that you want to arrive punctually for. You have to take the route displayed below, which is approximately 60 km long. The traffic is at a daily average level and you need not expect any roadworks or traffic jams. You are driving with your own electric vehicle without a range extender.
Condition a) 0 fast and 0 slow charging stations (0F[fast]-0S[slow])	There are no charging stations available along your route.
Condition b) 0 fast and 3 slow charging stations (0F-3S)	There are 3 slow, conventional charging stations available on your route. Charging at a slow, conventional charging station (with AC technology) takes 6–8 h to recharge an electric vehicle's nearly empty battery up to 80%.
Condition c) 1 fast and 2 slow charging stations (1F-2S)	There are 2 slow, conventional and 1 fast charging stations available on your route. Charging at a slow, conventional charging station (with AC technology) takes 6–8 h to recharge an electric vehicle's nearly empty battery up to 80%. Charging at a fast-charging station (with DC technology) takes 20 min to recharge an electric vehicle's nearly empty battery up to 80%
Condition d) 2 fast and 1 slow charging stations (2F-1S)	There is 1 slow, conventional and 2 fast charging stations available on your route. Charging at a slow, conventional charging station (with AC technology) takes 6–8 h to recharge an electric vehicle's nearly empty battery up to 80%. Charging at a fast-charging station (with DC technology) takes 20 min to recharge an electric vehicle's nearly empty battery up to 80%
Condition d) 3 fast and 0 slow charging stations (3F-0S)	There are 3 fast charging stations available on your route. Charging at a fast-charging station (with DC technology) takes 20 min to recharge an electric vehicle's nearly empty battery up to 80%