Supporting user interaction with the range of electric buses in local public transport

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Range-Interaction in Electric Buses

- Electrification of local public bus transport = key measure to reduce transport emissions
- A prominent phenomenon described in the context of electric cars is range-anxiety
  - What is – from a psychological perspective – range anxiety?

Factors for Range Utilization

Based on the thematic analysis, a first structural framework of range-management was developed:

- Situation
- External Factors
- Range Assessment
  - E-Bus state information
  - Appraisal
- Optimization barriers
- Range Optimization
  - E-Bus configuration
  - Driving behavior
- Consequences

Method

Interview Questions:
- “…difficulties in estimating the range…”
- “…communication with the dispatchers…”
- “…which information do you wish to have…”
- “…strategies/barriers of extending the range?”

Questionnaire:
- Subjective Range Competence Scale
- Comfortable Range
- Eco-Driver Motivation

Facets for Range Utilization

- Subjective Range Competence
- Comfortable Range
- Eco-Driver Motivation

General Range Utilization

Range: 71% for comfortable range, 29% for optimization possibility

Implications + Next Steps

- Do drivers make use of an heuristic appraisal, rather than taking all possible information into account?

Authors

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The “NuR.E” Project

Approach: Field trial with advanced range management interfaces.

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