

Switzerland - Swiss bus fleet inventory from 1940s through 2022 to track technological innovations and their impacts

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Overview

Identification

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10.16909-DATASET-48

Version

VERSION DESCRIPTION
Version 1

PRODUCTION DATE
2024/03/01

NOTES

Overview

ABSTRACT

Data regarding the development of a country's bus fleet over recent decades is seldom available. Nevertheless, possessing such data would inform many potential applications, such as an evaluation of the effects of bus technology advancements, not only on the environment but also on the comfort for passengers, changes in their mobility or changes in working conditions and occupational exposure of bus drivers. This database highlights the technological evolution of the Swiss bus fleet from 1940 to 2022.

The data was collected through a comprehensive mapping study and verified by contacting Swiss bus companies and consulting experts from the Federal Office of Transport, and the Swiss Public Transport Union. Vehicle approval forms were used to improve the quality of technical data. Buses were classified by model and, for each model, 58 technical characteristics such as suspension, engine and soundproofing were documented in a database. A latent class analysis (LCA) was carried out to classify the buses according to their technological characteristics, including gearbox, suspension, and engine.

The technical database includes 891 bus models, classified into four generations and different types based on latent class analysis. The results highlight the predominance of thermal buses in the Swiss bus fleet and the emergence of hybrid and electric buses since 2010. This inventory documents the evolution of bus technology, its impact on the environmental sustainability, and potential implications for driver occupational exposure.

KIND OF DATA
Bus models and their technical features

UNITS OF ANALYSIS
The unit of analysis is the bus model. The number of bus model is 891

KEYWORDS
Bus, Swiss fleet, Technological evolution

Coverage

GEOGRAPHIC COVERAGE
Switzerland

UNIVERSE

Public transport, bus models

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

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Name	Abbreviation	Role
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OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
Office fédéral des transports		Expertise
Union des transports publics (UTP)		Expertise
CHARREAU Thomas	Center for Primary Care and Public Health (Unisanté), Department of occupational and environmental health (DSTE)	Expertise on data management
Swiss bus companies		Data provider
FBW-museum		Data provider

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Center for Primary Care and Public Health (Unisanté), University of Lausanne, Switzerland	Unisanté		Data publisher

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Sampling

Sampling Procedure

We conducted a comprehensive mapping study to collect data on bus models and technical features of buses belonging to the Swiss bus fleet since 1940 until 2022. We scrutinized the websites of the bus companies and associations of transport and bus-lovers and collectors, as well as the museums of transport located in Switzerland. We also audited some bus companies with help of the Swiss Public Transport Union (UTP). Seventy-four Swiss bus companies were then contacted and asked to verify and complete the database. We also asked experts from the UTP, associations, and the federal office of transport to check the completeness of this inventory.

Deviations from Sample Design

Response Rate

Weighting

Questionnaires

Overview

Data Collection

Data Collection Dates

Start	End	Cycle
2021/09/01	2022/12/22	N/A

Data Collection Mode

Mapping study

Data Collection Notes

Questionnaires

Supervision

Data Processing

Data Editing

Other Processing

Data Appraisal

Estimates of Sampling Error

Other forms of Data Appraisal