The effect of the increasing bikes on the roads on fatal accidents

Research Proposal

TIL6022

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Introduction

"The highest rate of deadly accidents among bike riders in 27 years," according to the 'Centraal Bureau voor de Statistiek' (CBS). In 2022, 291 cyclists were involved in fatal accidents, which is 84 more than in previous years. The age category that has seen the most significant change is the 75 and older group (CBS, 2023). Parallel to this, the number of bike kilometers has also been increasing since 2022. According to the 'Kennisinstituut voor Mobiliteitsbeleid' (KiM), the number of bike kilometers is now at the same level as in 2019 (the year before the COVID-19 pandemic).

The increase in bike kilometers can be explained by a 4% rise in regular bike kilometers and a 29% increase in e-bike kilometers from 2019 to 2022. KiM's research indicates that e-bike usage in the 12-24 age group has tripled since 2019, while usage among people over 70 has increased by 18%. The growth in bike kilometers is primarily attributed to the rise in e-bike usage, according to the KiM (Kim; nieuws fietsberaad, 2023),

Nowadays, the fatbike and other e-bikes are very popular and has faced heavy criticism from the government. Policy measures are being developed and are expected soon. Also the mandatory helm requirement for scooters could be a reason for the increase in e-bike usage, this is going to be researched further in this report.

Given the increase in fatal bike accidents and the rise in e-bike usage, we aim to research whether this increase has impacted the number of fatal accidents, especially across different age groups, while also considering what the influence could be of different policy measures.

Research question
This will lead to the following research question:

What is the impact of E-bike use on the number of fatal bike accidents?

Sub questions

- How did E-bike use change over time?
- What is the share of E-bike kilometers on the total bike kilometers?
- How did the number of fatal bike accidents change over time?

Data sources (with explanation, what's in the data set)

- For fatal accidents with bikes, CBS data is used. Data on fatal bicycle accidents is available for the period from 1996 to 2022. An additional feature of this dataset is the inclusion of age information.
    - Link to data set: StatLine - Overledenen; doden door verkeersongeval in Nederland, wijze van deelname (cbs.nl)
- For cycle kilometers two data sets are used because a comprehensive dataset is missing. The first dataset contains data on cycle kilometers for the period 2010 - 2017, the other for the period 2018 - 2023.

    - Link to cycle kilometers 2010 - 2017 : StatLine - Totale reizigerskilometers in Nederland; vervoerwijzen, regio's, 2010-2017 (cbs.nl)
    - Link to cycle kilometers 2018 - 2024: StatLine - Totale vervoersprestatie in Nederland; vervoerwijzen, regio's (cbs.nl)
- Electrical bike use over time per age group, this data is used to address whether there is a correlation between fatal accidents and different types of bicycle use. Also data on motive of e-bike usage is given:
    - https://fietsberaad.nl/getmedia/f4d8871a-0bdf-4ff2-bab7-ee27303e1cb8/KiM_Mobiliteitsbeeld_2023_dvA.pdf.aspx (Chaper 1.5)

All deliverables of the notebook should include a title with authors and author contribution statement, introduction, and necessary references. In addition, below should be included for each deliverable:

- Proposal - including objectives, questions that you are trying to answer, intended data pipeline, datasets.

Connecting to Github
Application: Git Bash.
Prompt 1: cd [path to directory file]
Prompt 2: git connect https://github.com/QuintenTS/TIL6022.git

See https://docs.github.com/en/get-started/using-git/about-git for other prompts.