How to improve controls for parking violations

Correlation of the number of parking violations with the time of day and the weather

AMSE/SAKI

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Structure

- Overview
- Data
- Research question 1: Influence of time of day on parking violations
- Research question 2: Influence of temperature on parking violations
- Discussion

Overview

- Two data sources
  - Weather data of Bonn
  - Record of parking violations in Bonn
- Aim: Empower the City of Bonn to devise a new and more effective approach to prevent parking violations
- Two Approaches
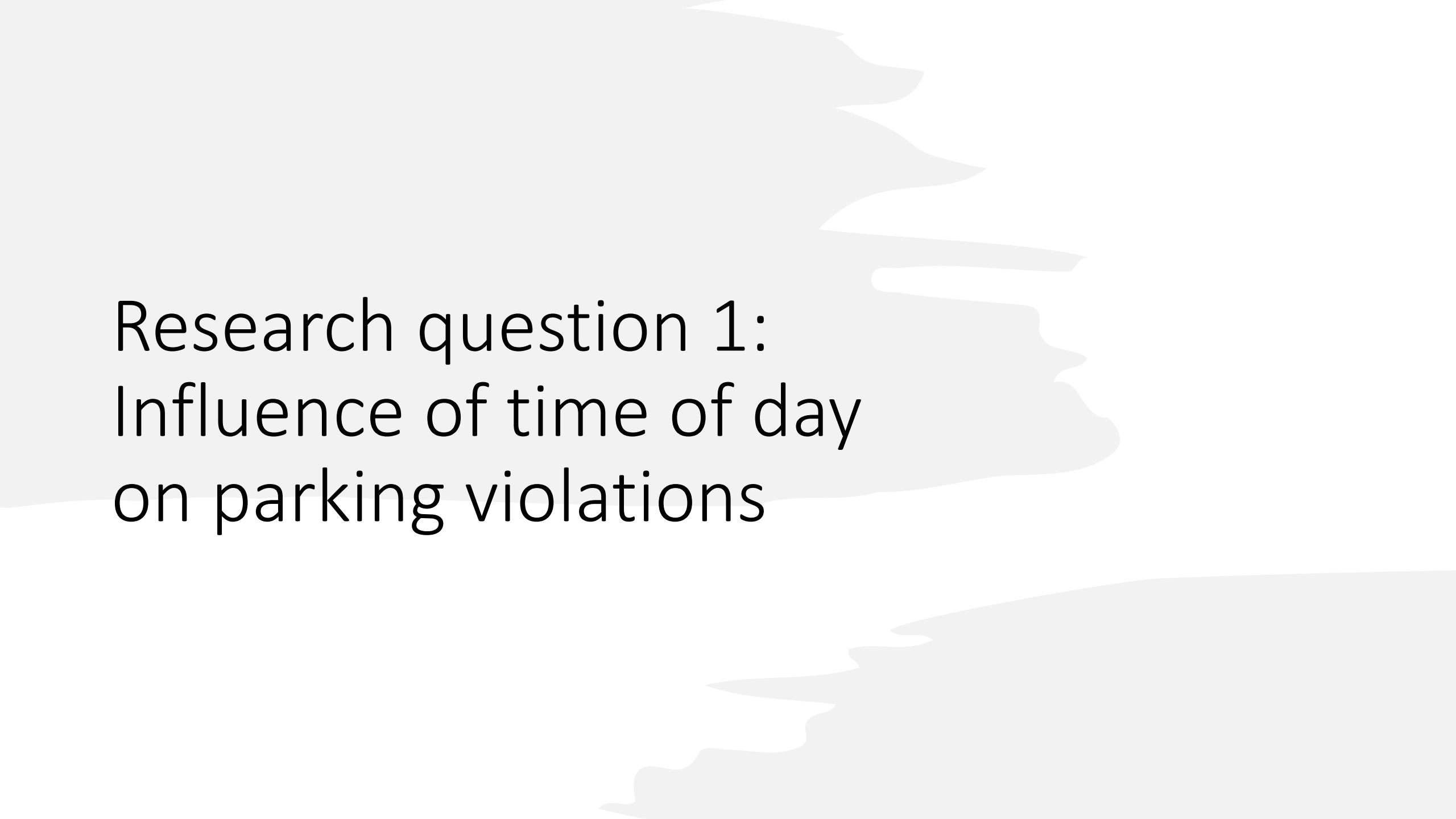 - Influence of time of the day
  - Influence of temperature

Data

- **Parking violations**
- Tattag (Date)
- Tatzeit (Time)
- Tatort (Location)
- Tatbestandbe_tbnr (Code)
- Geldbusse (Fine)
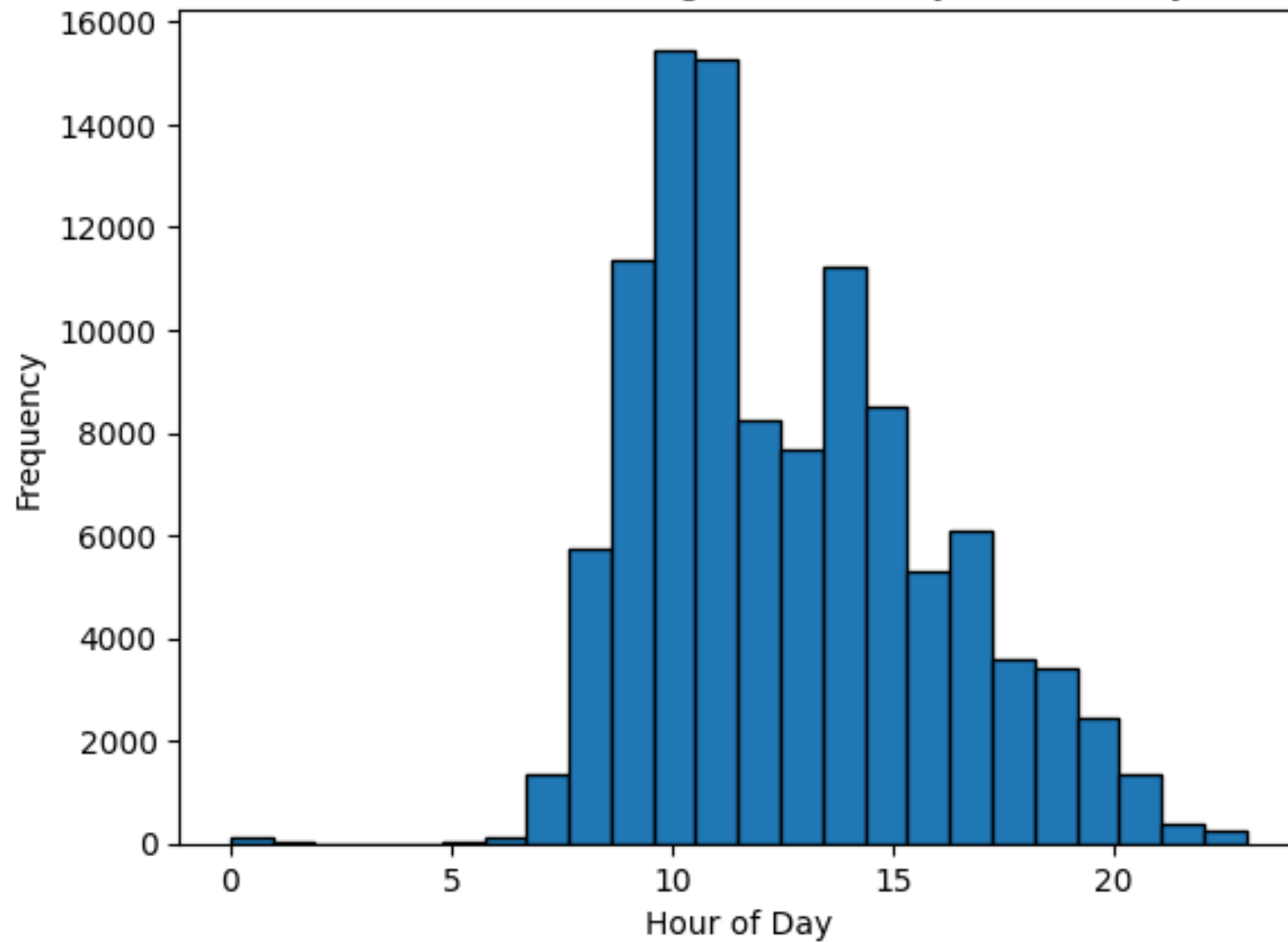- Bezeichnung (Description
- Hour (Hour of the day, 0-23)

- **Weather**
- Date
- Hour (Hour of the day, 0-23)
- Temperature
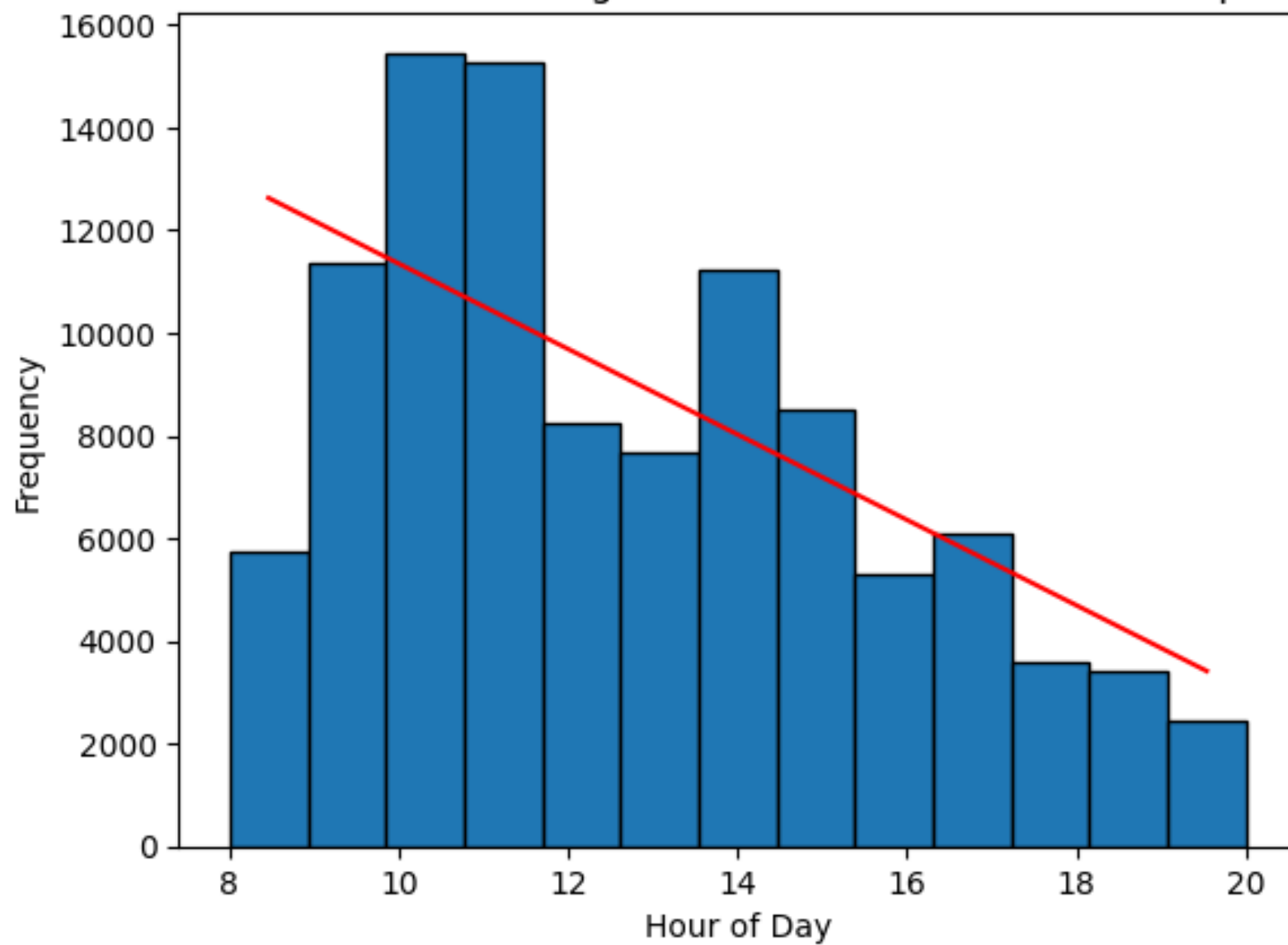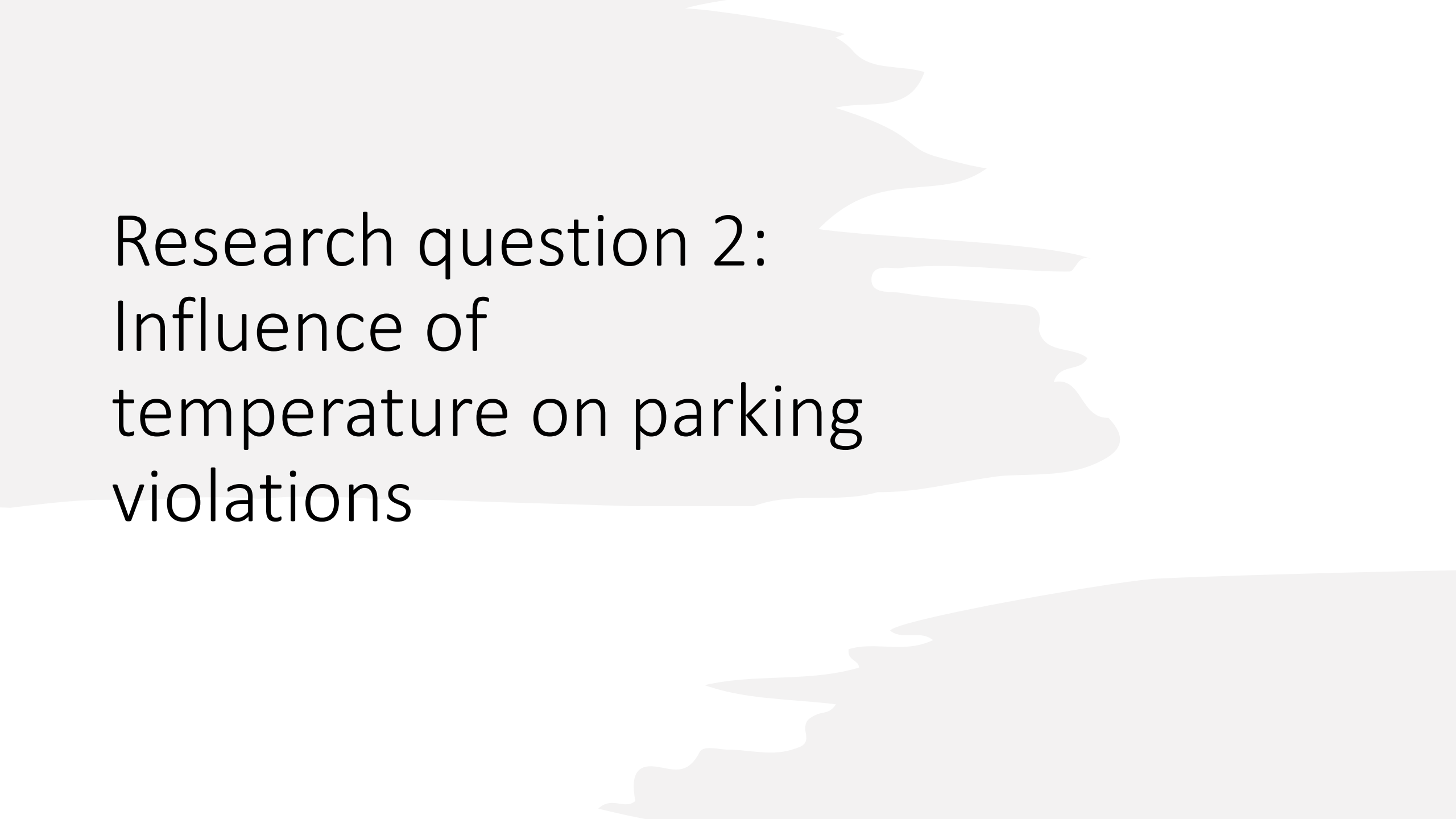- Humidity
- Snow_depth
- Sunshine
- …

Research question 1: Influence of time of day on parking violations

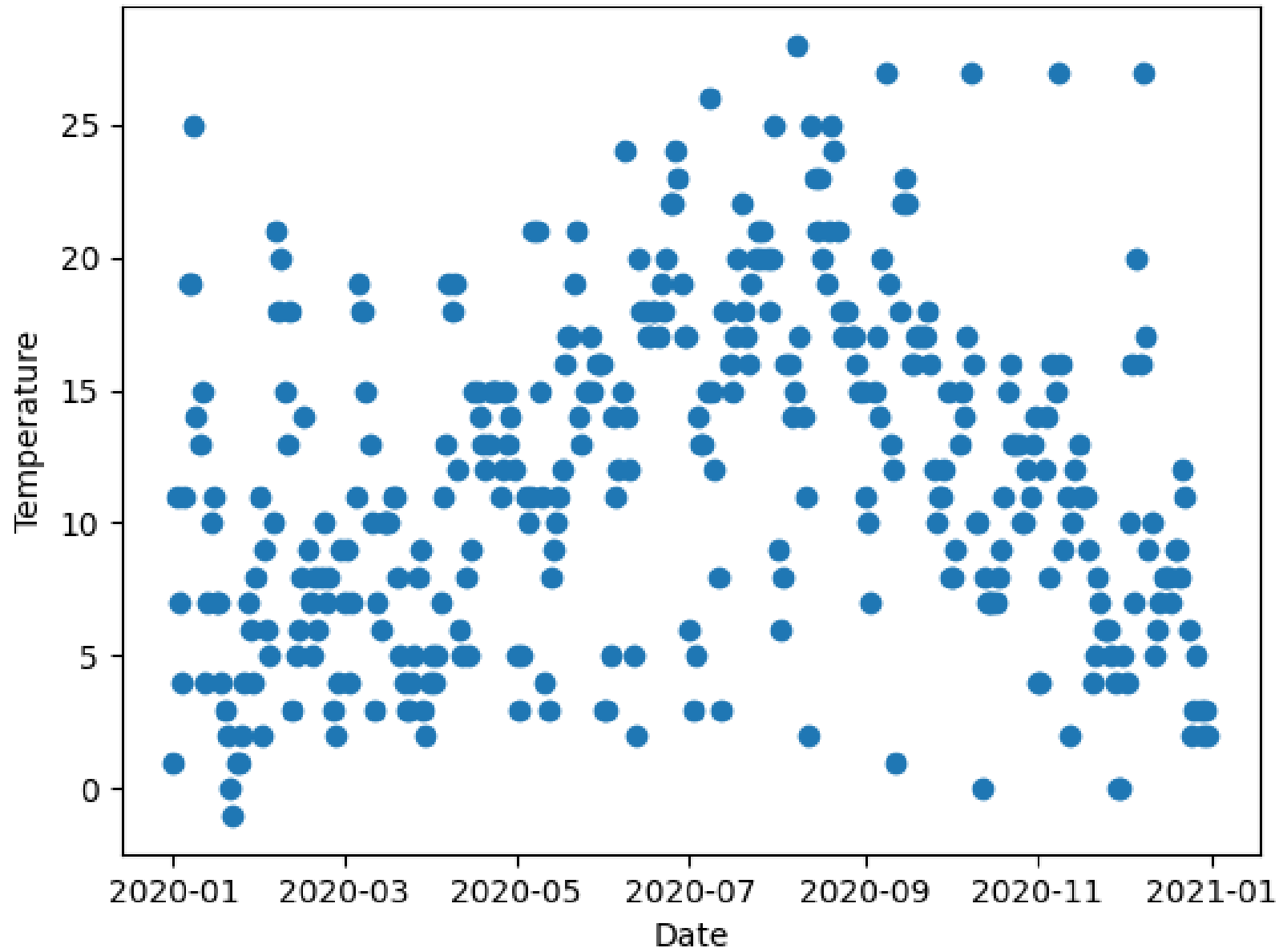Distribution of Parking Violations by Time of Day

Distribution of Parking Violations between 8 am and 8 pm
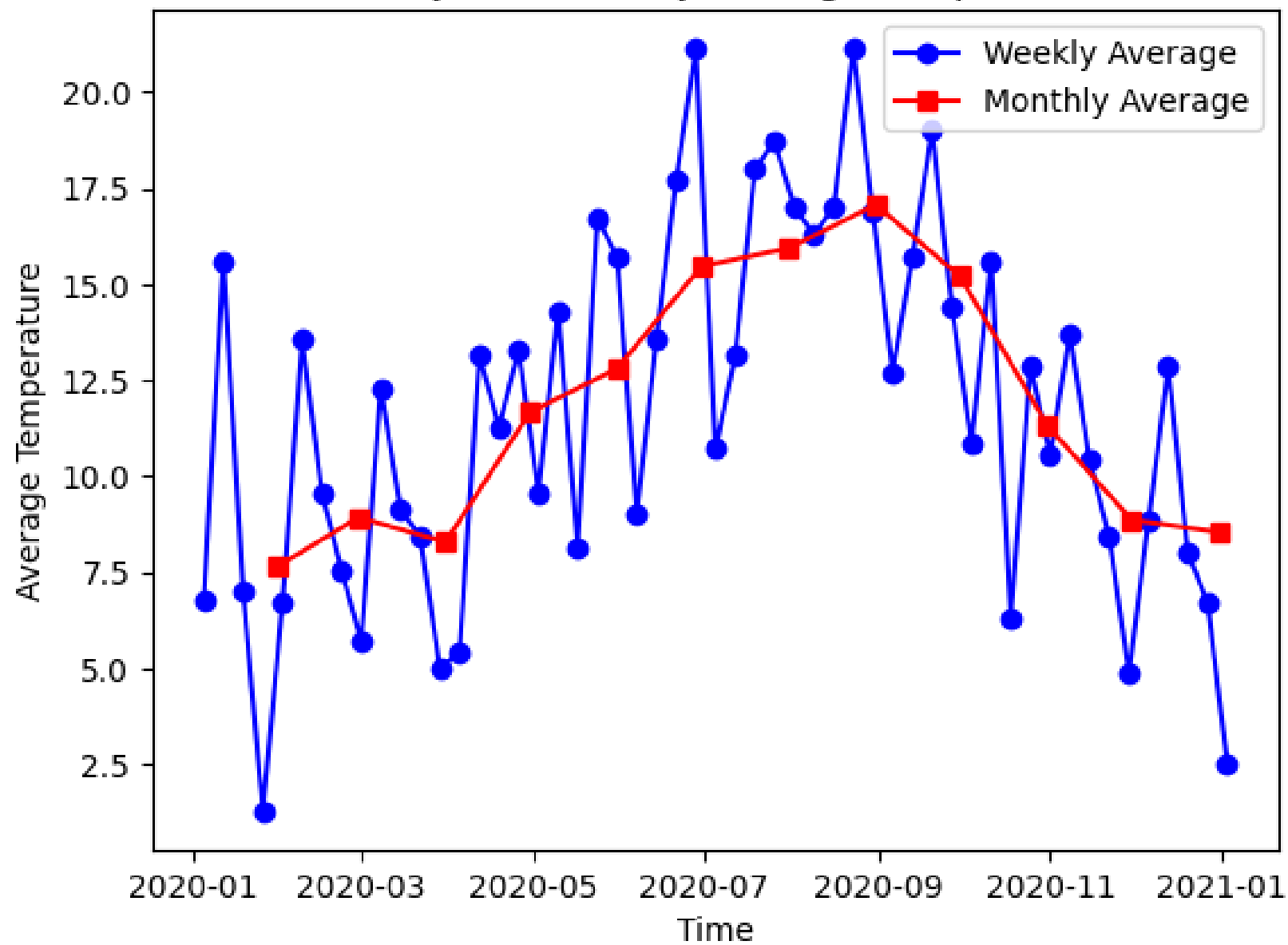
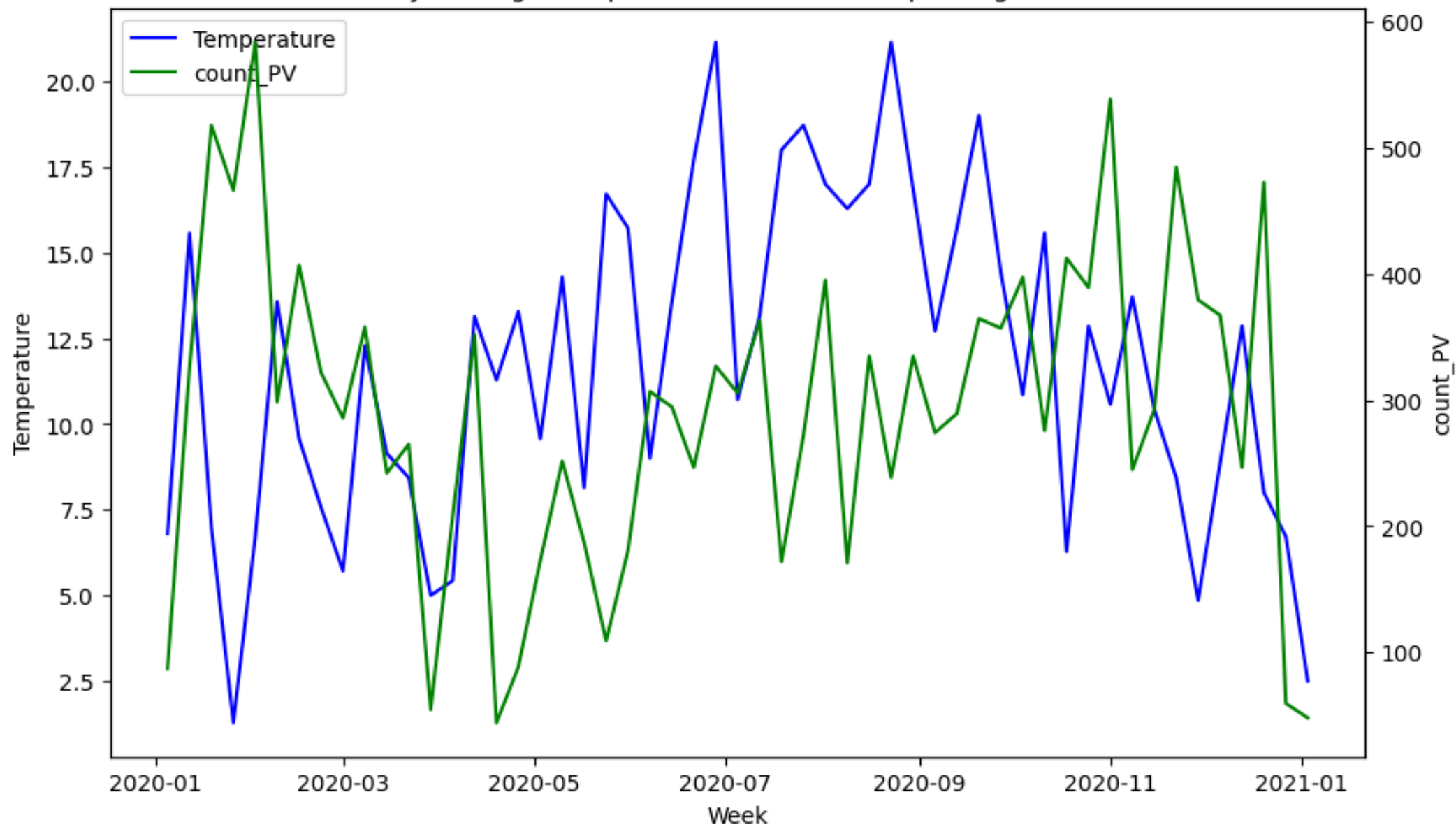# Research question 2: Influence of temperature on parking violations
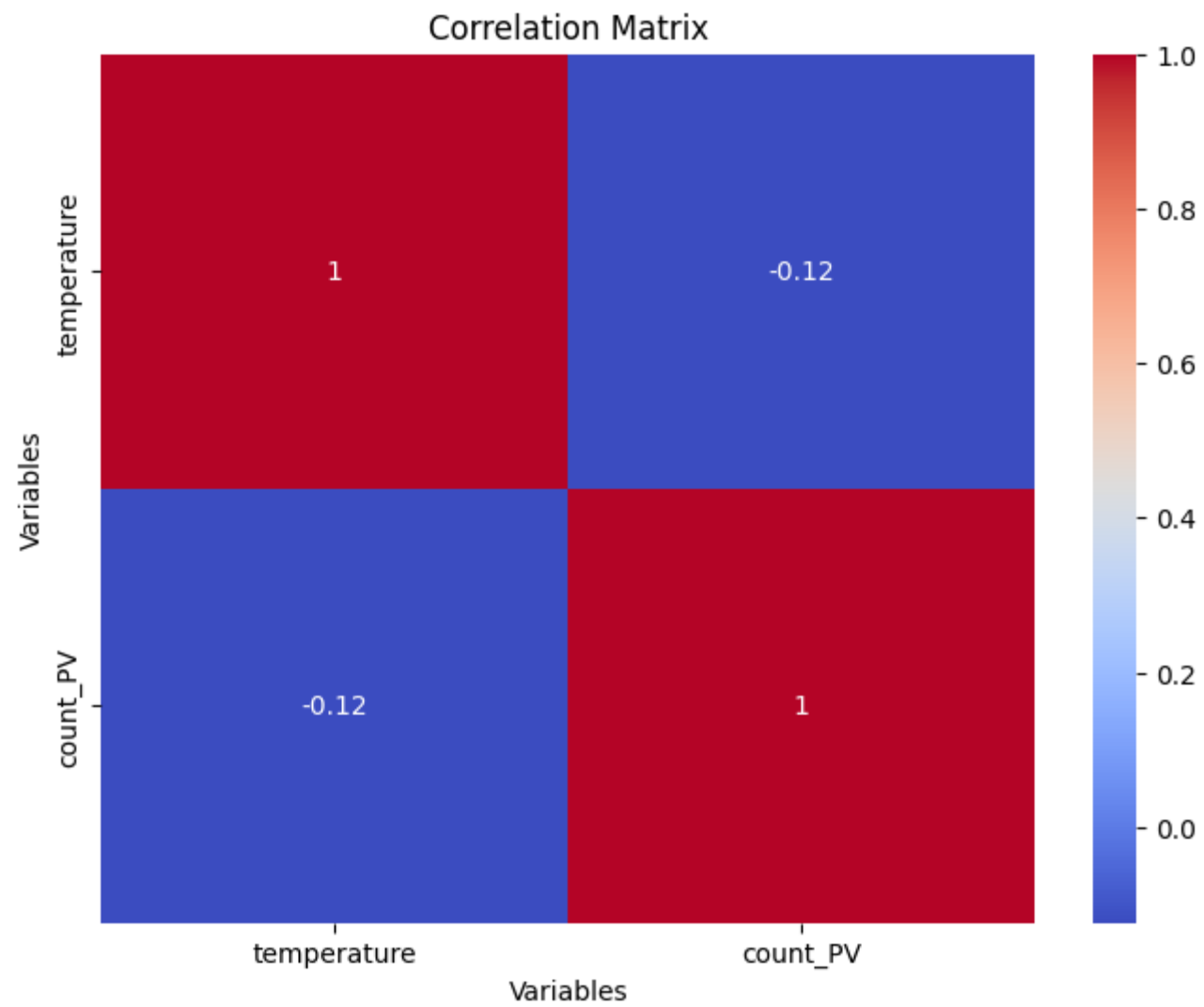
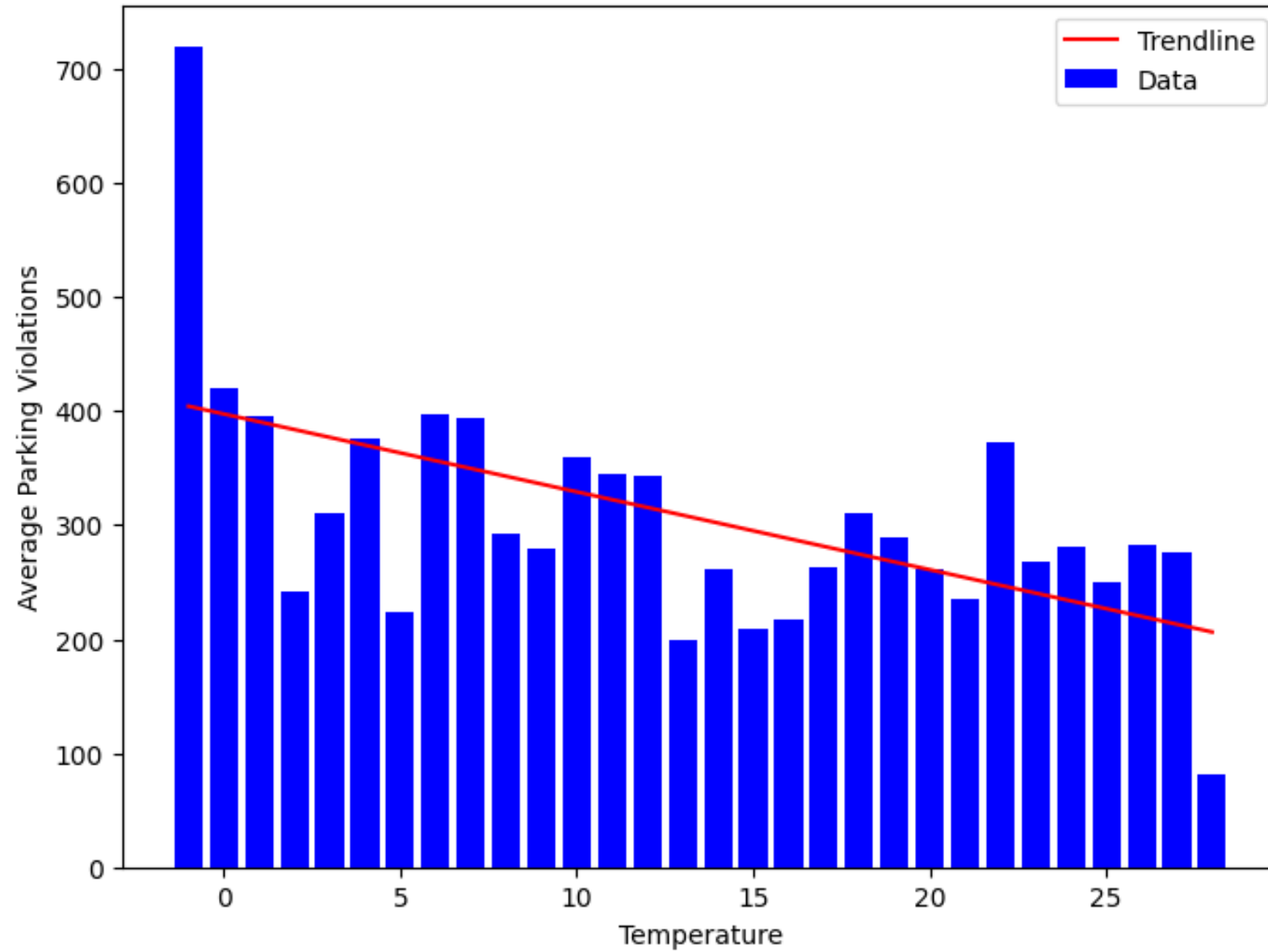Temperature Variation

Weekly and Monthly Average Temperature

Weekly Average Temperature and counted parking violations

Correlation Matrix

Average Parking Violations for Each Temperature

Discussion

- Result
  - Fewer parking violations occur later in the day
  - Only slight correlation between temperature and number of parking violations
- Recommendation for the city of Bonn
  - Increase monitoring between 10 and 12 am
  - Increase monitoring at low temperatures (?)
- Limitations
  - Caution in interpreting the results
  - Controls are not equally strong at all times
  - There are different no parking zones at different times

Thank you

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