Factors Influencing the Duration of Stay for Animals in Shelters

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1.1 Problem statement

- **Problem Statement:**
- Which factors influence the number of days an animal spends in the shelter before its final outcome is decided?

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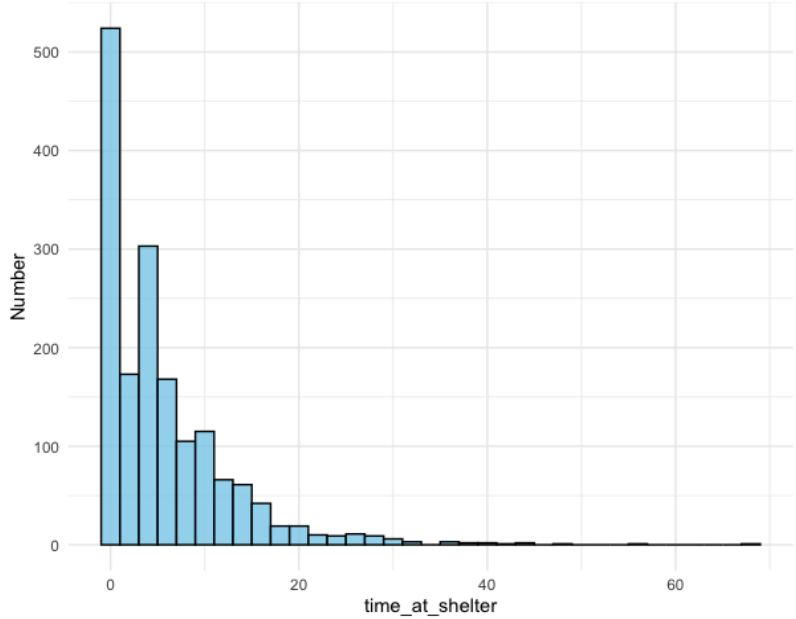
1.2 Data Overview

Key variables:

- Animal_type – The type of animal admitted to the shelter
- Month – Month the animal was admitted, recorded numerically with January=1
- Year. – Year the animal was admitted to the shelter.
- Intake_type – Reason for the animal being admitted to the shelter
- Outcome_type – Final outcome for the admitted animal
- Chip_Status – Did the animal have a microchip with owner information?
- Time_at_Shelter – Days spent at the shelter between being admitted and the final outcome.

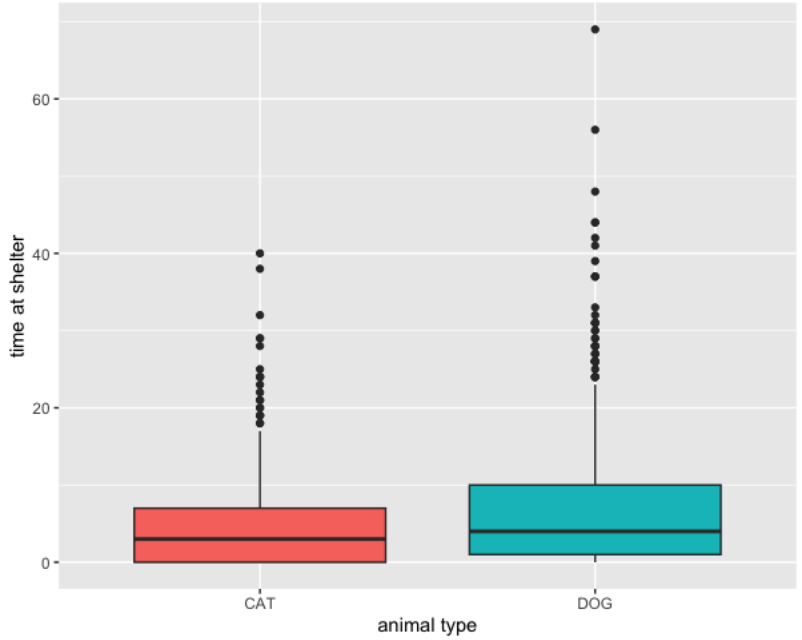
1. **Histogram** of the number of days an animal spends in the shelter



The chart shows a right-skewed distribution, with most animals staying 0-10 days and few staying beyond 30 days.

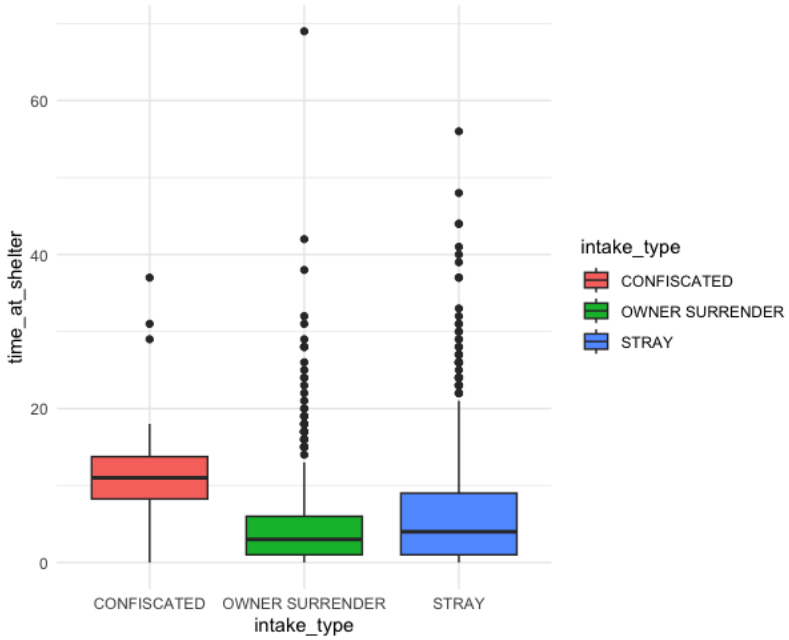
1.2 Data Overview

2. **Boxplot** of time_at_shelter and animal_type



Cats have a lower median stay than dogs, but dogs show a wider distribution with longer stays.

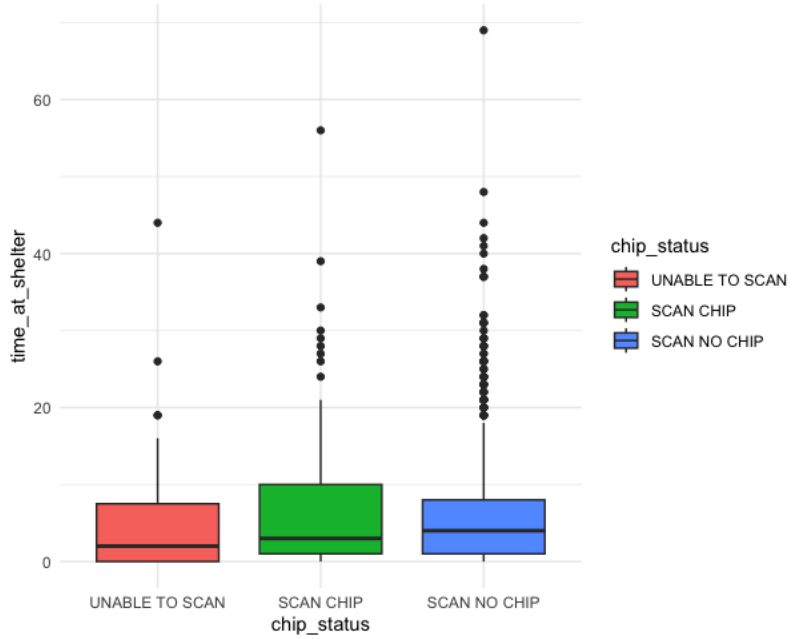
3. **Boxplot** of time_at_shelter and intake_type



The median of confiscated animals was significantly higher than that of the other two groups, indicating that confiscated animals stayed concentrated and longer.

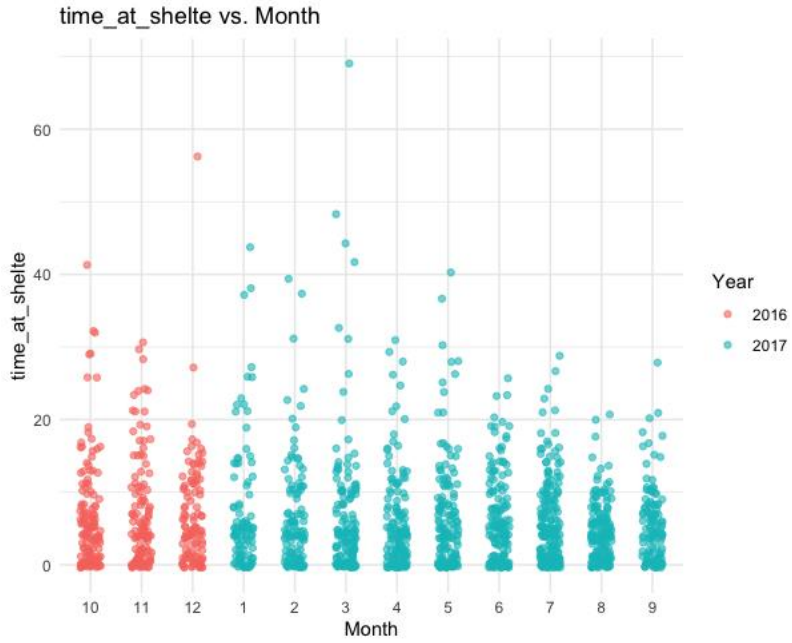
1.2 Data Overview

4. **Boxplot** of time_at_shelter and chip_status



The medians were similar across chip statuses, suggesting comparable shelter stays. However, the IQR was wider for scanned animals, indicating greater data dispersion.

5. **Scatter plot** of time_at_shelter and intake_type



The dataset spans from October 2016 to September 2017 with complete monthly data. Animal shelter stays were mostly short (under 20 days) and showed no significant seasonal variation.