

# Multivariate statistics: Assignment 1

Kendall Brown *stnumber*

Raïsa Carmen *s0204278*

Team B: Stefan Velez *stnumber*

Adhithya Unni Narayanan *stnumber*

Audrey-Justine Towo Kamga *stnumber*

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## Abstract

### 1 Introduction and data exploration

This report assesses hearing thresholds for a sample of 546 healthy male volunteers. The subjects were 52 years old on average at the start of the study and are followed for an average of 7.57 years. The hearing threshold is measured, on average, every 1.59 years, separately for both ears.

Figure 1 shows the trends in the hearing threshold for all volunteers over time.

Describe the data, and use graphical techniques to explore the mean structure, the variance structure and the correlation structure. Summarize your conclusions. What are the implications with respect to statistical modeling ?

### 2 Methodology

All analysis was carried out with the statistical software R. All scripts are freely available at this git repository.

### 3 Results

### 4 Discussion and conclusion

#### 4.1 further research

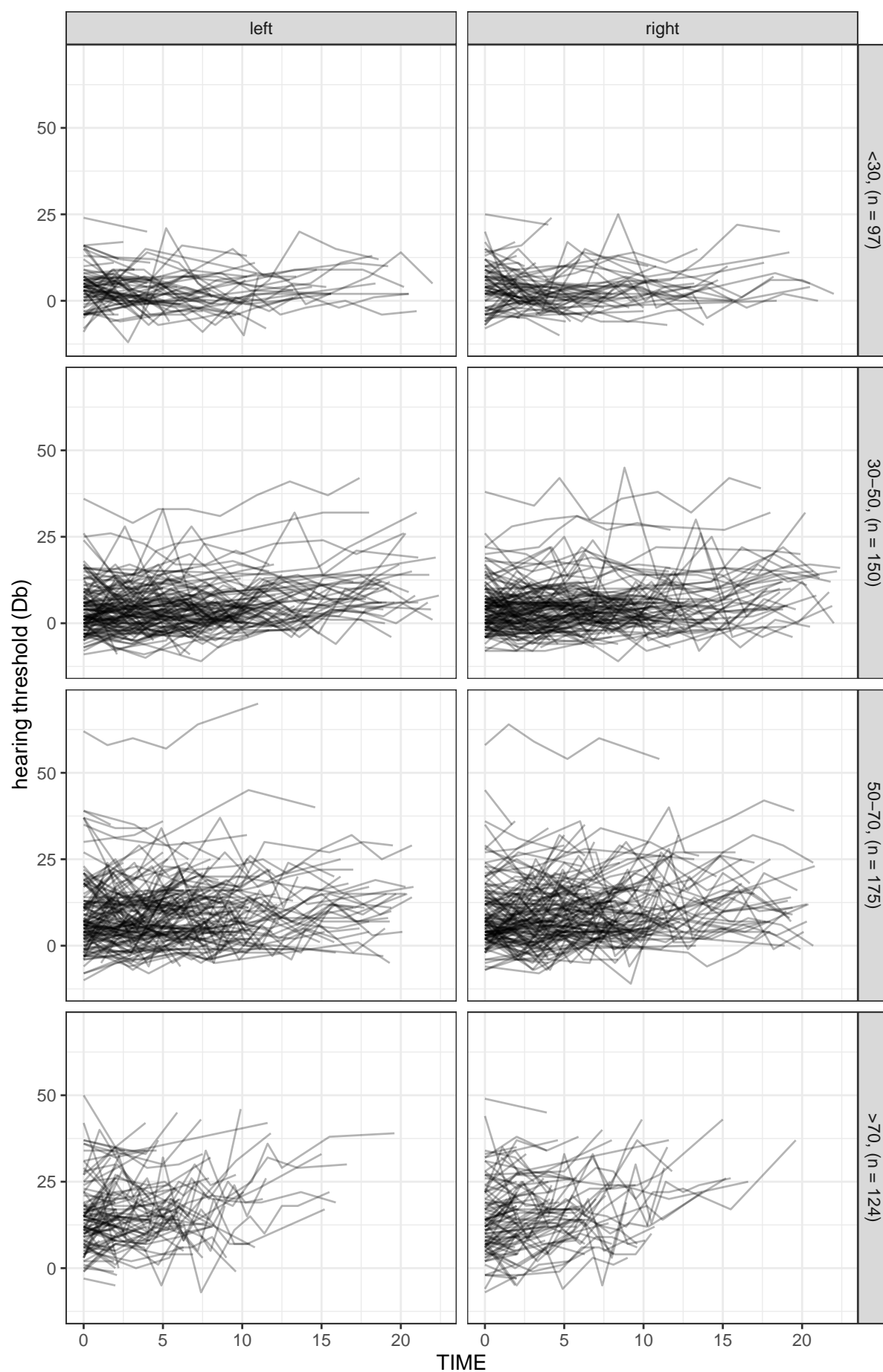


Figure 1: Hearing threshold over time, divided by left and right ear and by age group at the start of the study