

Psych 252: Statistical Methods for Behavioral and Social Sciences

Tobias Gerstenberg

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Contents

Preface

This book contains the course notes for Psych 252. The book is not intended to be self-explanatory and instead should be used in combination with the course lectures.

If you have any questions about the notes, please feel free to contact me at: gerstenberg@stanford.edu

Chapter 1

Introduction

1.1 Thanks

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1.2 List of R packages used in this book

```

# RMarkdown
library("knitr")      # markdown things
library("kableExtra") # for nicely formatted tables

# Datasets
library("gapminder")  # data available from Gapminder.org
library("NHANES")     # data set
library("titanic")    # titanic dataset

# Data manipulation
library("arrangements") # fast generators and iterators for permutations, combinations and partitions
library("magrittr")     # for wrangling
library("tidyverse")    # everything else

# Visualization
library("patchwork")    # making figure panels
library("cowplot")      # making figure panels
library("ggpol")        # for making fancy boxplots
library("ggribes")      # for making joyplots
library("gganimate")    # for making animations
library("GGally")       # for pairs plot
library("ggrepel")      # for labels in ggplots
library("corrr")        # for calculating correlations between many variables
library("corrplot")     # for plotting correlations
library("DiagrammeR")   # for drawing diagrams

# Modeling
library("afex")          # also for running ANOVAs
library("lme4")          # mixed effects models
library("emmeans")      # comparing estimated marginal means
library("broom")        # getting tidy model summaries
library("broom.mixed")  # getting tidy mixed model summaries
library("janitor")       # cleaning variable names
library("car")          # for running ANOVAs
library("rstanarm")      # for Bayesian models
library("greta")        # Bayesian models
library("tidybayes")     # tidying up results from Bayesian models
library("boot")         # bootstrapping
library("modelr")       # cross-validation and bootstrapping
library("mediation")     # for mediation and moderation analysis
library("multilevel")   # Sobel test
library("extraDistr")    # additional probability distributions
library("effects")      # for showing effects in linear, generalized linear, and other models
library("brms")         # Bayesian regression

# Misc
library("tictoc")       # timing things
library("MASS")         # various useful functions (e.g. bootstrapped confidence intervals)
library("lsr")          # for computing effect size measures
library("extrafont")    # additional fonts
library("pwr")          # for power calculations

```