Exercises

A 15 items questionnaire concerning the topic of **drinking and driving** (motivational tendencies to drink and drive). The questionnaire covers the topics *problem behaviors*, *partying*, *sensation-seeking*, *macho behavior* and *dissatisfaction*.

1. (`skip`) I frequently skipped classes in high school.

2. (`suspend`) I have been suspended from school for fighting on more than one occasion.

3. (`sick`) Except for times when I was sick, I hardly ever missed a day of school. (reverse scoring)

4. (`smashed`) Its seems like no matter what my friends do on a weekend, we almost always end up at a bar getting smashed.

5. (`party`) A party wouldn't be a party without some liquor.

6. (`drunk`) I've been drunk at least five times this month.

7. (`chances`) Taking chances can be fun.

8. (`race`) I would like to drive a race car.

9. (`speed`) I like to speed in my car.

10. (`punch`) If someone gives me a hard enough time, I'll punch him.

11. (`tough`) It's important for me to act and dress like I'm a tough guy.

12. (`gun`) There should be a gun in every home.

13. (`seams`) My life appears to be coming apart at the seams.

14. (`deal`) I feel like I'm getting a raw deal out of life.

15. (`happy`) Overall, I'd say I'm very happy. (reverse scoring)

Exercise 1. *Read in the data set* `drinkdrive.csv` *and give a short description of the sample size and the additional variables included at the end of the data frame.*

Exercise 2. *Load (or if needed install) the* `eRm` *package and fit a simple rasch model to the data. Additionally give a model description and plot your results using the* `plotjointICC()` *function. Hint: is the sumscore a reasonable sufficient statistic?*

Exercise 3. *Plot only the first 5 items of the fitted model using the* `plotjointICC()` *function.*

Exercise 4. *Plot the empirical ICCs for your model using* `raw` *and* `tukey`. *Repeat this for a given item subset. Hint: you have to choose a different ICC plot method.*

Exercise 5. *Plot the confidence intervals for the the empirical ICCs.*

Exercise 6. *Provide a person-item map plot for all 15 items. What can you infer from the plot about the items?*

Exercise 7. *Finally give a short description of your results.*