Lab 6 Activity

PSYC 7804 - Spring 2026

We will be looking at the `Chirot` data from the `car` package again. As a reminder, this is data on the the 1907 Romanian peasant revolt. Find a descriptions of the variables in the table below:

Variable	Description
intensity	Intensity of the rebellion
commerce	Commercialization of agriculture
tradition	Traditionalism
midpeasant	Strength of middle peasantry
inequality	Inequality of land tenure

run the following code to name the data you will be using as `dat`:

```
library(car)
dat <- Chirot
```

1. Treat `intensity` as the outcome and all the other variables in the dataset as predictors and run a multiple regression. What is the R^2 of this model?

2. We want to rank the predictors in order of importance based on their unique contribution on the total R^2. Run a dominance analysis. How much does each predictor contribute to the total R^2? (HINT: use the `$` operator on the `dominanceanalysis` object to extract each predictor's contribution without using the `summary()` function)

- Does `inequality` conditionally dominate `midpeasant`? Motivate your answer based on the appropriate dominance matrix.

- Does `inequality` completely dominate `midpeasant`? Motivate your answer based on the appropriate dominance matrix.

3. Although `tradition`, on average, was the second predictor that contributed the most to R^2, it was not significant in the full regression. Conduct a retrospective power analysis to evaluate how much power there was to detect a significant effect of `tradition`. Follow the steps below:

- Calculate the ΔR^2 between the full regression and the regression without `tradition`.
- calculate f^2.
- calculate power (you need to specify the correct df_2 through the `v =` argument and leave the `power =` argument empty).