Lab 12 Activity

For this lab activity, you will be using the `affairs` data from the `wooldridge` package. Run the following code to install the package and load the data as `dat`.

```
install.packages("wooldridge")
dat <- wooldridge::affairs[1:10]
```

The data contains the results of a survey given to 601 married individuals in 1978. Here is a description of the variables in the data:

Variable	Description
id	Identifier
male	1 if male
age	Age in years
yrsmarr	years married
kids	1 if have kids
relig	5 = very relig., 4 = somewhat, 3 = slightly, 2 = not at all, 1 = anti
educ	years schooling
occup	occupation, reverse Hollingshead scale. See https://fcon_1000.projects.nitrc.org/indi/enhanced/assessments/ses-child.html
ratemarr	5 = very hap marr, 4 = happier than avg, 3 = avg, 2 = smewht unhap, 1 = vry unhap
naffairs	number of affairs

1. Run a moderation analysis where the dependent variable is `naffairs`, the number of affairs someone has, the focal predictor is `yrsmarr`, numbers of years of marriage, and the moderator is `ratemarr`, individual self report or marriage quality.

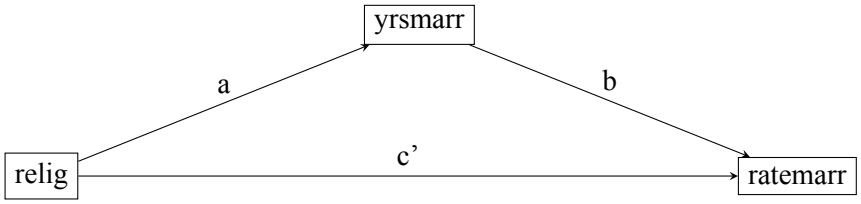
- Is the interaction effect significantly different from 0? What is the interpretation of regression coefficient associated with the interaction effect given that `yrsmarr` is the focal predictor and `ratemarr` is the moderator?

2. Wtire out the full regression equation and calculate some simple slopes.

- What is the expected slope of `yrsmarr` when `ratemarr` equals 3?
- What is the expected slope of `yrsmarr` when `ratemarr` equals 1?
- What is the expected slope of `yrsmarr` when `ratemarr` is at its mean?

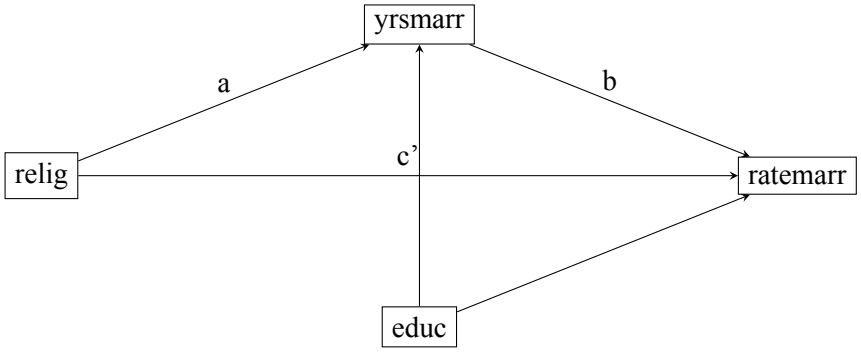
3. Plot the simple slopes of `yrsmarr` at the mean and 1 SD above/below the mean of `ratemarr`. What happens to the relation between `yrsmarr` and `naffairs` as `ratemarr` changes?

4. Use `lavaan` to estimate the following mediation model. Make sure to calculate the indirect and total effect.



- Does `yrsmarr` mediate the relation between `relig` and `ratemarr`? Make sure to calculate the appropriate confidence interval

5. Let's say that one of your colleagues is not happy with the previous model and says that you should *control* for education, `educ`. To do so, they tell you to run the following model:



Estimate this model in `lavaan`. Is the indirect effect still significant after controlling for education?