

# Linear Regression Lab

For this lab, we will continue using the 2012 NILT survey to introduce linear models. To do so, please set your RStudio environment as follows:

1. Open RStudio with your partner.
2. Open the linear model intro project.
3. Once in the project, create a new R script file (a simple r script NOT an .Rmd file);
4. Save the R file as 'linear\_model\_intro'.

First, load the `tidyverse` library and read the `nilt_r_object.rds` file which is stored in the folder called 'data' and contains the NILT survey (`tidyverse` was installed in your session already).

In the `linear_model_intro.R` script, use the `nilt` dataset in to:

1. Plot a scatter plot using `ggplot`. In the aesthetics, locate `rhourswk` in the X axis, and `persinc2` in the Y axis. In the `geom_point()` jitter the points by specifying the `position = 'jitter'`. Also, include the best fit line using the `geom_smooth()` function, and specify the `method = 'lm'` inside.
2. Print the summary of `m3` using the `summary()` function.
3. Is the relationship of hours worked a week significant?
4. What is the adjusted r-squared? How would you interpret it?
5. What is the sample size to fit the model?
6. What is the expected income in pounds a year for a respondent who works 30 hours a week according to coefficients of this model?