

In-person session 2

January 23, 2025

PMAP 8521: Program evaluation
Andrew Young School of Policy Studies

Plan for today

Files, folders, and projects

Regression, p-values, and null worlds

R lab! with {ggplot2} and {dplyr}

Files, folders, and projects

**Why so much content
these first two weeks?**

How much should I be reading?

File paths, working directories, and RStudio projects

.zip files

The hyperliterality of computers

Warnings and messages

Quarto tips

Regression stuff

**Categorical
variable**



**Continuous
variable**



From slides

**Many
simultaneous
continuous
variables**



**Many
simultaneous
categorical
variables**

Regression equations

**And is the intercept ever useful,
or should we always ignore it?**

**Why use two steps to create a regression in R?
(i.e. assigning it to an object with <-?)**

**Why use tidy()
from the broom package?**

How was the 0.05 significance threshold determined?

Could we say something is significant if $p > 0.05$, but just note that it is at a higher p-value?

Or does it have to fall under 0.05?

**Why all this convoluted
logic of null worlds?**



5-Minute Healthy Oatmeal

Fit Foodie Finds

4.6 ★★★★★ (93)

10 min



Basic Oatmeal Recipe

Del's cooking twist

5.0 ★★★★★ (1)

15 min



FeelGoodFoodie

<https://feelgoodfoodie.net> › [recipe](#) › [how-to-make-oat...](#) ⋮

How to Make Oatmeal

Jan 17, 2019 — Microwave Instructions. Place the **oats**, water and salt in a microwave safe bowl. Heat in the microwave on high for 90 seconds. · Stovetop ...

★★★★★ Rating: 5 · 8,192 votes · 4 min

[Microwave Cooking...](#) · [Stovetop Cooking...](#) · [Healthy Oatmeal Recipes](#)



Downshiftology

<https://downshiftology.com> › ... › [Courses](#) › [Breakfast](#) ⋮

Easy Oatmeal Recipe

Sep 11, 2023 — Learn how to make **oatmeal** that's hearty and creamy. It's easy to make on the stove or in the microwave - and it's healthy too!

★★★★★ Rating: 5 · 21 votes · 7 min

[Popular Types Of Oatmeal](#) · [How To Make Oatmeal Like A...](#) · [Make Your Oatmeal Taste...](#)



**Do we care about the actual coefficients
or just whether or not they're significant?**

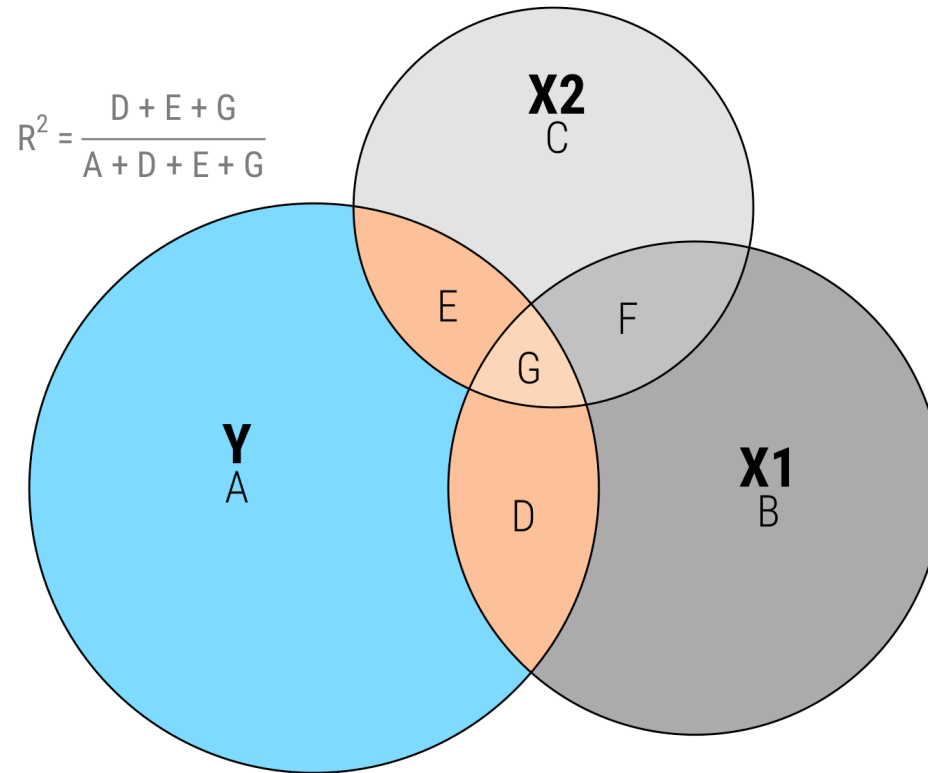
How does significance relate to causation?

**If we can't use statistics to assert causation
how are we going to use this information
in program evaluation?**

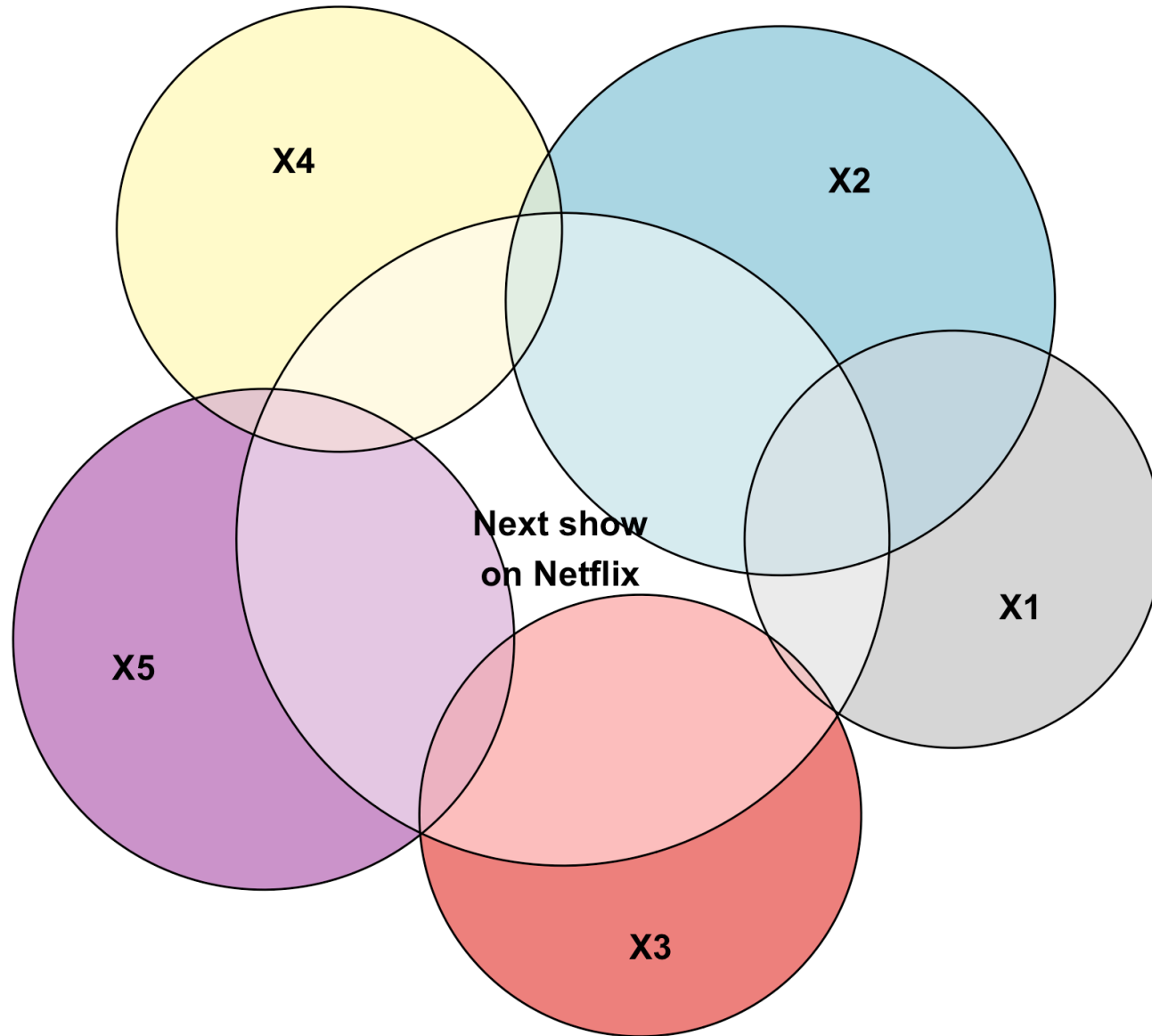
What counts as a "good" R^2 ?

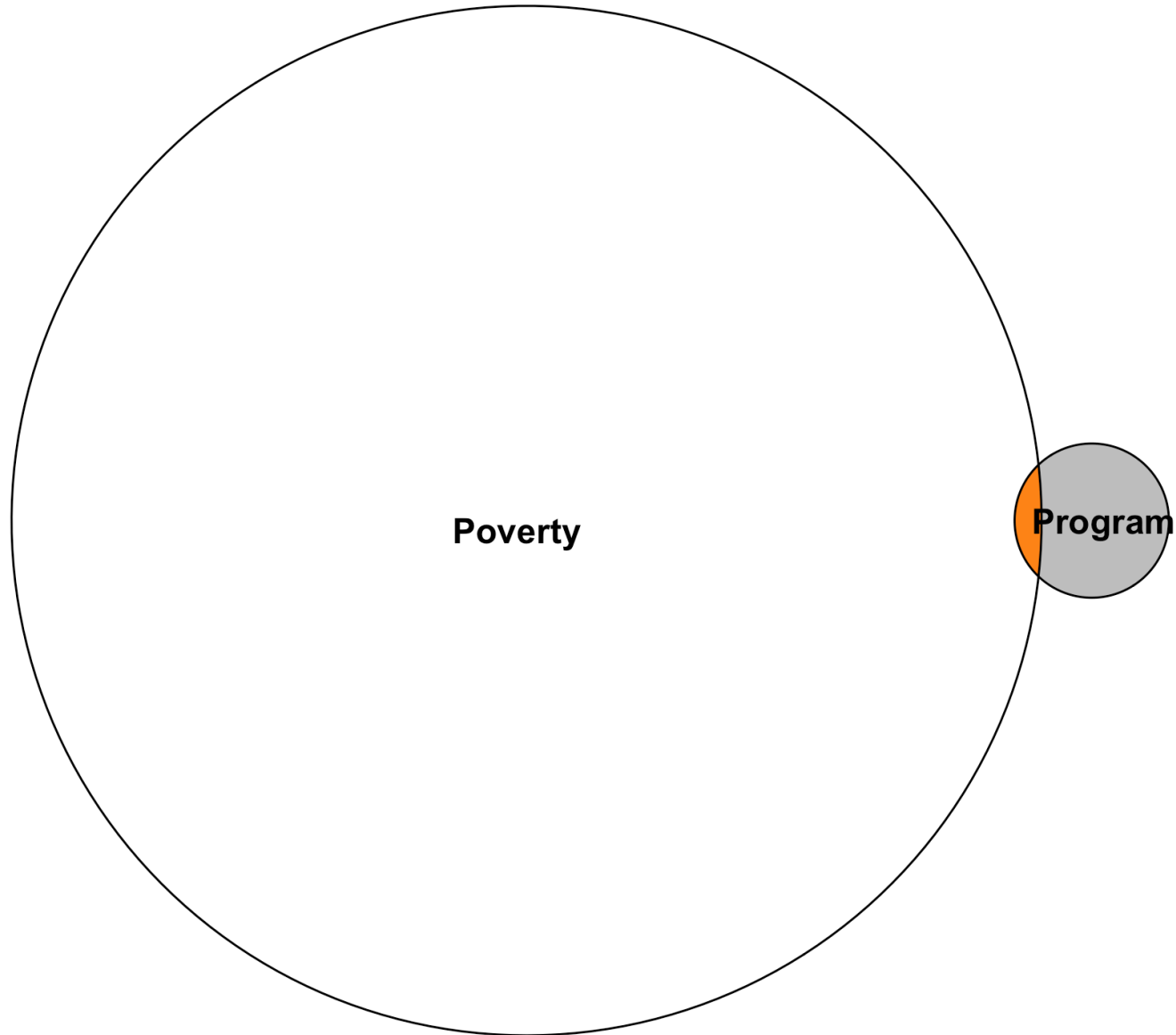
R² represented as an Euler diagram

Orange area (D + E + G) shows the total variance in outcome Y that is jointly explained by X1 and X2



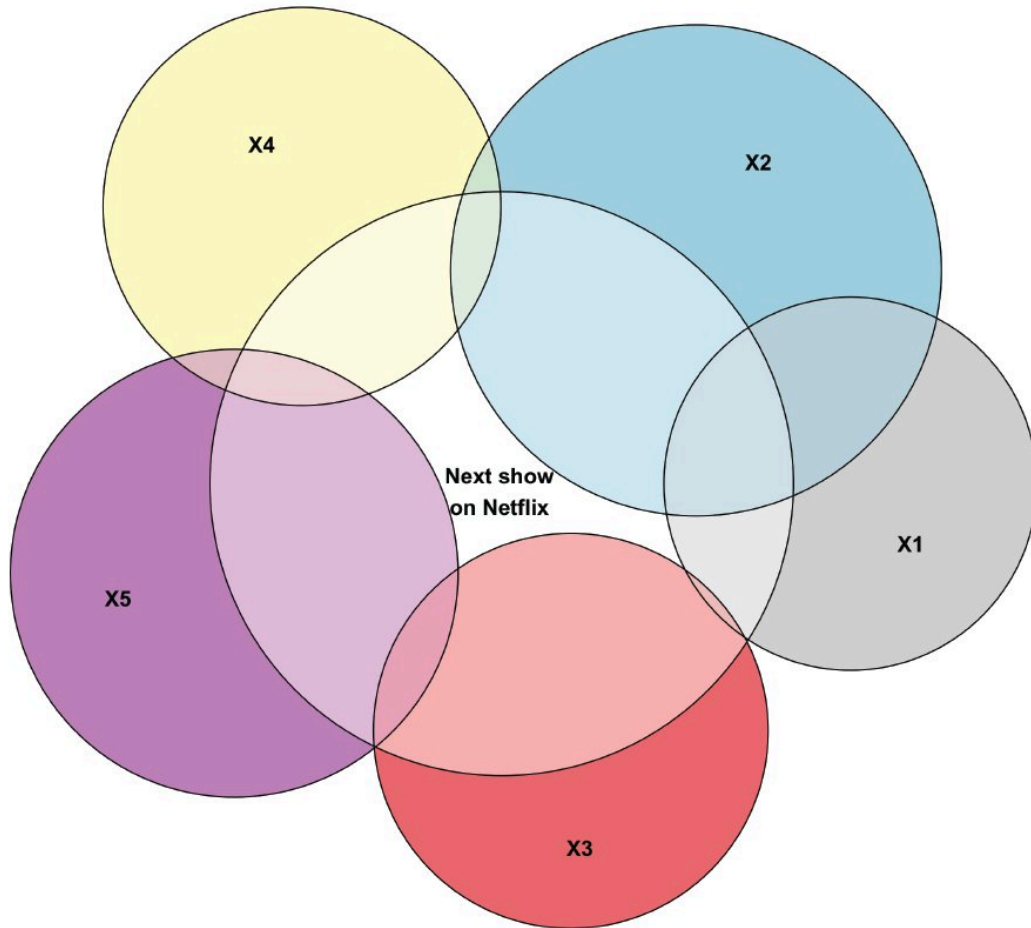
Circles sized according to each variable's sum of squares; size of overlapping areas is not 100% correct due to limitations in available geometric space





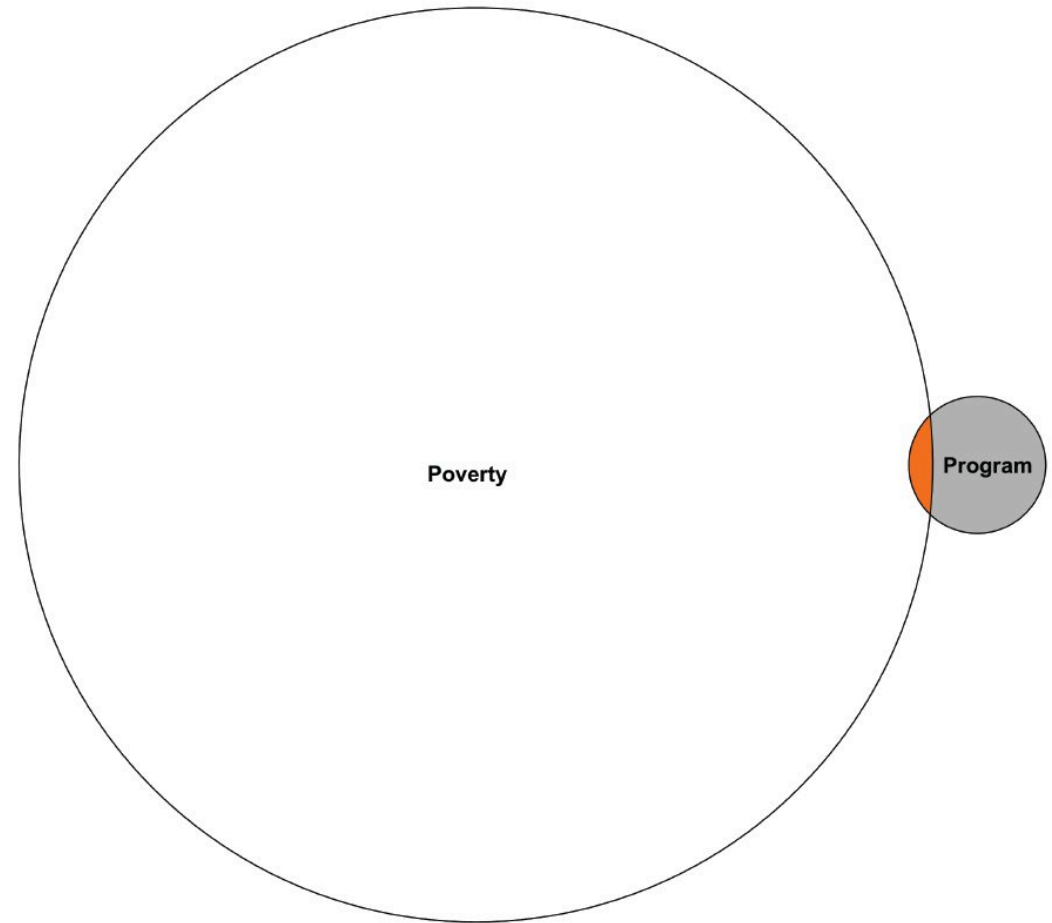
Regression focused on prediction

Focus is on Y
Minimize unexplained variation in the outcome



Regression focused on estimation

Focus is on a single X
Get that little sliver as accurate as possible



R lab!

{ggplot2} and {dplyr}