

In-person session 3

January 30, 2025

PMAP 8521: Program evaluation
Andrew Young School of Policy Studies

Plan for today

Regression and Quarto FAQs

{ggplot2} and {dplyr}

Logic models and evaluation

Regression and Quarto FAQs

Class website announcements

Chunk labels, captions, and cross references

Why does OLS minimize squared errors?

How do you know what to control for?

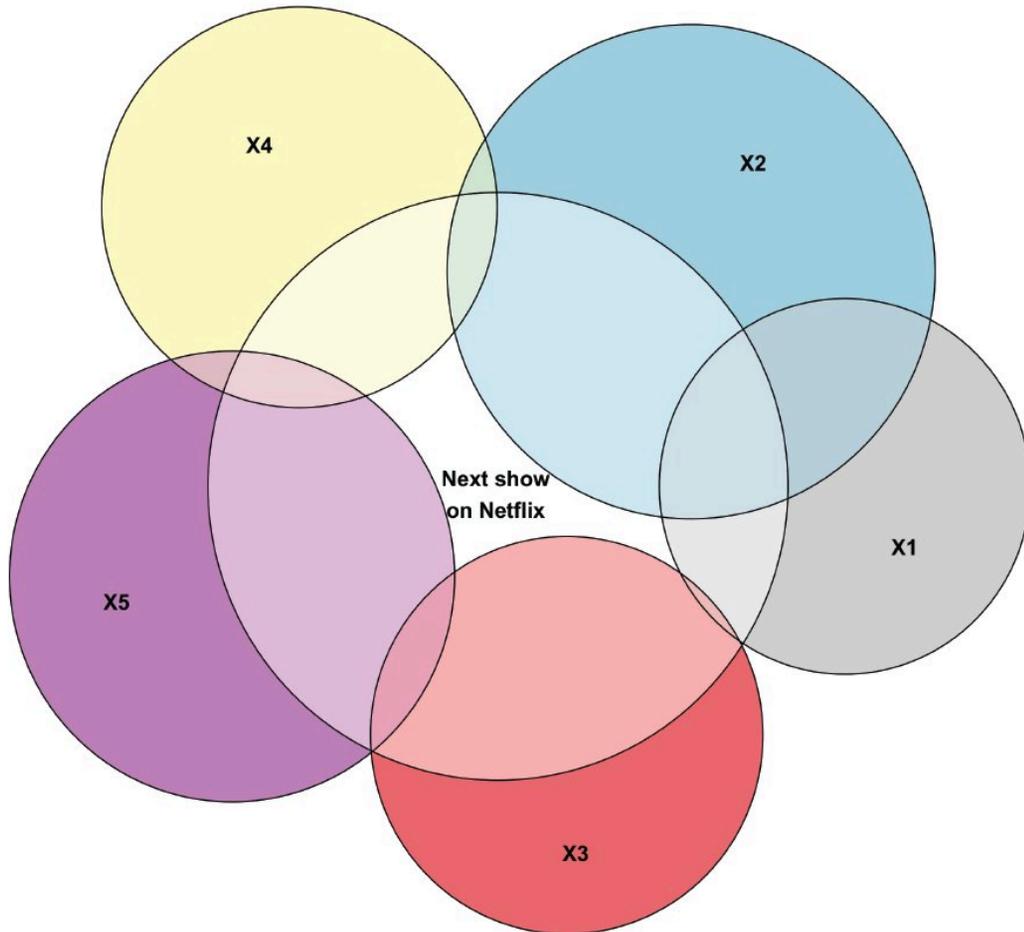
**How do you know
how many things to control for?**

Which coefficients do you interpret?

**What's the difference
between R^2 and p-values?**

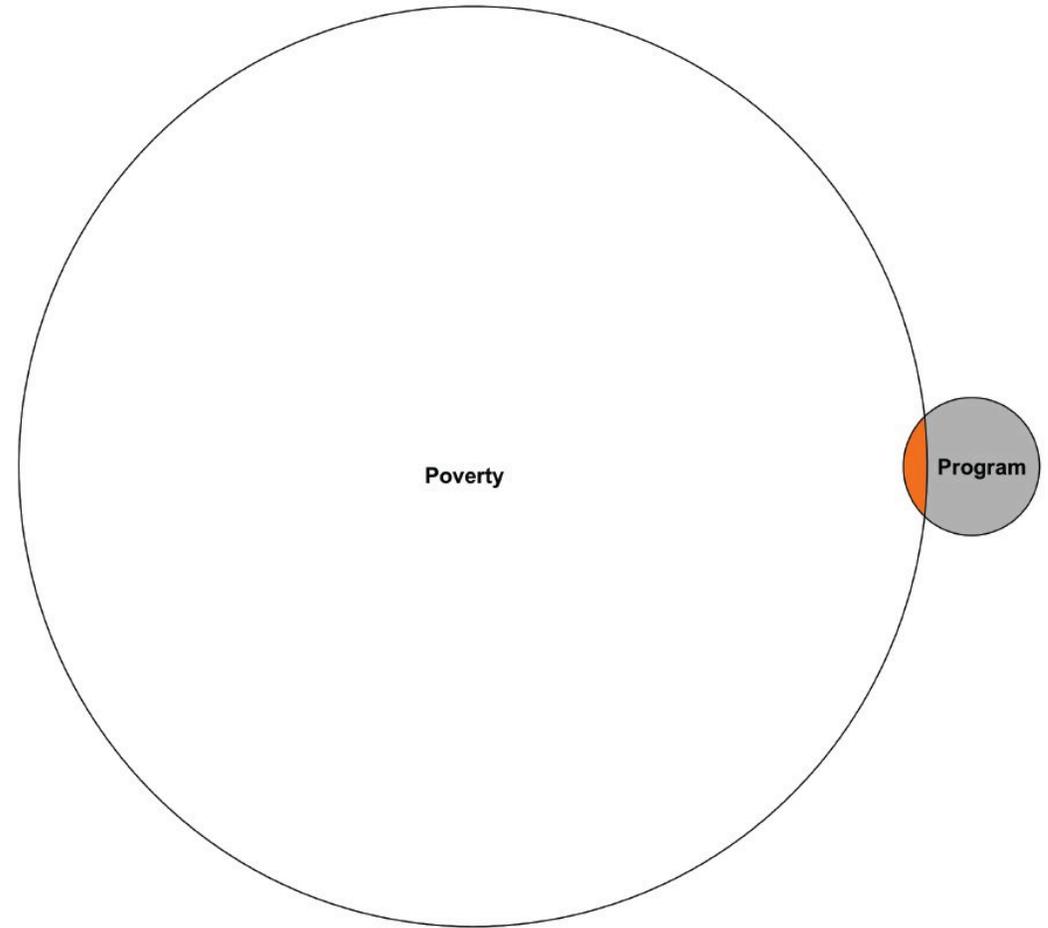
Regression focused on prediction

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



Side-by-side regression tables

	(1)	(2)	(3)	(4)
(Intercept)	362.307	-5780.831***	-5736.897***	-5433.534***
	(283.345)	(305.815)	(307.959)	(286.558)
bill_len	87.415***		6.047	-5.201
	(6.402)		(5.180)	(4.860)
flipper_len		49.686***	48.145***	48.209***
		(1.518)	(2.011)	(1.841)
sexmale				358.631***
				(41.572)
Num.Obs.	342	342	342	333
R2	0.354	0.759	0.760	0.807
R2 Adj.	0.352	0.758	0.759	0.805
AIC	5400.0	5062.9	5063.5	4863.3
BIC	5411.5	5074.4	5078.8	4882.4
Log.Lik.	-2696.987	-2528.427	-2527.741	-2426.664
F	186.443	1070.745	536.626	457.118
RMSE	643.54	393.12	392.34	353.66

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

**See full documentation and
examples for `modelsummary()` [here](#)**

Make nicer tables with {tinymce}

{ggplot2} and {dplyr}

Logic models and evaluation

**Do people really have the
job title "program evaluator"?**

How much does this evaluation stuff cost?

**Can you do scaled-down versions
of these evaluations?**

**Isn't it best to always
have an articulated theory?**

**Should implicit theory and articulated theory
be the same thing in most cases?**

**What if a program exists already
and doesn't have a logic model?**

Why would a program aim for final outcomes that can't be measured?

**What should you do if you find that your theory of change (or logic model in general) is wrong in the middle of the program?
Is it ethical to stop or readjust?**

**How does regression
relate to impact evaluation?**

**Are logic models
and DAGs
the same thing?**

**Logic models are
managerial tools**

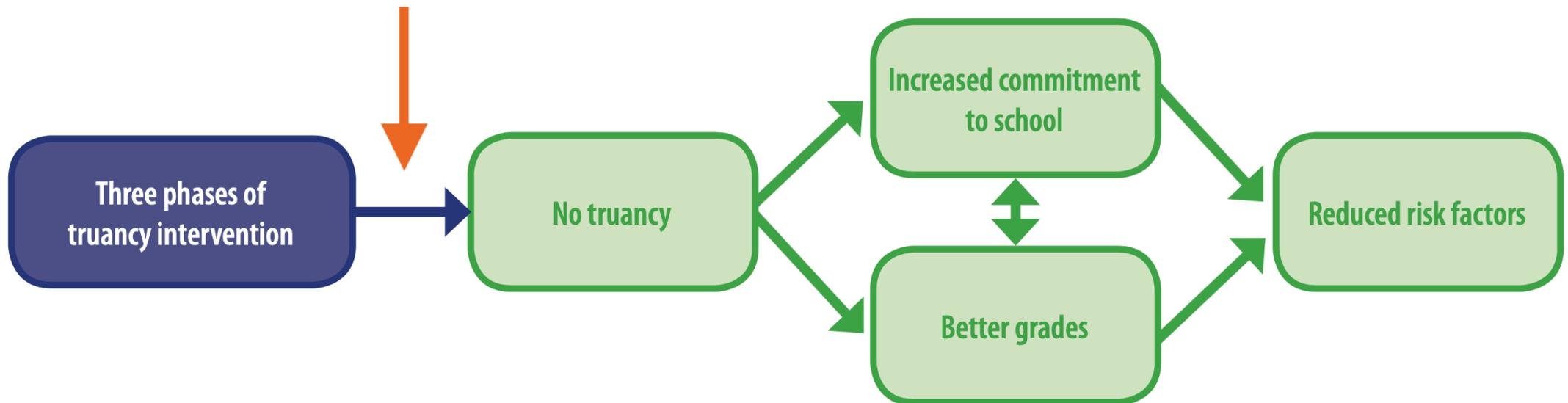
**DAGs are
statistical tools**

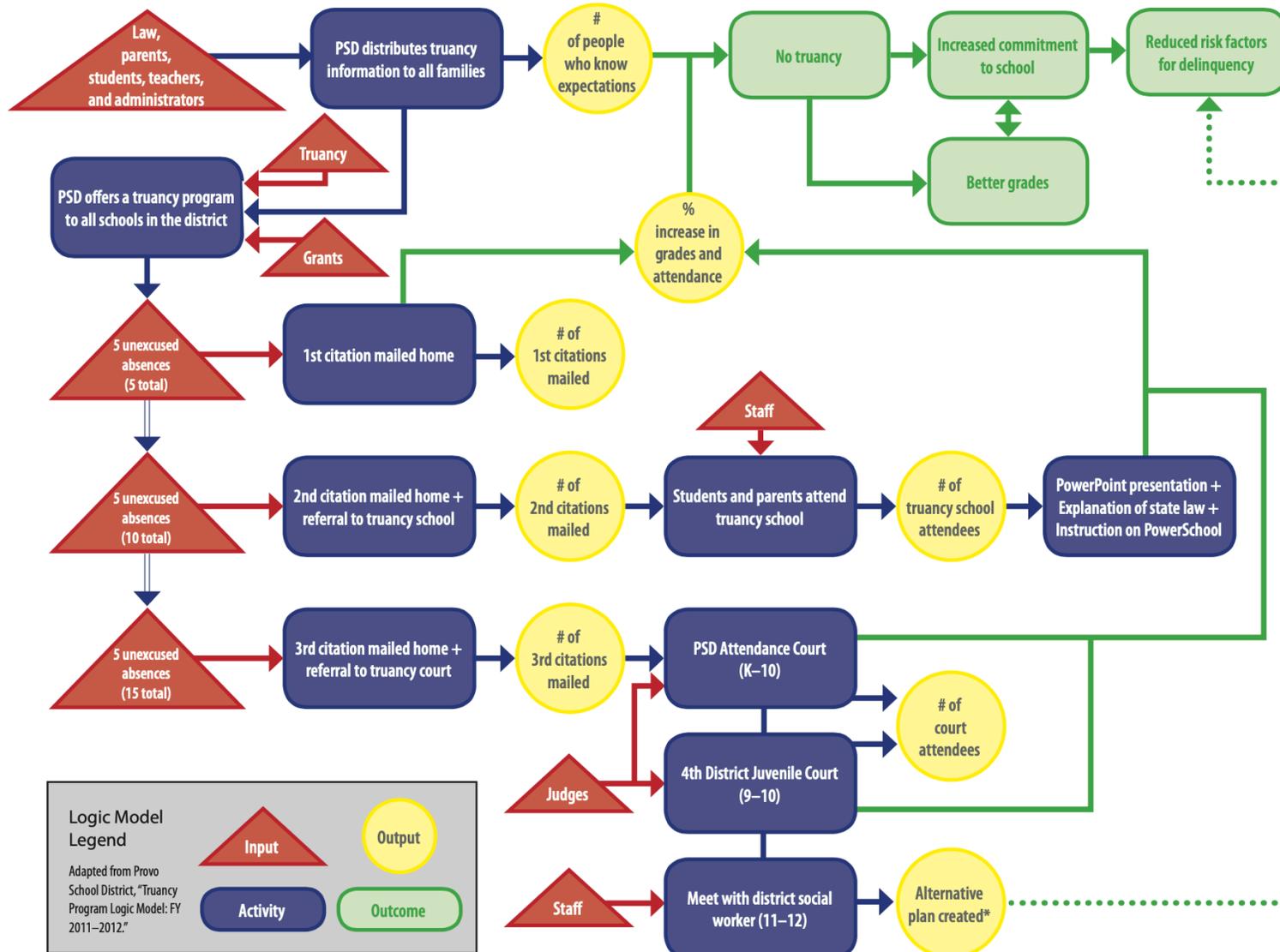
Inputs vs. Activities vs. Outputs vs. Outcomes

Impact theory vs. logic model

Impact theory

Ensure that the theory linking activities to the outcomes is sound!





Logic Model Legend

Adapted from Provo School District, "Truancy Program Logic Model: FY 2011-2012."

Input (Red Triangle)

Activity (Blue Rounded Rectangle)

Output (Yellow Circle)

Outcome (Green Rounded Rectangle)

* Because 11th and 12th graders who receive 3rd citations are generally unable to graduate from high school, district social workers no longer attempt to increase their commitment to school. As such, any outcomes that occur as a result of the alternative plans made for these students (work study programs, career development assistance, etc.) are only tangentially related to the outcomes of the truancy program itself. The system for creating alternative plans is an entirely separate program with its own logic model, goals, and outcomes.

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