

Modeling Workspace

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Problem Outline

How can we quantify the effects of faculty engagement in discussion boards of online courses?

- *Q1*: Does faculty activity on discussion forums affect student engagement on forums?
 - *Q2*: Are grade outcomes affected by the level and timing of faculty activity in discussion forums?
 - *Q3*: Do course evaluation scores fluctuate with the level of activity in a discussion forum?
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Research Question 1

Based on the available data, we can use two metrics for student behavior on discussion forums:

- number of posts per student over the entire course
- consistency of student posts from week to week
- variance of the number of posts from week to week

Because we are unable to directly get at the standard errors and p-values for the lasso estimates, we use these results to inform a second model; just a standard linear model.

Research Question 2:

How do student outcomes change with the level of engagement in online forums? If there is a change, it is independent of who is doing the posting?

keep it simple; just use `pass_rate` and `avg_gpa`

We repeat the same procedure from the previous research question to get more interpretable results.

I don't exactly understand how to interpret the coefficients of `prop_posts_boc` and `prop_posts_eoc` when they are included in the same model, so it is worth running the model two more times using one variable at a time. The reason I think this is difficult to understand is because the two aren't entirely but pretty strongly dependent on one another. I didn't think this was a problem when I was looking at the correlation matrix, but now that the models are ran I realize this is kind of wonky.

Future Options

- can we add data about instructors making announcements?
 - what peoplesoft data can be used?
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Working Notes

- research questions should be reordered; train of thought should be:
 - does faculty activity on forums affect grade outcomes?
 - what characteristics of faculty activity have greatest effect? (early course posts, late course posts, consistency of posting)
 - does faculty activity on forums affect student activity on forums?
 - what student activity do we want to measure?
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