

## Case Study 3: Team 3

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# Introduction

## THE CHRONICLE OF HIGHER EDUCATION

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### 48% of Female Undergrads at Duke Say They Were Sexually Assaulted While Enrolled, Up Sharply From 2016

By *Katherine Mangan* | FEBRUARY 22, 2019



Lance King, Getty Images

Nearly half of Duke University's female undergraduates say they have been sexually assaulted since enrolling at the university, a sharp increase from the proportion in 2016, according to a [report](#) released on Thursday.

Complaints of both sexual assault and sexual harassment increased from 2016 to 2018. It was unclear, the report says,

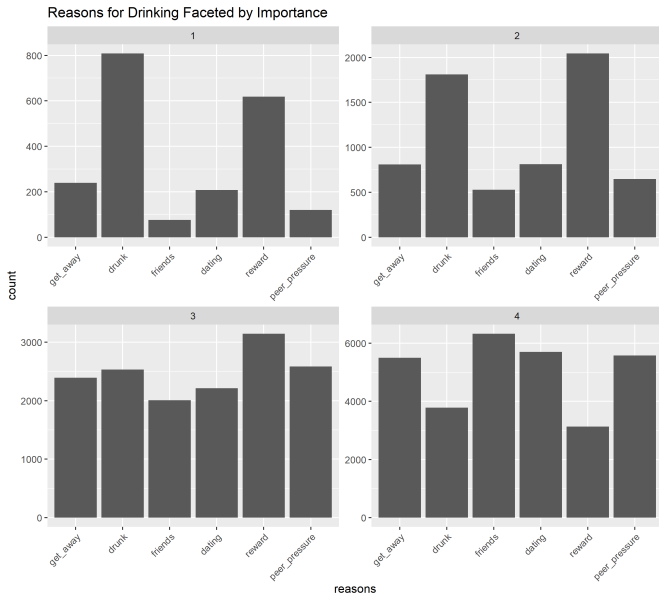
# Questions of Interest

- ▶ What factors influence college drinking behavior?
- ▶ Relationship between drinking policies and college drinking behavior
- ▶ Relationship between college drinking behavior and sexual assault (caused by drinking)

# Data Cleaning

- ▶ Indicator Variables for NA answers to categorical data
- ▶ Zero-imputation for NA answers to ordinal data (if sensible)

# EDA: Drinking Habits



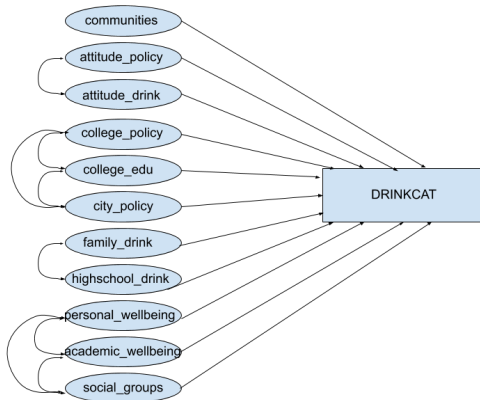
# EDA: Elastic Net

- ▶ **Heavy Drinking (+)**
  - ▶ Importance of parties in college experience
  - ▶ Disruptive/loud drinking
  - ▶ Opinion on off-campus bar (# acceptable drinks)
  - ▶ % friends who are binge drinkers
  - ▶ HS binge behavior in senior year

# Dimension Reduction

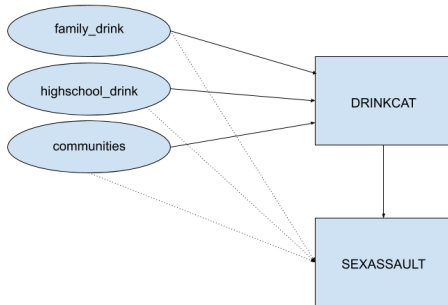
- ▶ Grouping into Latent Factors
- ▶ Factors: Correlated and Interpretable
- ▶ Ordinal predictors for each factor

# Latent Variable Model





# SEM



# Discussion and Future Work

- ▶ Influential Factors:
  - ▶ High high school drinking habits is associated with increased college drinking behavior
  - ▶ Worse academic well-being is associated with increased college drinking, while better personal wellbeing is associated with a decrease in college drinking
- ▶ Policies:
  - ▶ Both school and local policies did not have a significant effect on college drinking behavior
  - ▶ Less education material on drinking is associated with less drinking
- ▶ Sexual Assault:
  - ▶ High school drinking habits alone and through mediator contributes the most to incidences of sexual assault
- ▶ We assume linearity and normality in our models, so in the future we want to extend to non-parametric models with SEM