

# Student Consumption of Caffeine on Campus

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Agenda

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Research Questions
Sample Size and Construction
Survey Methodology
Preliminary Data
Future Work

# Introduction - Research Question

- Caffeine consumption patterns at Carnegie Mellon University?
- Correlation to various factors such as GPA/activity level, etc.?
- Student perception of consumption

# **Reason for Survey**

- Damaging health effects of excessive caffeine consumption
- Concern that students today consume large amounts of caffeine
  - Keeping up with academic workload or athletics



Rex was just no good until he had his morning coffee. Afterward, he was REALLY bad.

### Our Goal

Convince campus administrators to reconsider offering healthier drinks

Achieve better health => hinder unnecessary motivations for caffeine consumption.

Conclusive Goal: Provide data on patterns of caffeine consumption among undergraduates

### Goal of Survey Questions

Demographic Information

- Year; College
- Gender
- Academic Performance
  - Major & Minor
  - GPA and Units taken this semester
  - Time spent on class work
- Extracurricular Involvement
  - Activities
  - Part-time work
  - Leisure Time

### Some more questions

#### General Well-being:

- Sleeping patterns.
- Exercise schedule
- What caffeine products are consumed and in what quantity?
- Student Perception:
  - Reason for consumption
  - Comfort with amount currently consumed

# Sample Construction

# Sample Size

Real Initially we considered a 500 student non stratified sample

← Switched to stratified by year (including 5<sup>th</sup>)

ℴ Wanted a ME of 0.1

**CR** ME formula for stratified sample:

$$ME = 1.96 \times \sum_{h=1}^{H} W_h^2 (1-f) \frac{s_h^2}{n_h}$$

# Sample Size

Modified the formula to include only info. we know/can estimate.
 ME = 0.1
  $ME = 1.96 \times \sum_{n=1}^{H} \frac{N_n}{N} (1-f) \frac{s_n^2}{(N_n \times f)}$ 

 $\propto N_{p}$  = Population size of the strata

- $\mathbb{R}$  N = overall population

# Selecting the Sample

Year	Number Needed	Number Selected
Freshmen	20	120
Sophomores	18	108
Juniors	18	108
Seniors	17	102
5 <sup>th</sup> Years	3	18
Total	76	456

Assuming a (conservative) 15% response rate Students were randomly selected from C-Book

# Survey Methodology

# Google Form

Used a Google Form to create the survey
 Responses are automatically entered into a spreadsheet for easy processing
 Madifications

Real Modifications:

Changing question type to allow for multiple responses

## Sample Selection

Random Number Generator
 First number: Page number
 Second number: Line number on that page

Problem of Duplication
Master d-list created
Composed email with link to survey
Included incentive description

# Preliminary Data

# Responses So Far

138 Responses
Response rate:
30.26%
\$50 Incentive



Junior Underepresentation--RedoReminder Email this Week



Opposite of campus populationBusy people bias

# Future Work

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# Variables Being Measured

Busy-ness ScorePerception of Caffeine

- Reople who are busier consume more caffeine

# Question to be Answered:

 Is there an underlying correlation between Caffeine Consumption and Performance Enhancement?
 Do students who consume significant amounts of caffeine believe they have a problem?





# Survey Analysis

Regression analysis

CR Determine if factors can predict caffeine consumptionCR ANOVA

To compare classes on consumption, busy-ness, etc.
Ost-stratification

○ We did pre-stratification by classes so we will not be performing post-stratification

🛚 Weighting

Considering weighting underrepresented scores
 Sophomores negatively; Juniorspositively

