INFO CHALLENGE

IC24: THE DATA OF GLOBAL CHANGE

# The Future of Green Terp

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sustainableumd

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# Introduction

Green Terp is a program in partnership with the Department of Resident Life & the Office of Sustainability to promote students to promote environmentally responsible choices.

They have requested for the Information Challenge 2024 to analyze their data set of students registering and certifying for their program.

Our team was tasked to analyze said data set to potentially advise Green Terp about their future processes.

# Questions

### Conversion Rates & Impact of ‘Red Flags’

How have the conversion rates of people certifying changed over the years? Are ‘red flags’ significant?

### Housing & Certification

Are people who live in certain environments more likely to certify?

### Trends over Time

How has things changed over the years? Can we predict anything?

# Notes About Data - Focus

Taking a closer look at Data_Level3_GreenTerp.csv

| | |
|---|---|
| **Academic Year (AY)** | The time when a form was submitted (2019-2023 excl. 2020) |
| **Form Type** | What kind of form is it? [Registration or Certification] |
| **UniqueID** | A student's ID |
| **Housing** | Where is said student residing in? |
| **Choices_(CHOICE_#_TYPE)** | What choices would a student make to better the environment? |

# Notes About Data - Relevant Information

1. Data is collected by self-report
2. Some questions are required
3. Ideal to register first then certify
4. Yearly Certifications Required
5. Certification has its incentives ($3)
6. Form format might change

# Notes About Data - Assumptions

1

Most information is reliable

2

Data is reliably cleaned

3

2022-2023 AY had fully concluded

4

‘Red flags’ and duplicates exist

# Rates & Flags

# Conversion Rates & Red Flags

## Compiled using Python (Pandas & NumPy)

### Without considering for ‘red flags’

Conversion rate of registered to certified is 46.502331778814124%

### Considering for ‘red flags’

Unique conversion rate from registering to certifying is 48.495200911013505%

### By year?

2018-2019 was 49.60691823899371% with 1262 certifications and 2544 registrations

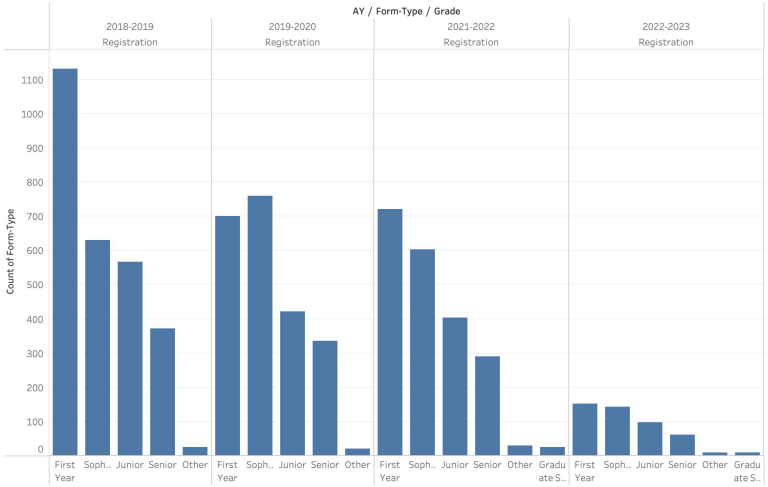
2019-2020 was 44.52415112386418% with 931 certifications and 2091 registrations

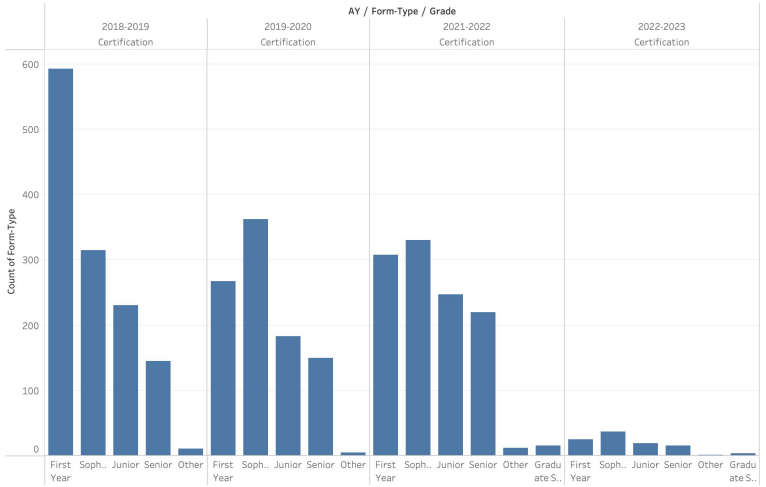
2021-2022 was 50.93765838824126% with 1005 certifications and 1973 registrations

2022-2023 was 19.50718685831622% with 95 certifications and 487 registrations

More information is on the Jupyter Notebook in the Github repository

# # of Certification & Registration by Year



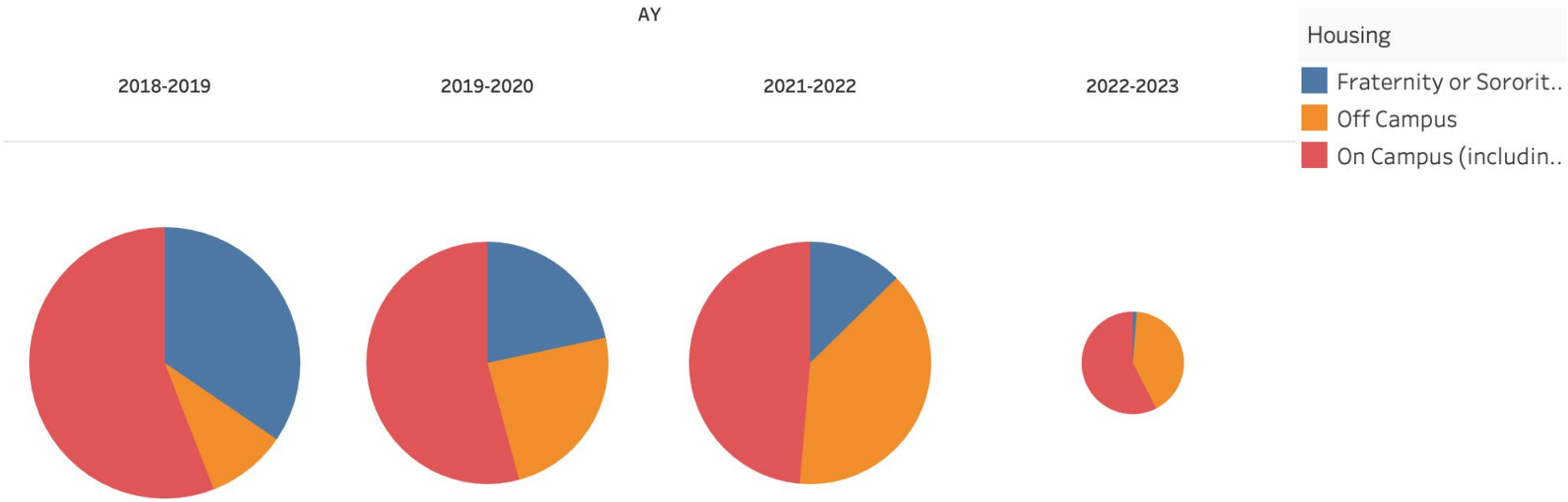



# 5.75%

Of all forms were from ‘red flags’
That’s exactly 375 unique people out of 6522!

# Housing

# Responses based on housing per year



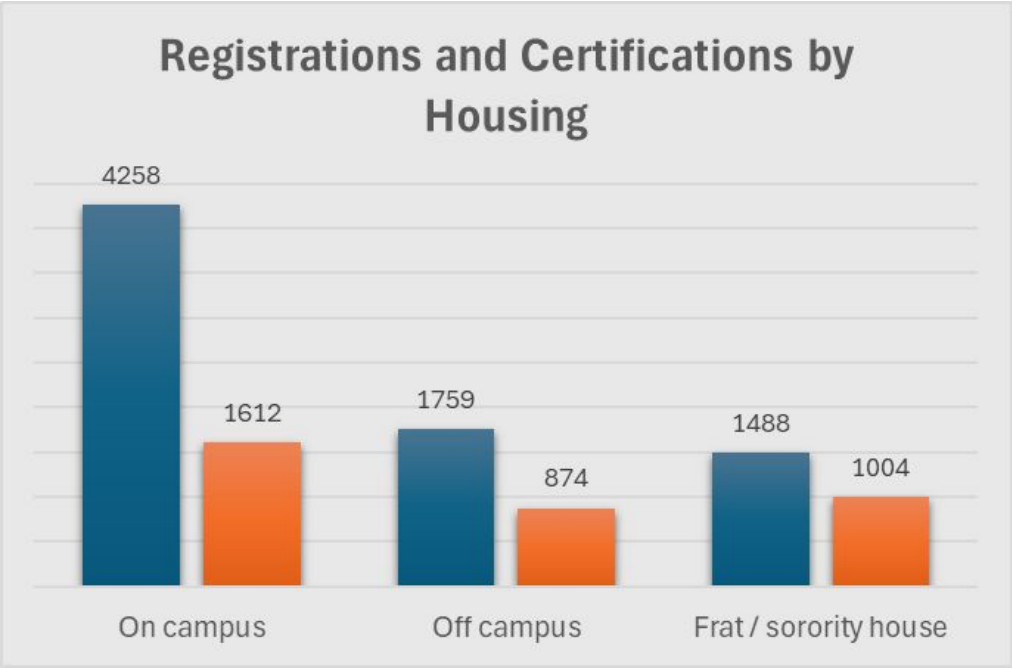
# Registration and Certification by Housing

Previous slide showed responses based on housing

After breaking the data up by registration and certification, I compared rates for each housing type

Percent of registered students who certified :

37.9% of on campus students
49.7% of off campus students
67.5% of fraternity / sorority house students



# Trends

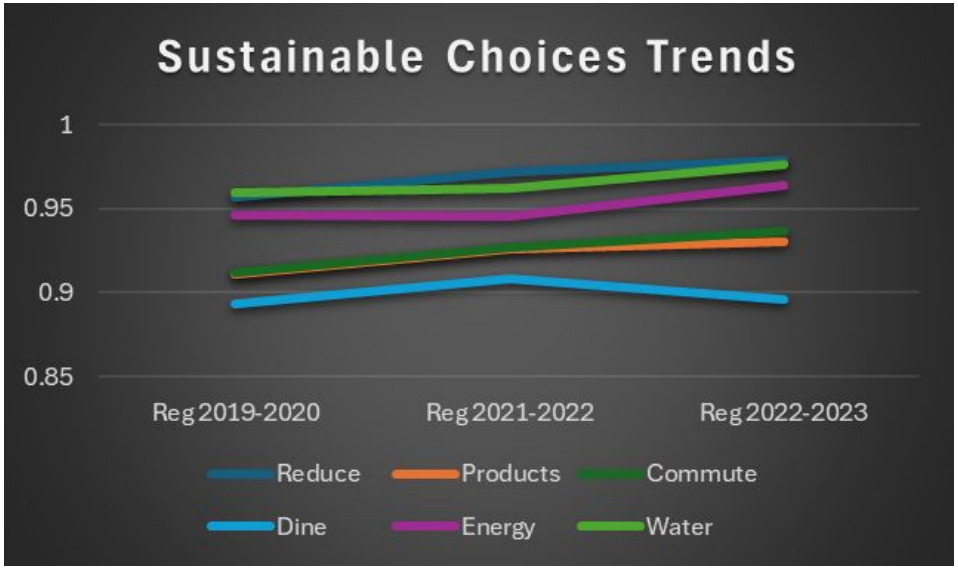
# Annual Trends

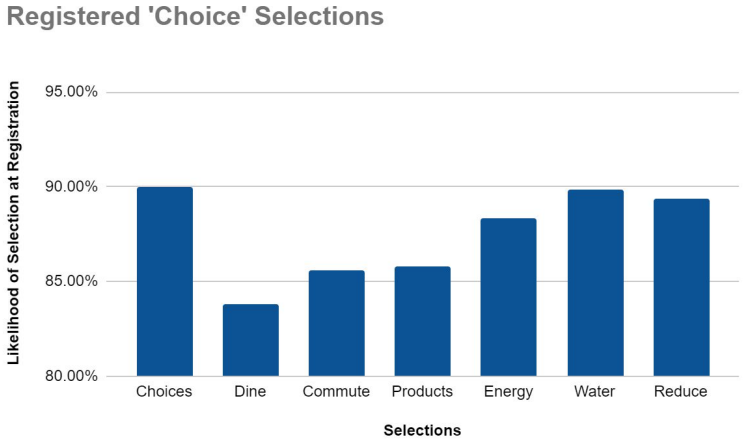
Broke dataset up by registration and certification then also by year

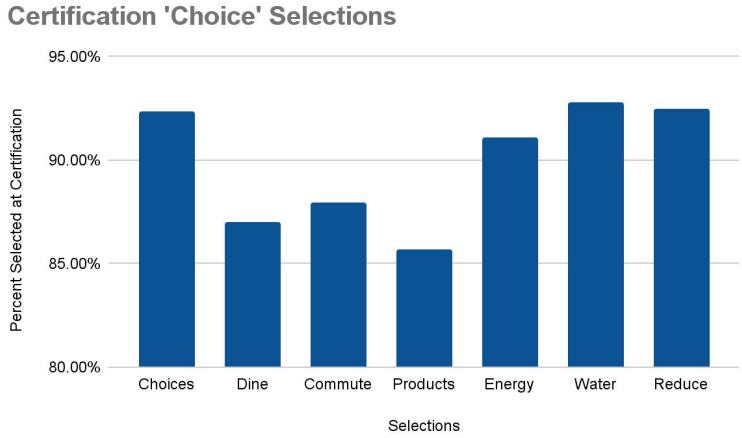
Looking at the percentage of registered students who selected yes for each choice

Missing a lot of annual data - this was the only three year stretch available

Hard to draw significant conclusions, but we can see which actions are most popular





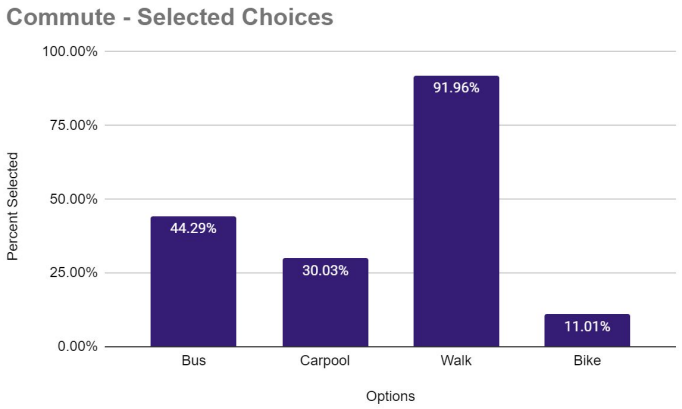

# Comparing Student 'Choices' Selection

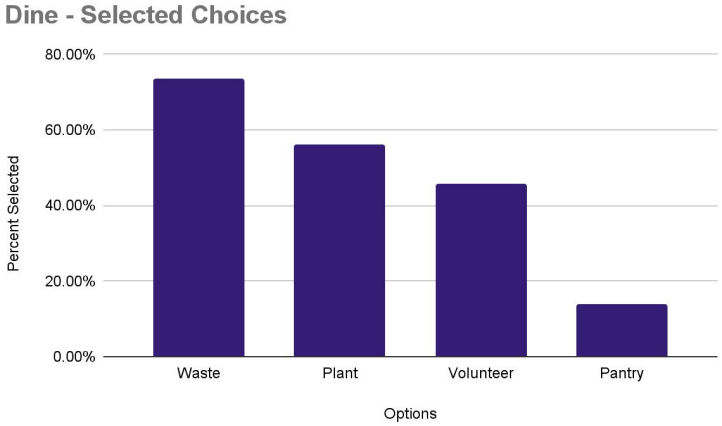
## *Of those who registered and of those who certified.*

Utilizing data from the 2019-2020 academic year, we compare the student selection of choices at registration and at certification. The goal of this analysis is to understand if students are conducting the behaviors they selected at registration when they are certified.

Conclusions:

- More 'choices' are selected at certification.
- Student follow a similar pattern for the selection of 'choices.'
- Dine and commute are the most challenging selections for students.




# Understanding Student 'Choices' Selection

***The most challenging behaviors for students - commute and dine.***

Conclusions:

- It is hard to change commuting patterns of those not in a walking vicinity.
- Implementing more walking is the most popular commute lifestyle choice to be selected by students.
- Implementing plant based meals and reducing waste are the easiest ways to students to change their dining habits.

# Conclusion - Inferences from Data

Solution are based on what Green Terp really wants, we can only advise based on the data. [External factors aside]

| If they want | We Advise (Based Off Data) |
|---|---|
| More registered members | Freshman centered events (slide 10)<br>On-campus promotions (slide 14) |
| More legitimate certified members | Partnering with Greek Life (slide 14)<br>Push for Freshman & Sophomore Certification (slide 10)<br>Focus on certain choice selections for certifying (slide 18) |
| More awareness about the environment | Host events based on popular choices (slide 17 & 18)<br>Focus engagement towards upperclassmen (slide 10) |

# THANKS!

**Please take a look the Github Repository for the behind-the-scenes technical + statistical work!**

**A full report in the format of a Jupyter Notebook will be published soon**

**https://tinyurl.com/2024team57**

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