Students make a stu-DENT by Volunteering

Measuring Volunteering Impact on Students

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Agenda

1. Introduction
2. Variables
3. Data Cleaning/Visualization
4. Analysis
5. Conclusion/Recommendations

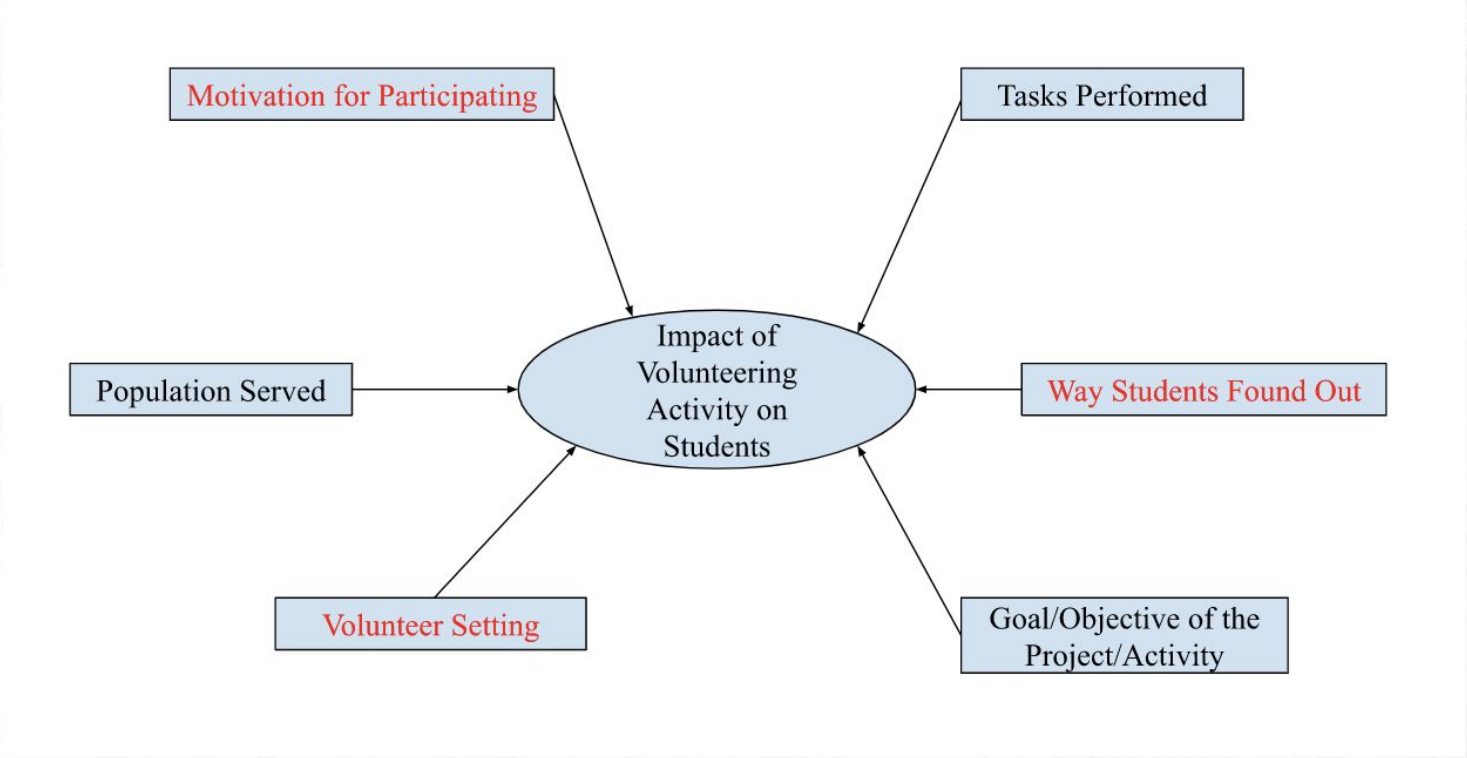
Introduction

- Survey taken by UCLA students
- Describe one volunteer activity they pursued during the 22-23 academic year

We wanted to answer 2 questions:

1. How did volunteering impact students
2. Is impact related to motivation, how student found out about the volunteer opportunity, setting, and population served

Variables


Motivation for Participating
Tasks Performed
Impact of Volunteering Activity on Students
Population Served
Way Students Found Out
Volunteer Setting
Goal/Objective of the Project/Activity

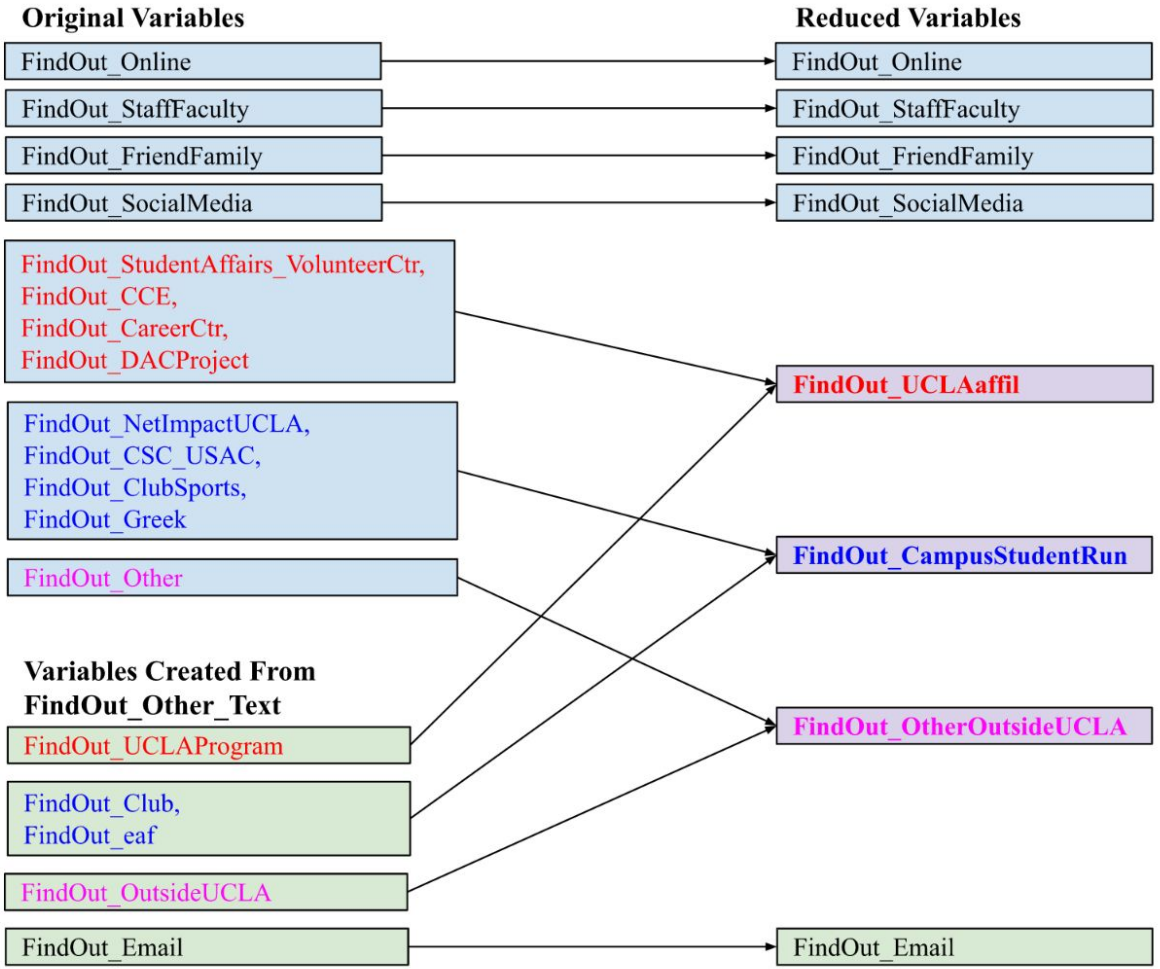
Data Cleaning/Visualizations

Data Cleaning and EDA

1. Creating New Categories
    a. Many respondents chose Other in response to questions about the setting of their volunteer activity, their motive for volunteering, how they found out about it, etc. Those who chose other were given the option to explain why. From these text explanations we created new variables from commonly recurring explanations. We were able to remove individuals from the Other category and place them in these new categories.
2. Re-coding “Other”
    a. We also removed individuals from Other and placed them in already existing categories if we felt their written explanation for why they chose other better matched one of the provided options
3. Variable/Category Reduction
    a. Often respondents were allowed to choose from many different options for variables such as setting or find out. There were lots of categories and several options would only have a few people who had selected that option. Therefore it seemed prudent to reduce the number of categories by grouping some of them together based on their similarities and differences.

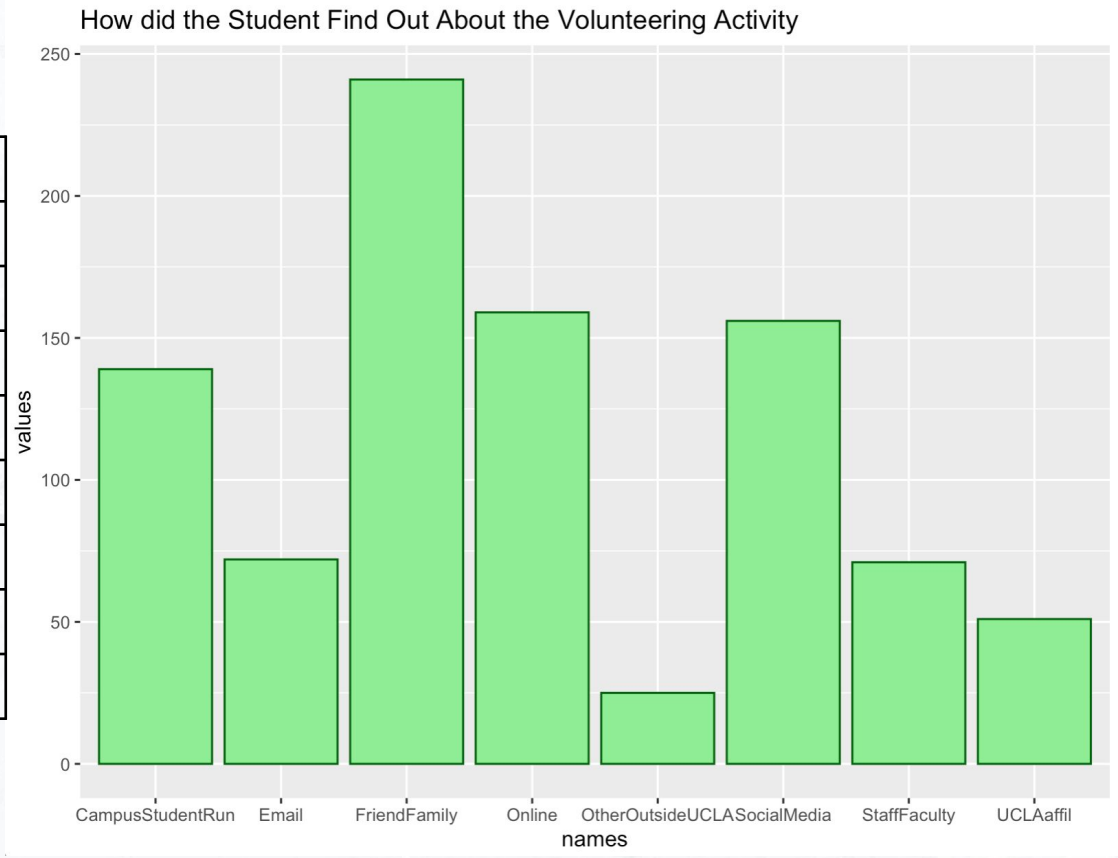
Find Out

How did you find out about the opportunity?

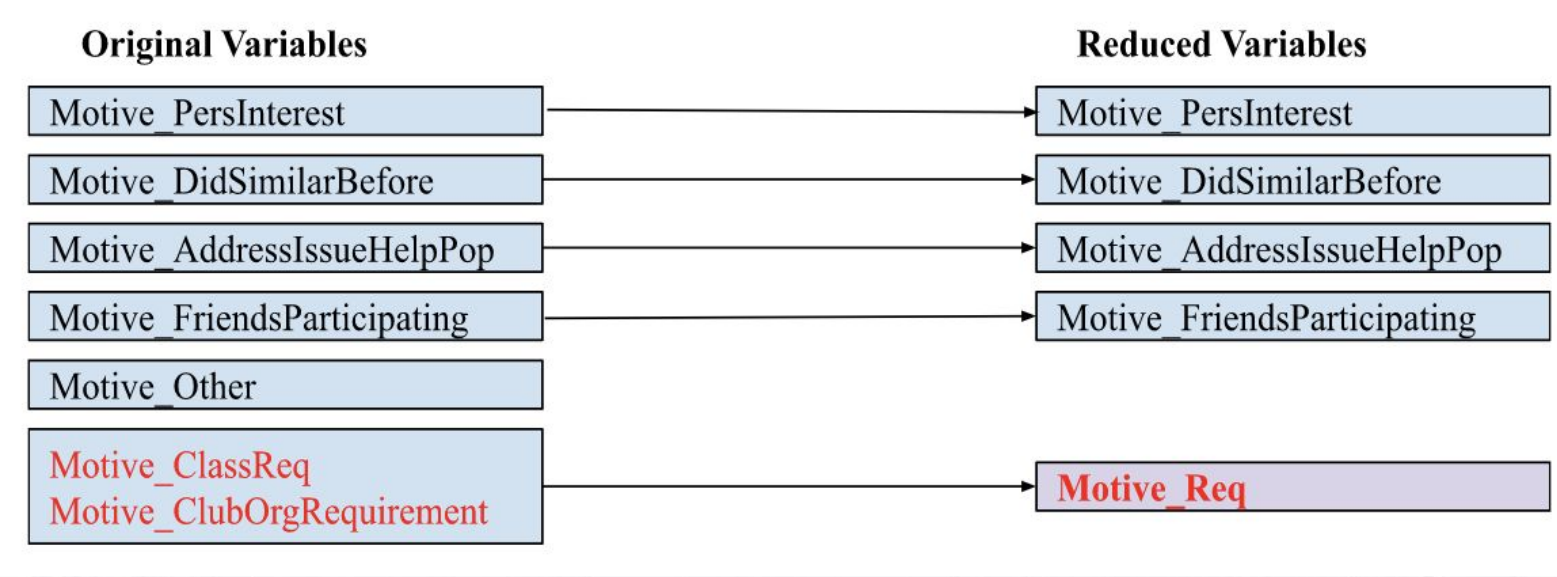


Find Out

Variable	Count
Office	61
Hospital	110
K12Schools	127
GovtBldg	99
Outdoors	208
MyResidence	86
UCLA	40
OtherOutsideUCLA	62

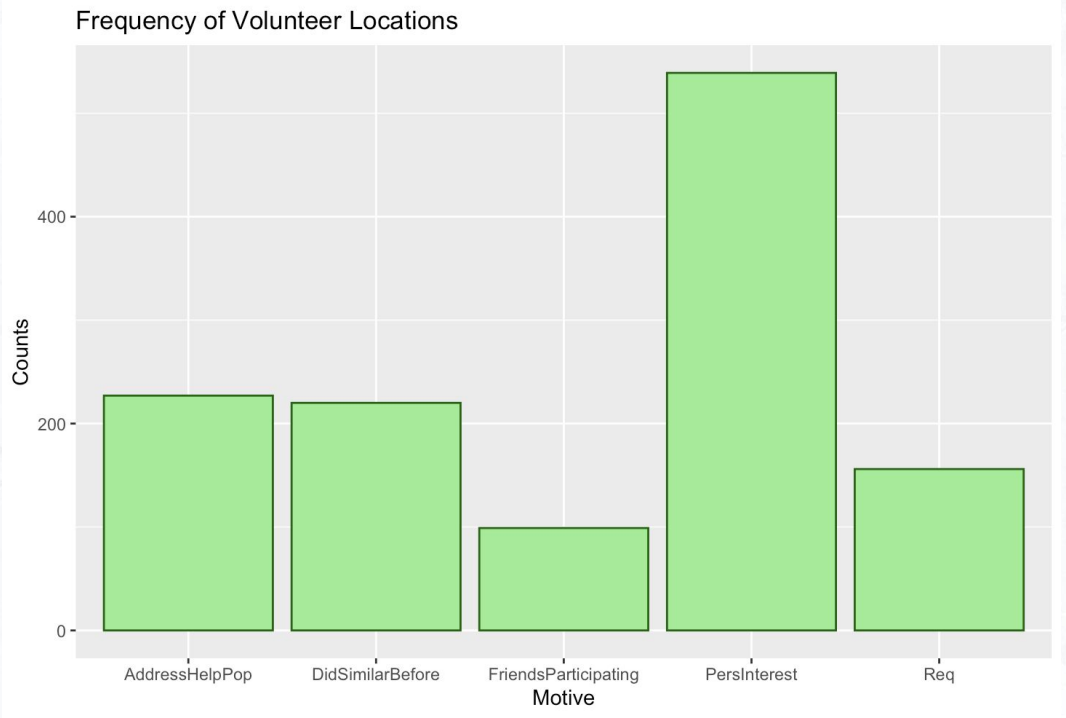


Motive

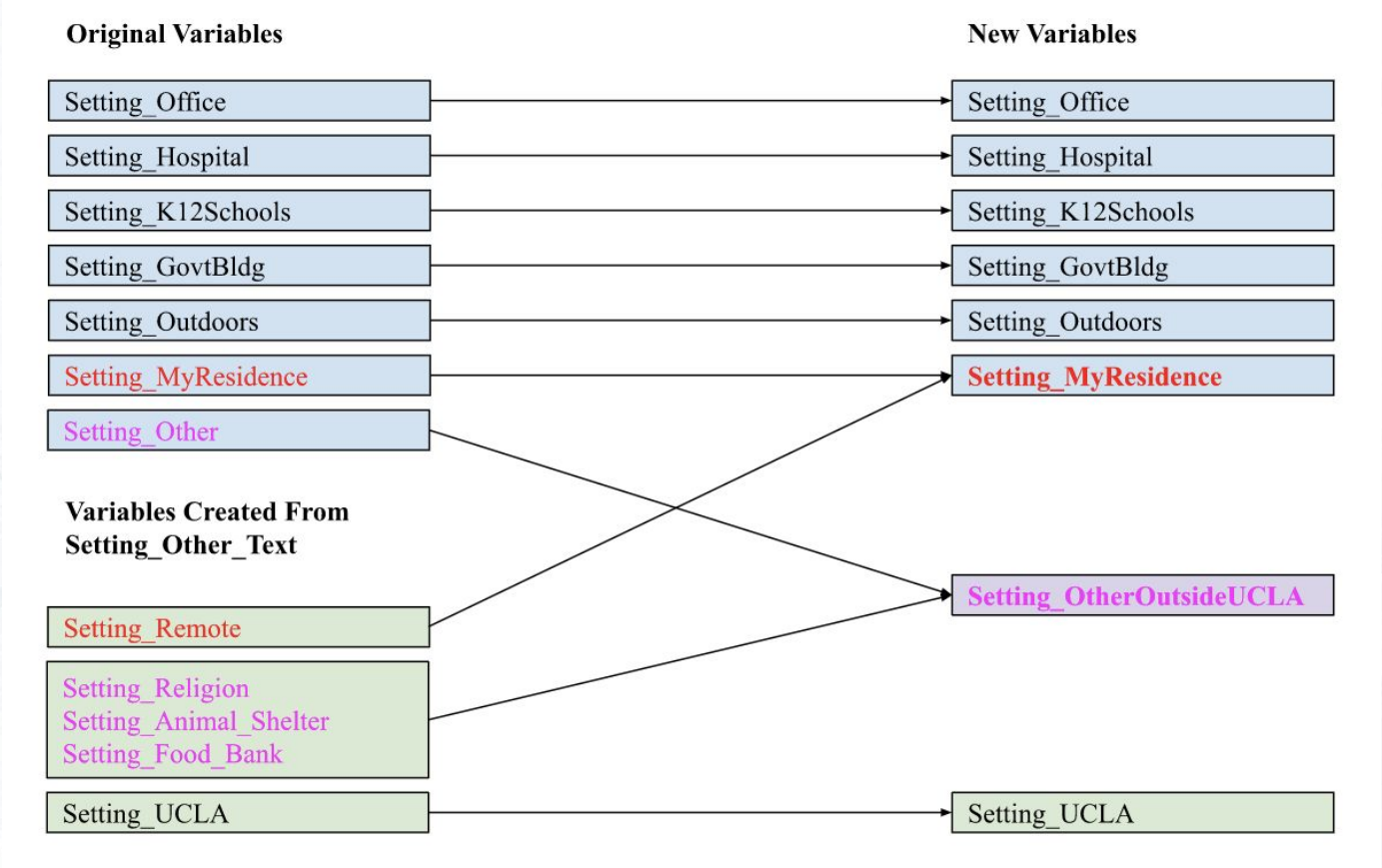

Original Variables
Reduced Variables
Motive_PersInterest
Motive_DidSimilarBefore
Motive_AddressIssueHelpPop
Motive_FriendsParticipating
Motive_Other
Motive_ClassReq
Motive_ClubOrgRequirement
Motive_PersInterest
Motive_DidSimilarBefore
Motive_AddressIssueHelpPop
Motive_FriendsParticipating
Motive_Req

Motive

Variable	Count
PersInterest	539
DidSimilarBefore	220
AddressIssueHelpPop	227
FriendsParticipating	99
Requirement	156



Setting


Original Variables
New Variables
Setting_Office
Setting_Hospital
Setting_K12Schools
Setting_GovtBldg
Setting_Outdoors
Setting_MyResidence
Setting_Other
Variables Created From Setting_Other_Text
Setting_Remote
Setting_Religion
Setting_Animal_Shelter
Setting_Food_Bank
Setting_UCLA
Setting_Office
Setting_Hospital
Setting_K12Schools
Setting_GovtBldg
Setting_Outdoors
Setting_MyResidence
Setting_OtherOutsideUCLA
Setting_UCLA

Setting

Variable	Count
Office	61
Hospital	110
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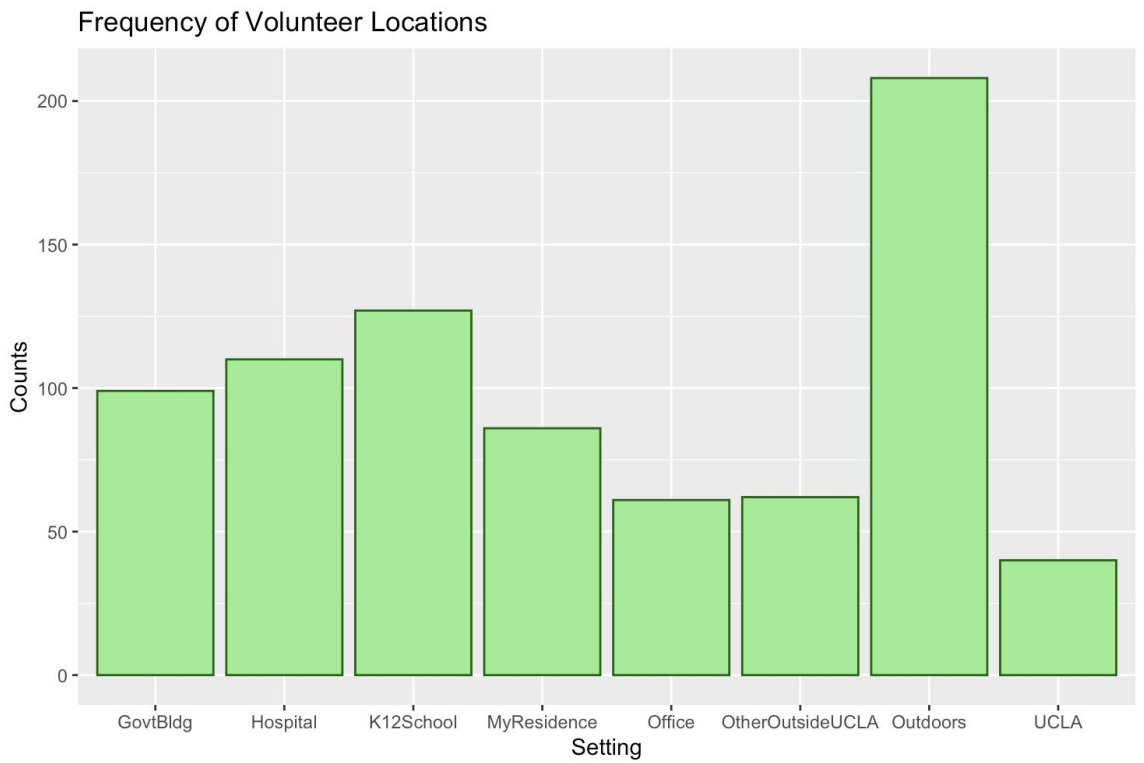
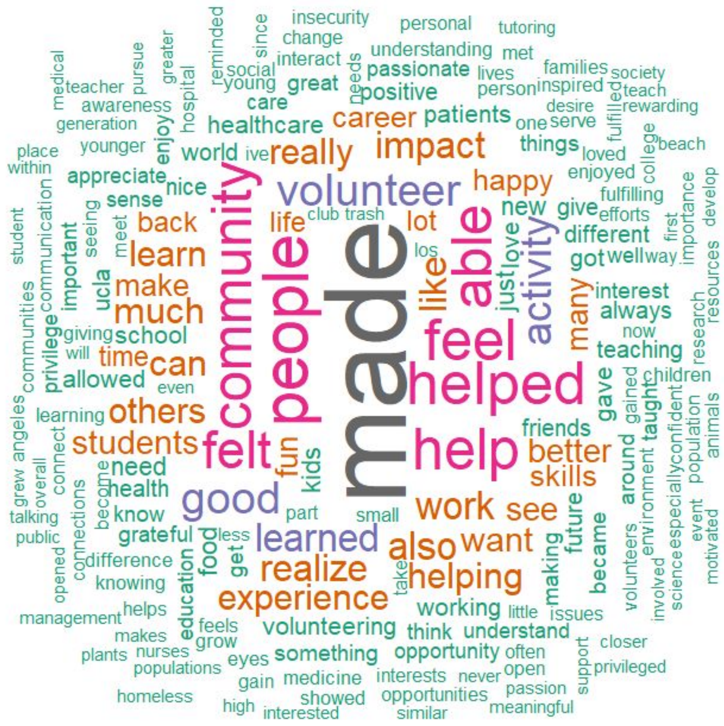
OtherOutsideUCLA	62

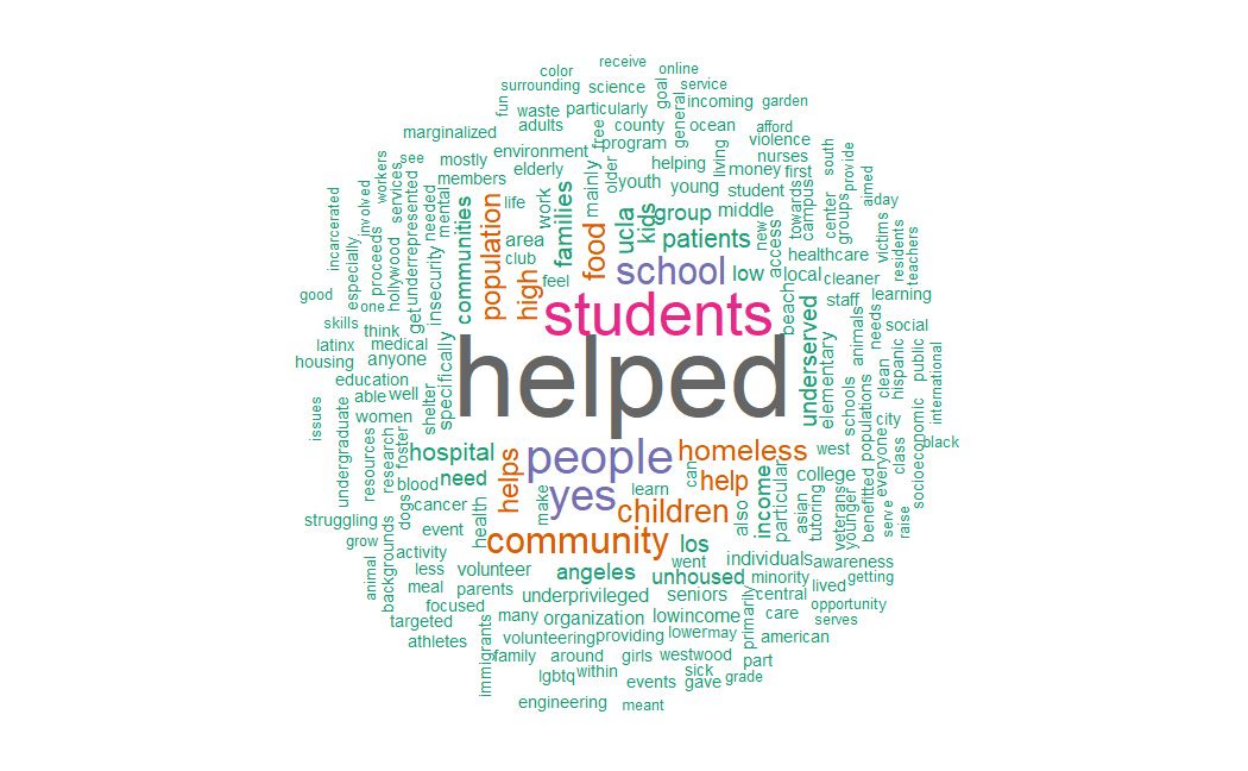


Word Clouds - Impact



Word Clouds - Tasks Undertaken

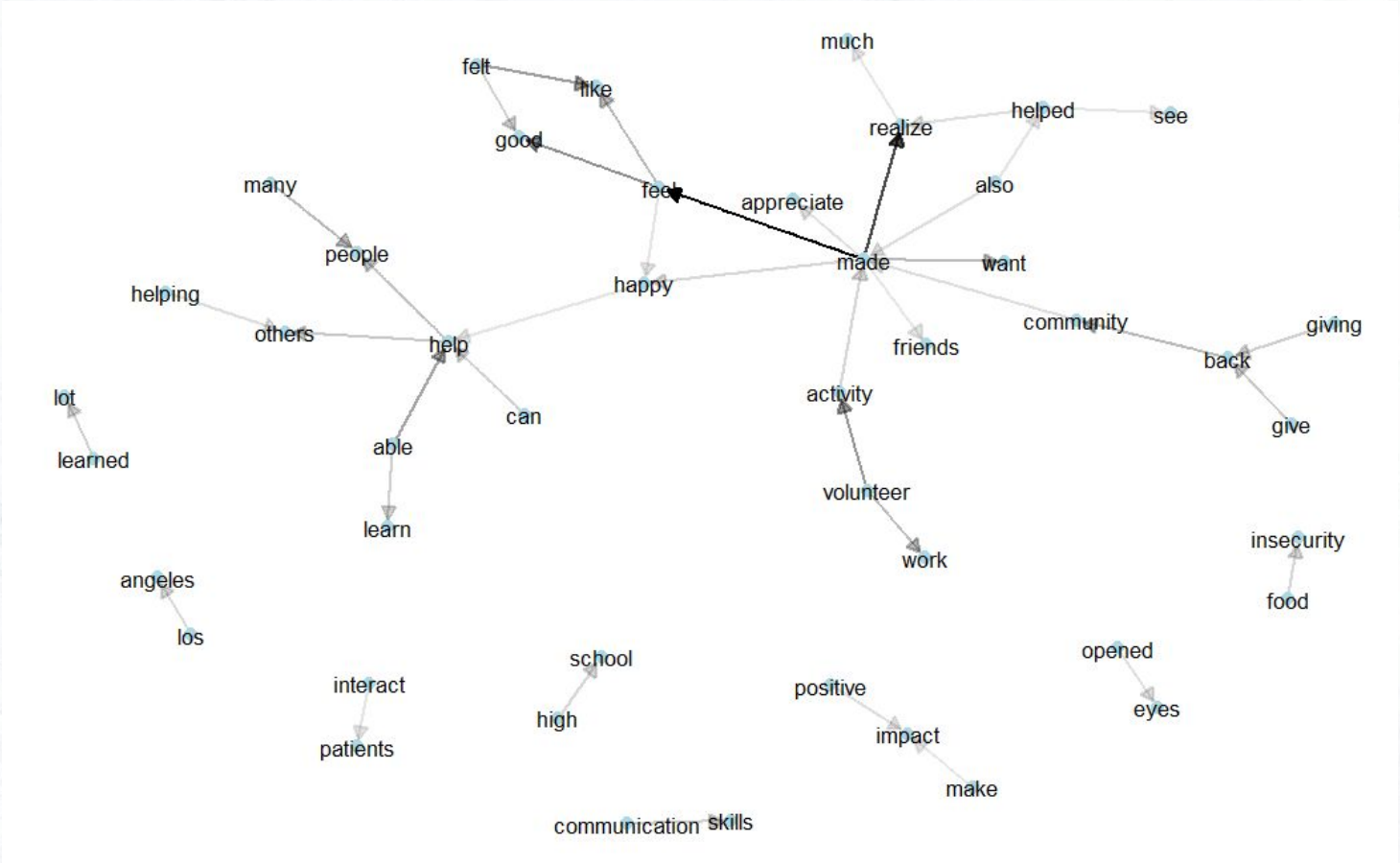
Word Clouds - Population Helped



Word Clouds - Goals/Outcomes Achieved

Text Analysis

Directed Graph of Bi-Grams



How volunteering made students “feel”

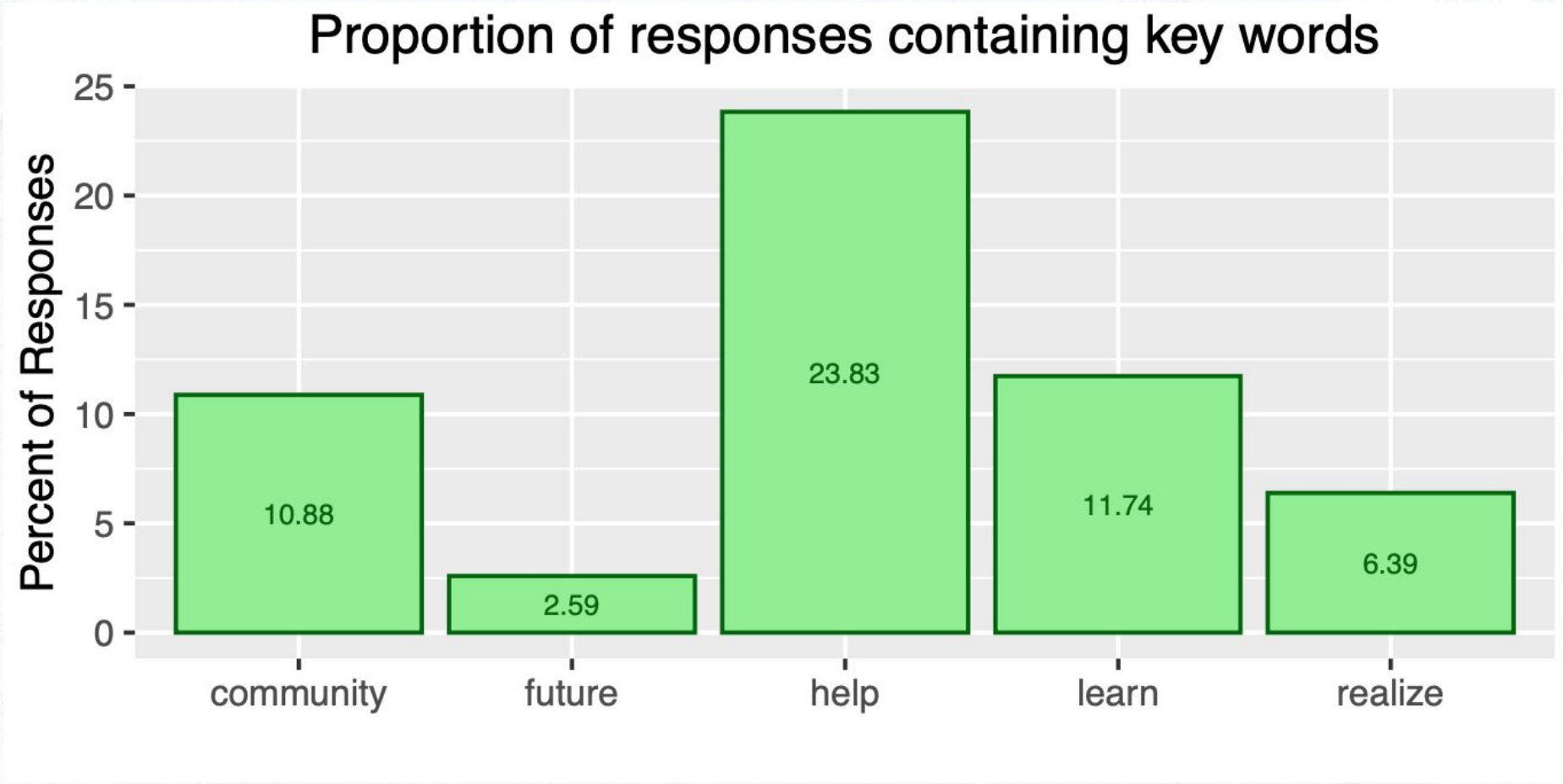
Word cloud of words used most often by students directly after “feel” or “feels” in impactOnYou_text

Most students felt “good” or “happy” while volunteering, indicating a positive impact on students.

Tri-gram analysis

Word	Frequency	Example
realize	37	"It has made me **realize** that I love mentoring younger students from similar backgrounds as myself."
help	138	1. "It **help**ed me decide my career." 2. "It feels nice to encourage students who are also first-gen and to **help** them pave their path at UCLA."
learn	68	"I l**earn**ed a lot about hospital work and heard medical terms thrown around and was able to learn through that"
future	15	"It made me much more open to volunteer work in the **future**"
community	63	"It made me realize how privileged I am and that I will always want to give back to my **community** and those who have less than me."

When looking at tri-grams we see key words emerge


Proportion of responses containing key words
Percent of Responses
25
20
15
10
5
0
10.88
2.59
23.83
11.74
6.39
community
future
help
learn
realize

How Students Used Keywords

Realize/Learn: students were discussing something new they found out either about themselves or about the work they were doing.

Future: students discussed how volunteering impacted their future plans either as volunteers or in their careers.

Community: students emphasized how it was a positive experience to give back to *their* community.

Helped: students used help either in the context of how it helped them (ex. recognize privilege) or how it felt to help others.

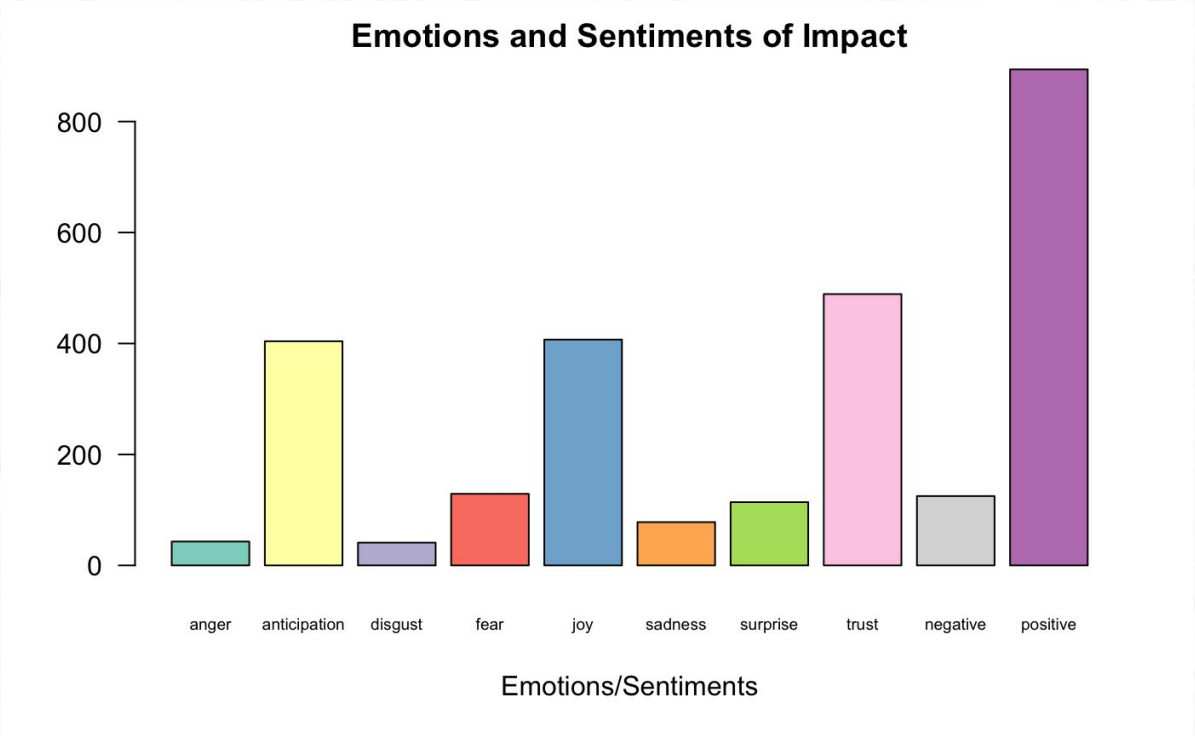
Volunteering made student feel good, helped shape their future plans, and helped students learn or realize something new.

Sentiment Analysis

General Analysis of ImpactOnYou_Text

- Performed analysis using NRC lexicon

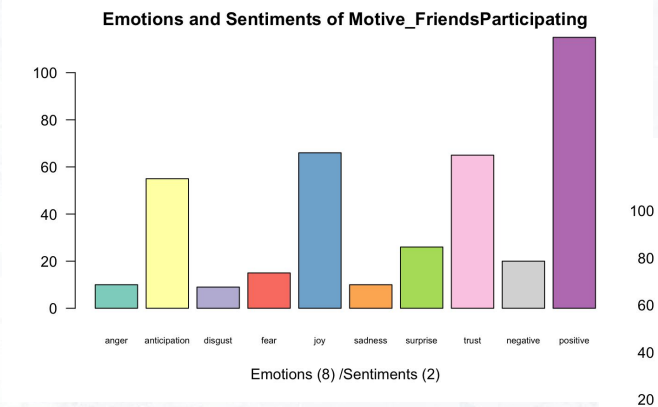
- In general, volunteering seems to be a positive experience for students

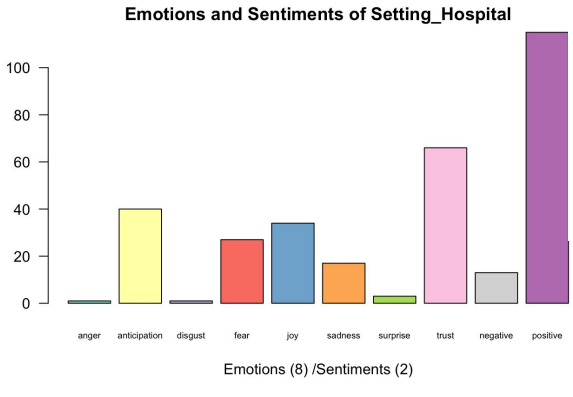


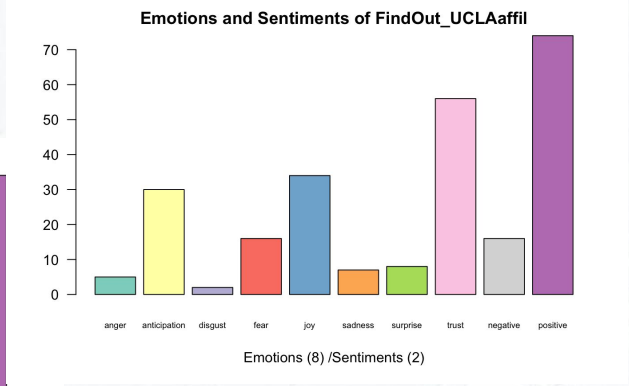
Analysis of ImpactOnYou_Text in Categories

- Split into new data frames based on motive, setting, and how the students found out about the volunteering activity (find out)

- In general, all 21 data frames follow the same trend, with a few small differences in some graphs







Sentiment Analysis Concerns

- Sentiments of individual words are counted and not the overall sentiment of a single row/response
    - Possible that there are more overall negative experiences, but since more positive words are used, then the overall experience is reflected as positive during sentiment analysis
- Words being measured in the lexicon do not take the context of the word into account
    - Positive words used in a negative context will be wrongly classified as positive, and vice versa
    - “I was able to understand homeless people and got more interested in solving homeless problems”
        - “homeless” is considered a word with a negative sentiment by the NRC lexicon
- Manually reading through the data does show that for the most part, the sentiment analysis we ran was accurate

ANOVA

- For our analysis we made the assumption that students who were more greatly impacted by their volunteer activity would write *more* in the ImpactOnYou_Text category

- For our analysis we wanted to use an ANOVA (analysis of variance test) to see if there was a significant difference in means across groups

- However, one issue we ran into was that ANOVA assume independent observations and because students could select more than one category, we could not assume independence

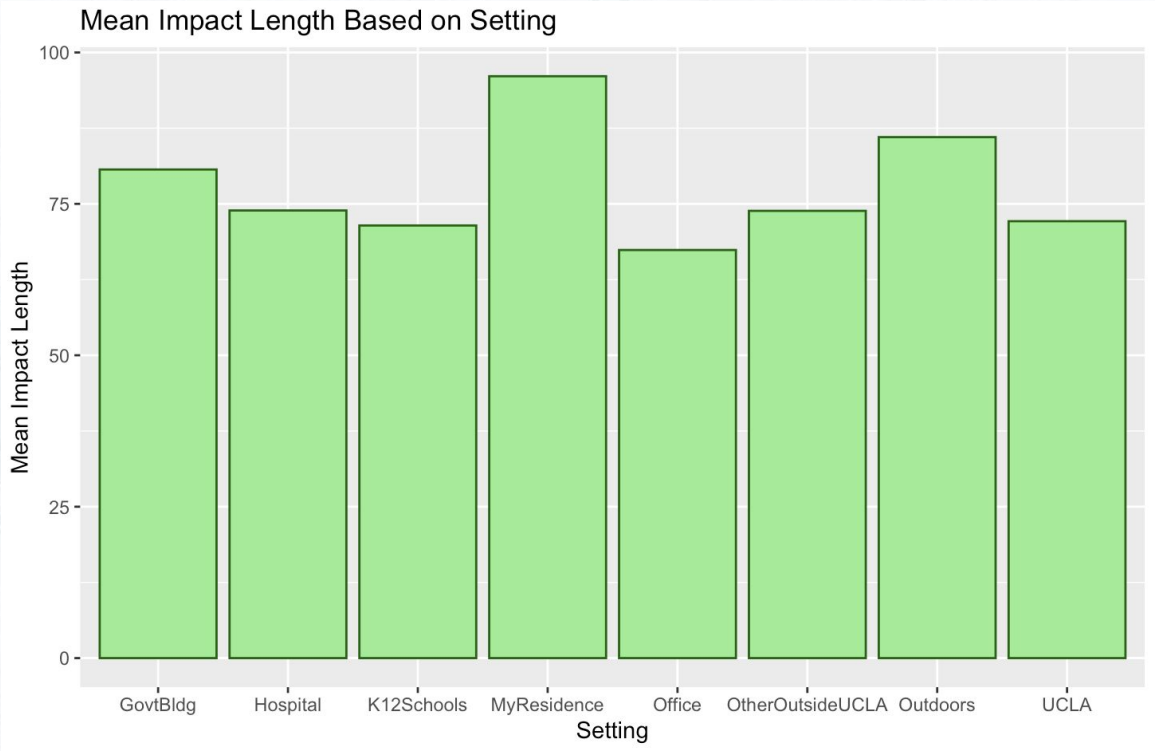
- As the best way to work around this, we decided to remove students who selected more than one option for the setting and findout variables because they made up a smaller portion of total responses. However, this would not work for motive

- This means our results for setting and findout are only for those who selected one option and may not be generalizable to the whole population.

- Instead, for motive we decided to see if there was a relationship between length of ImpactOnYou_text and the number of motivations selected

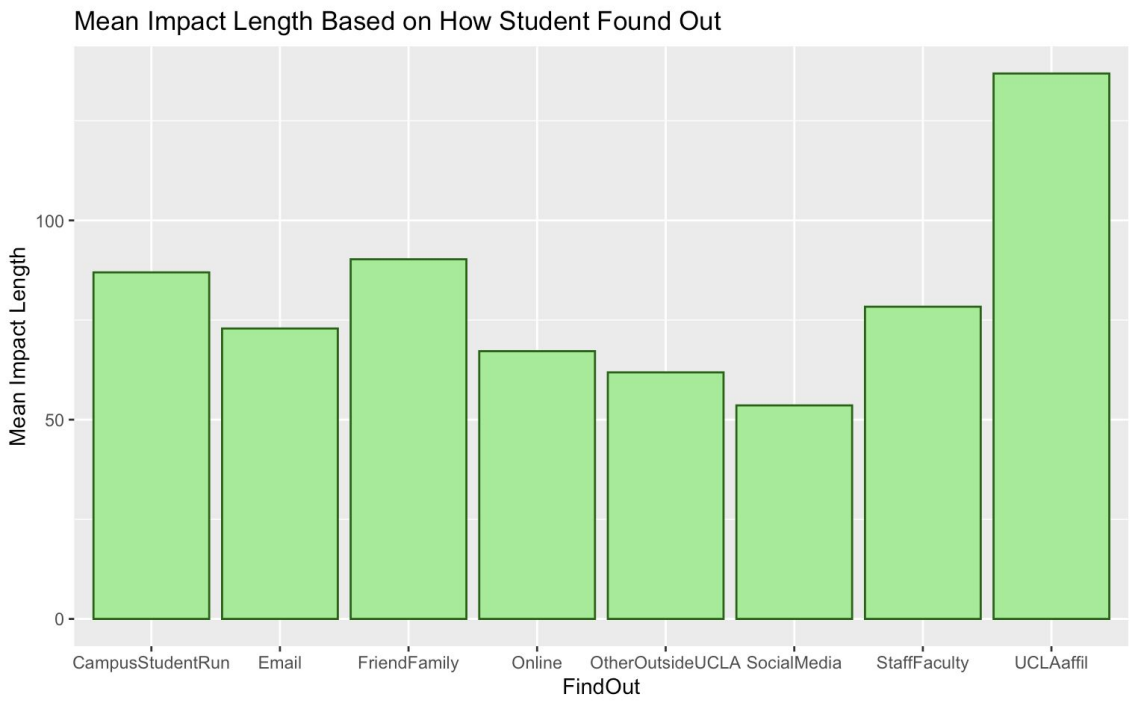
ANOVA Results: between length of "ImpactOnYou" and "Setting"

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Setting	7	44794	6399	0.993	0.435
Residuals	620	3994623	6443		



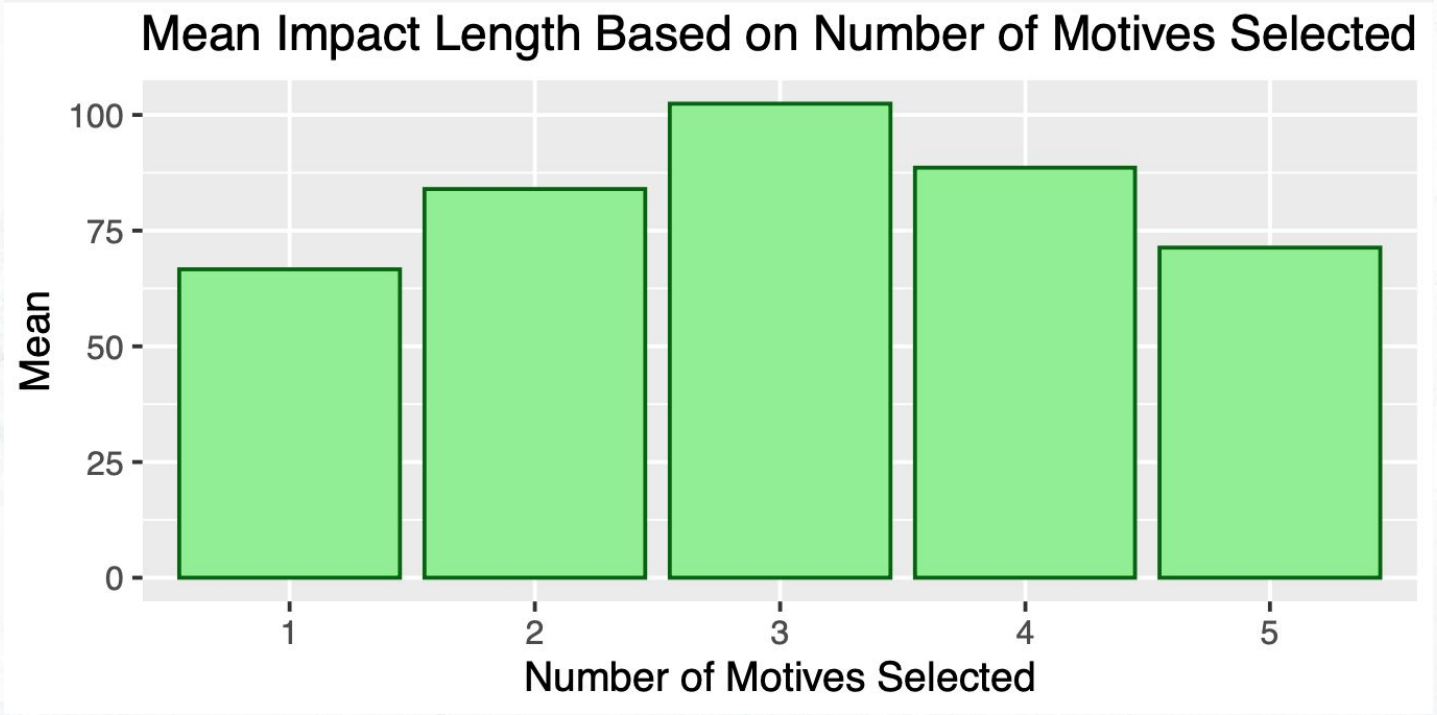
ANOVA Results: between length of "ImpactOnYou" and "FindOut"

	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
FindOut	7	163295	23328	3.728	0.000593	***
Residuals	544	3404506	6258			



ANOVA Results: between length of "ImpactOnYou" and Motive"

	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
as.factor(impact.length)	204	4405105	21594	2.835e+28	<2e-16	***
Residuals	502	0	0			



Conclusions

From text analysis

1. Impact related to population served
2. Students felt good/happy
3. Learned something new
4. Helped make decisions for future

From sentiment analysis

1. Positive experience
2. Trust, joy, anticipation

From ANOVA

1. Significant: Motive, FindOut
2. Not significant: Setting

Recommendations

- Further NLP analysis (similarity and co-occurrence matrices)
- Further analysis on impact related to tasks performed and goal/objective
- Post-hoc analysis of ANOVA
- Revise format of survey
    - Difficult to do analysis such as ANOVA when students could select more than one category

THANK YOU! Any Questions?