

# BUILD A BETTER GRINNELL

**Natural Language Analysis of  
Build A Better Grinnell Survey Data**

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# INTRODUCTION

This project aims to analyze survey data collected by the Build a Better Grinnell initiative, a community-based effort focused on improving the quality of life in Grinnell, Iowa. The project involves utilizing natural language analysis techniques on the survey dataset to uncover insights that can help guide the initiative's efforts in economic development, community vitality, and environmental sustainability.





# DATASET

The dataset consists of 12 survey questions and 542 respondents, with each row representing a respondent and each column corresponding to a survey question. The questions cover various aspects of the community, such as economic development, community vitality, and environmental sustainability. The responses are provided in natural language, which requires the application of text analysis techniques to draw meaningful conclusions and insights from the data.

**USER GUIDE**

**EXEC. SUM.**

**TECH. REPORT**

Final Deliverable

Individual Question Analysis

Issue Analysis

Overall Survey Analysis

**Code Template**

**Code Template**

**Sentiment Rate Viz**

**Word Cloud**

**Word Frequency Charts**

**Sentiment Rate Sheet**

**Word Frequency Chart**

**Issue Clustering**

**Words After**

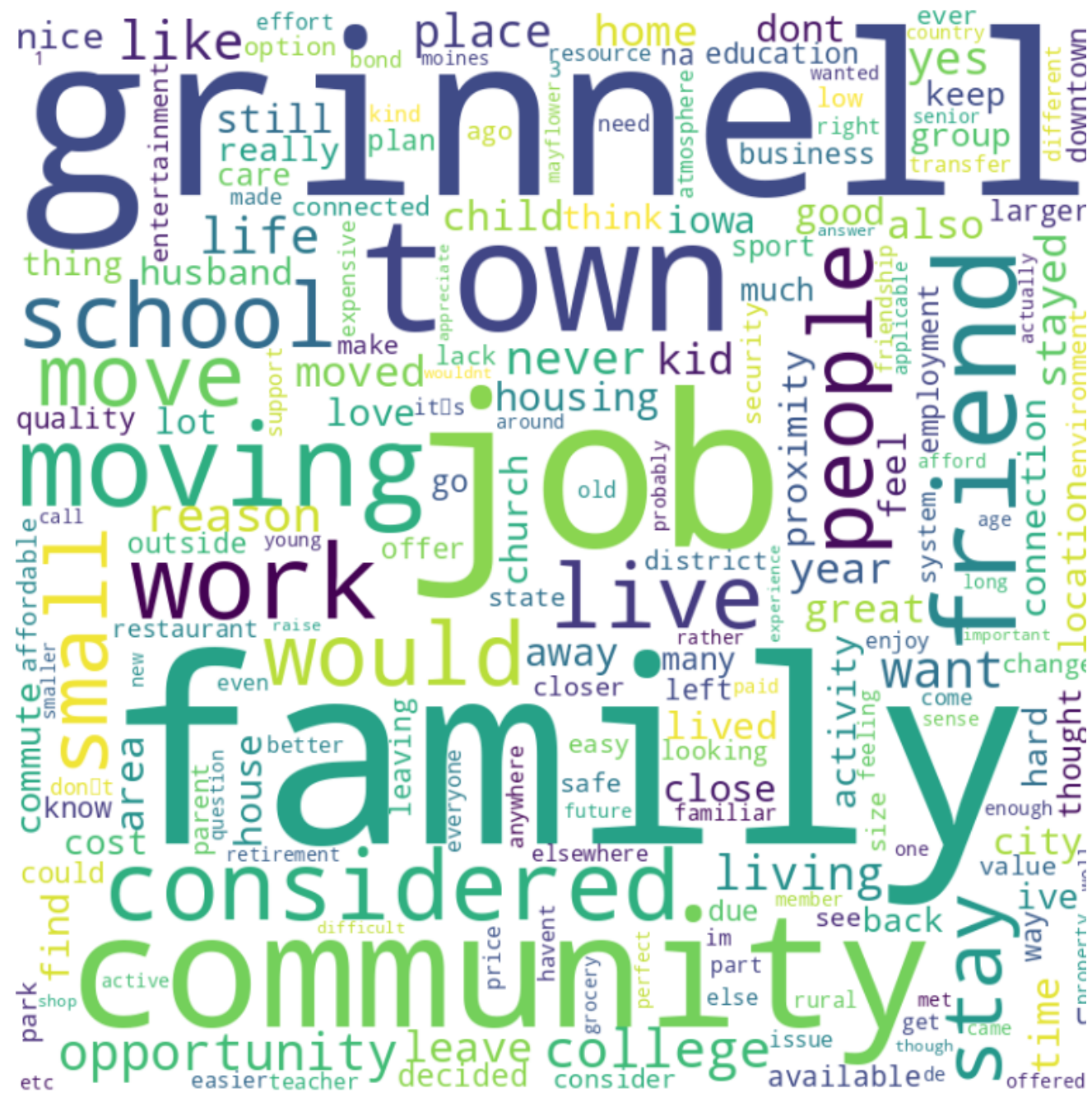
**Sentiment**

**Sentiment**

**Questions?**



# Framework

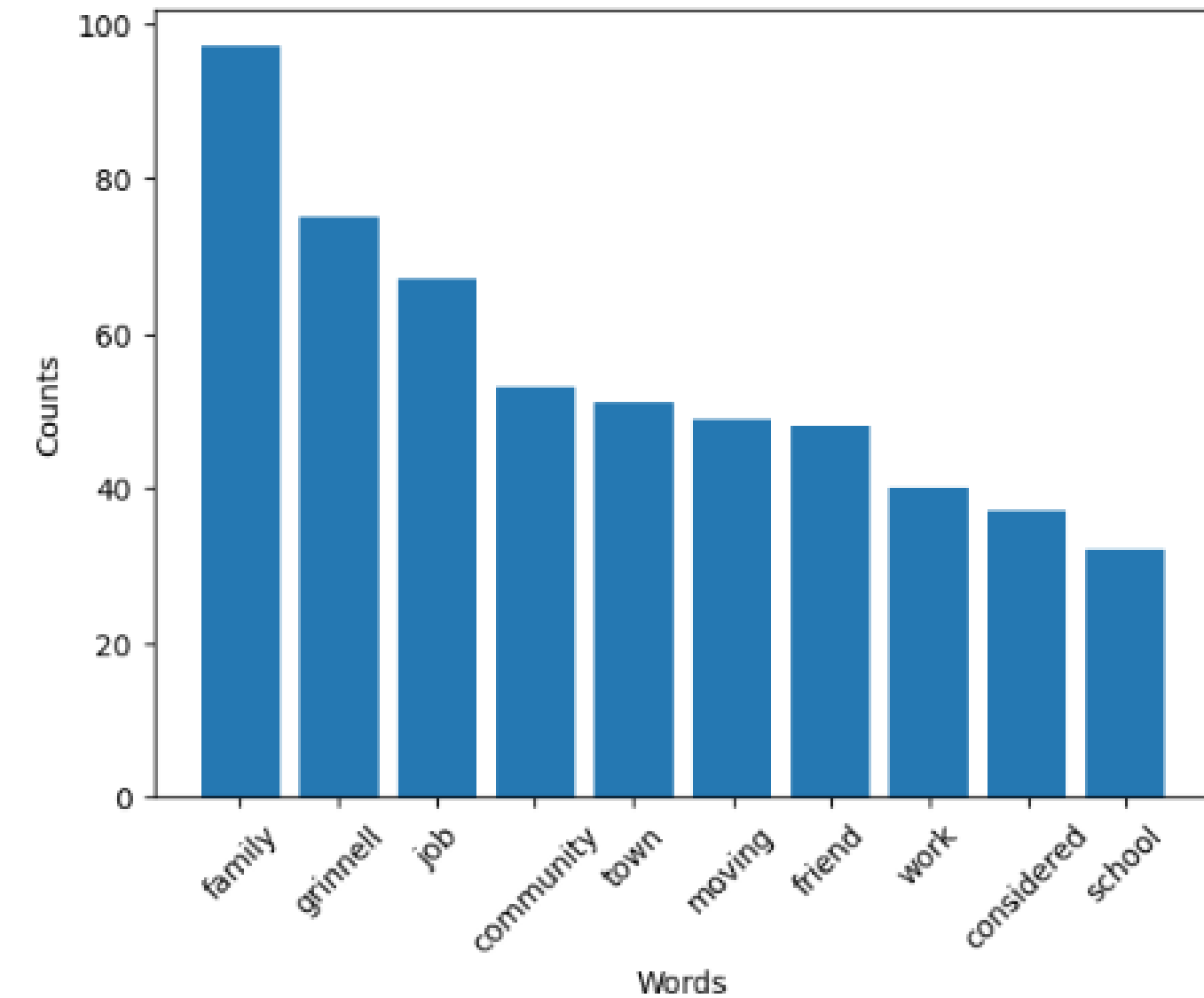


# WORD CLOUDS

QUESTION: If you have considered moving from Grinnell, what are reasons you decided to stay?

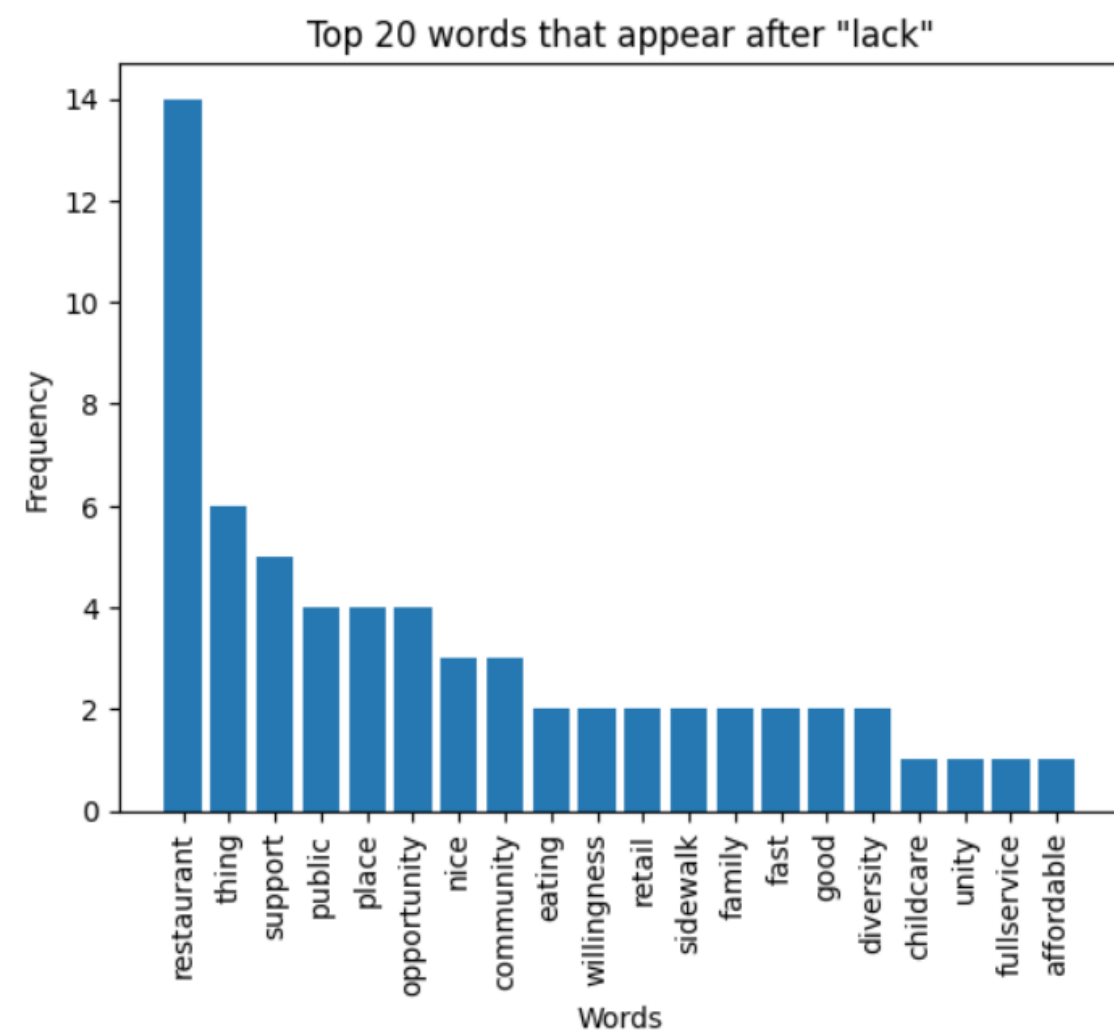
## WORD FREQUENCY PLOTS

QUESTION: If you have considered moving from Grinnell, what are reasons you decided to stay?



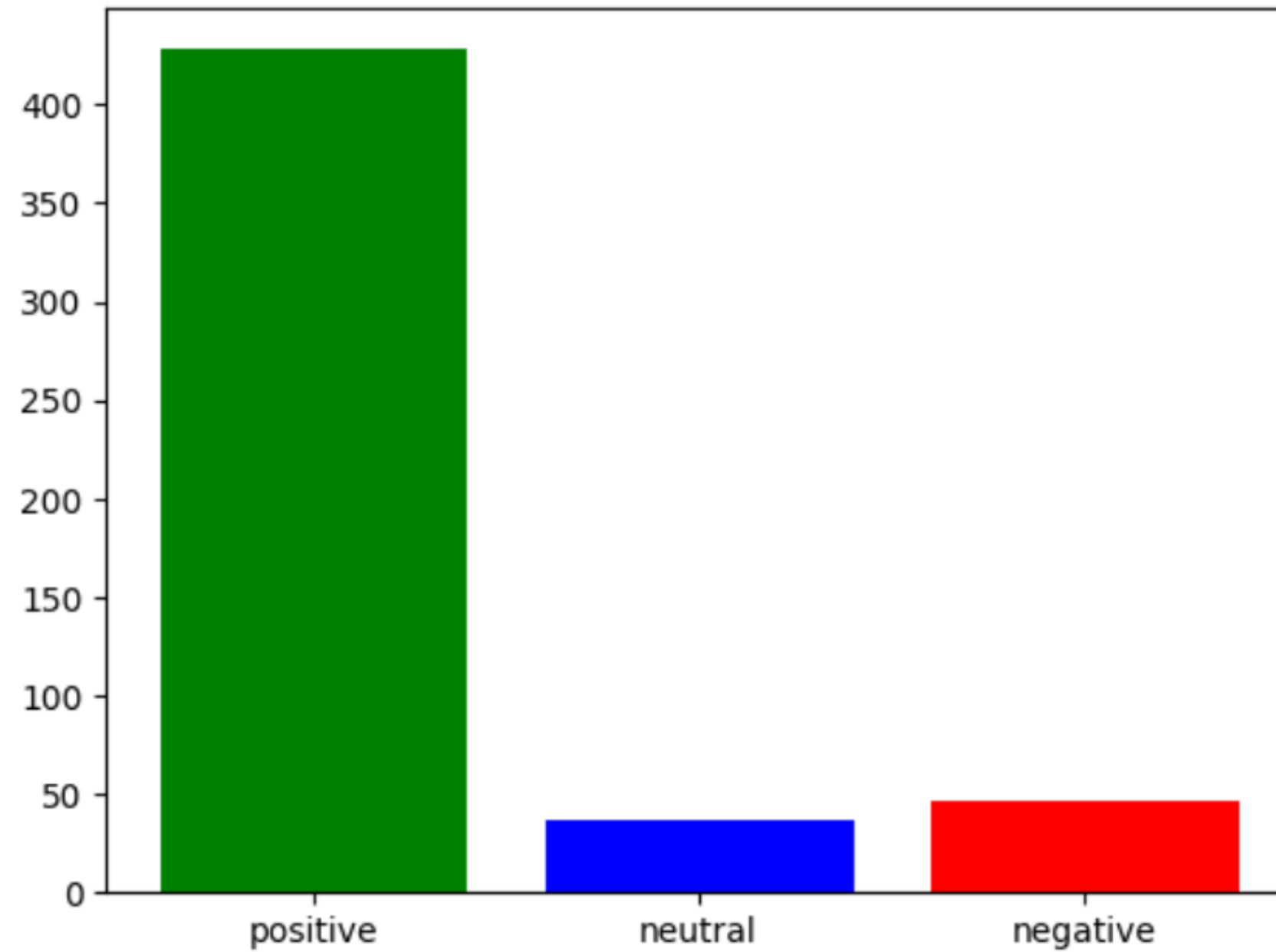
## WORDS AFTER

QUESTION: If you have considered moving from Grinnell, what are reasons you decided to stay?



	A	B	C
1	response/random number index	word1_aftercommunity	word2_aftercommunity
2	1	proximity	de
3	4	love	esthetic
4	5	partner	grinnell
5	6	size	small
6	10	event	like
7	11	prestige	college
8	12	perfect	size
9	15	many	varied
10	18	free	event
11	20	business	pleasure
12	22	big	enough
13	26	make	easy
14	28	safer	big
15	29	working	together
16	35	pride	engagement
17	38	sense	safetysecurity
18	40	spirit	recognizing

# Framework



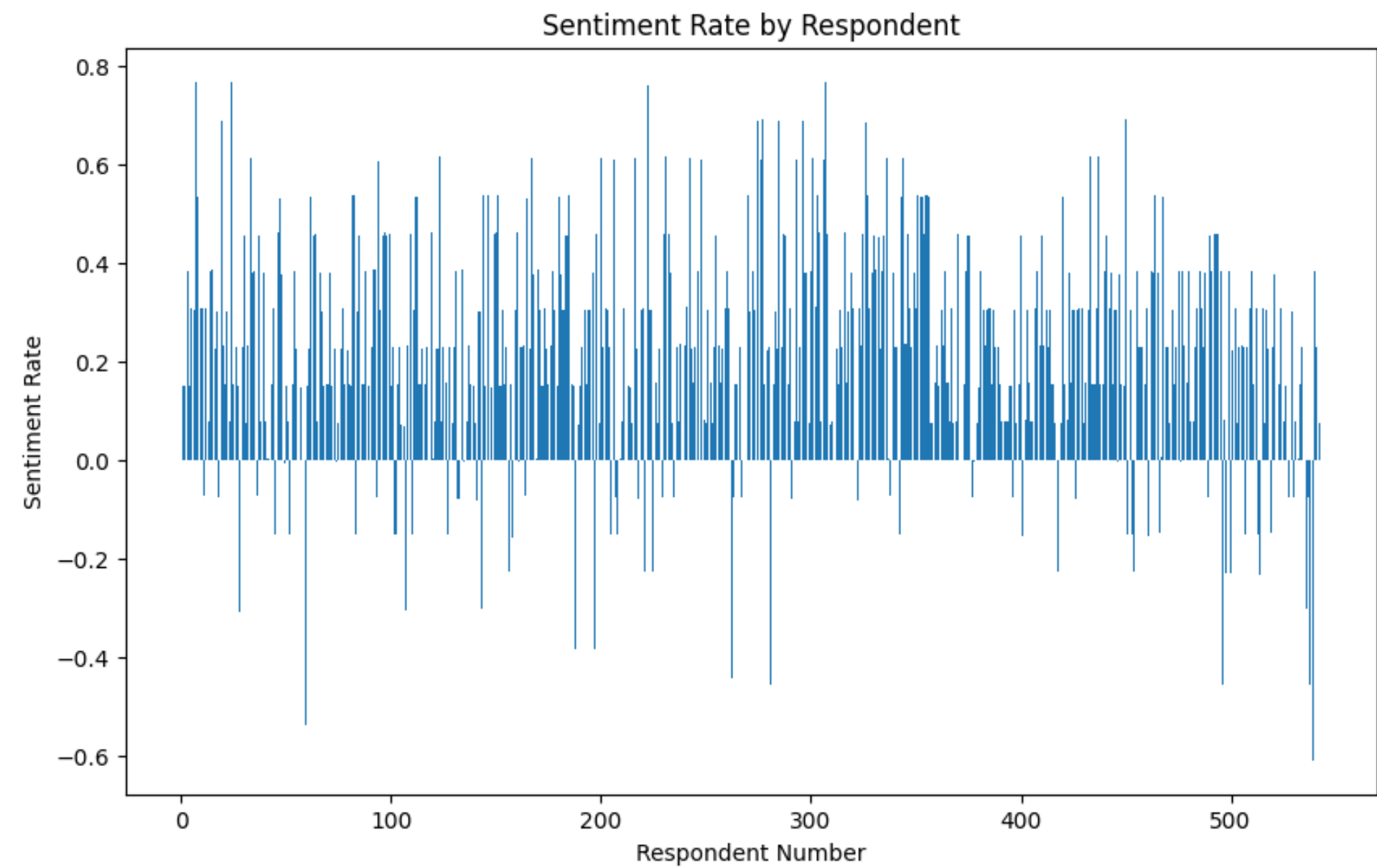
## SENTIMENT

Question 1: Numbers on how many people were positive, negative, or neutral in their responses.



# OVERALL ANALYSIS

Sentiment Rate by Respondent

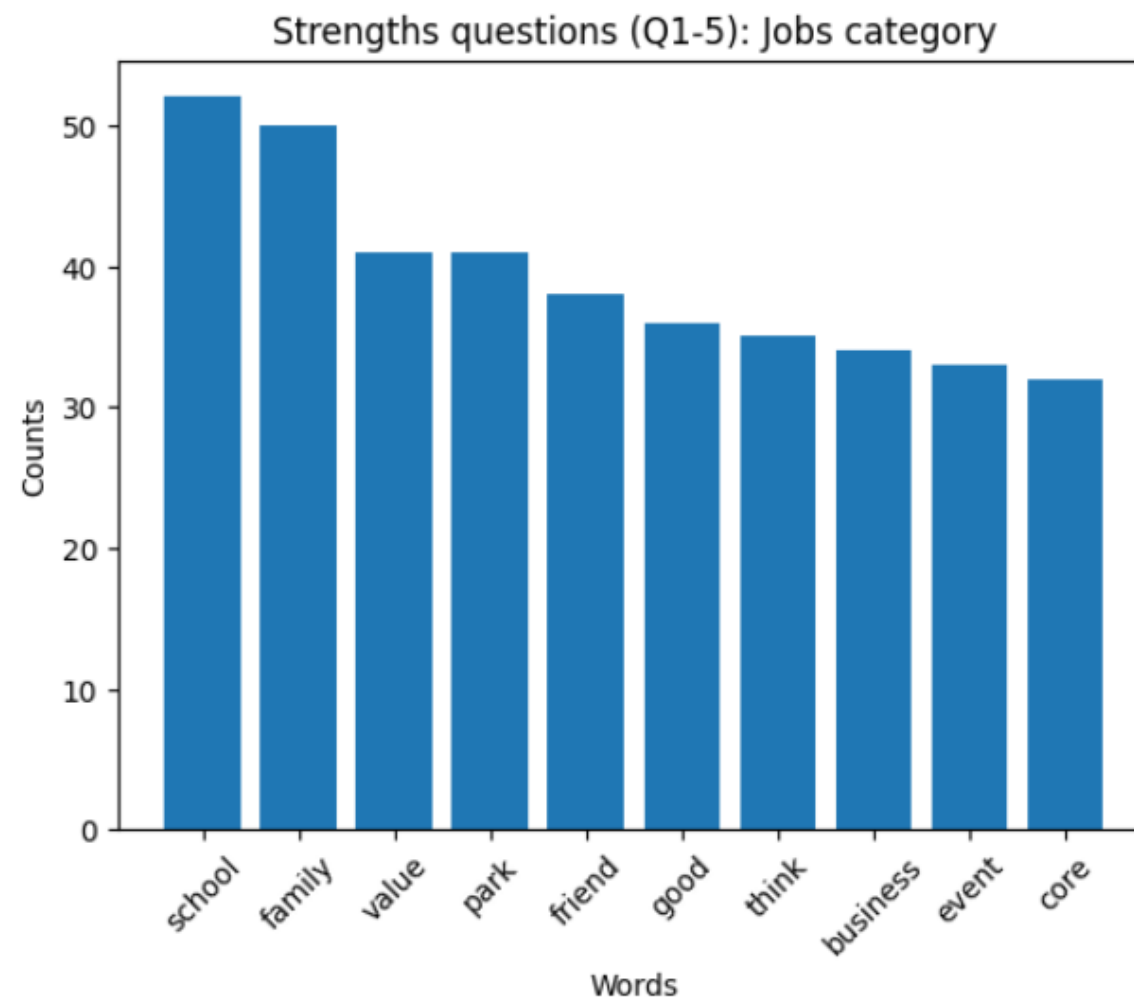




# WORD FREQUENCY

## What are "JOBS" respondents saying in Q1-5?

# Framework

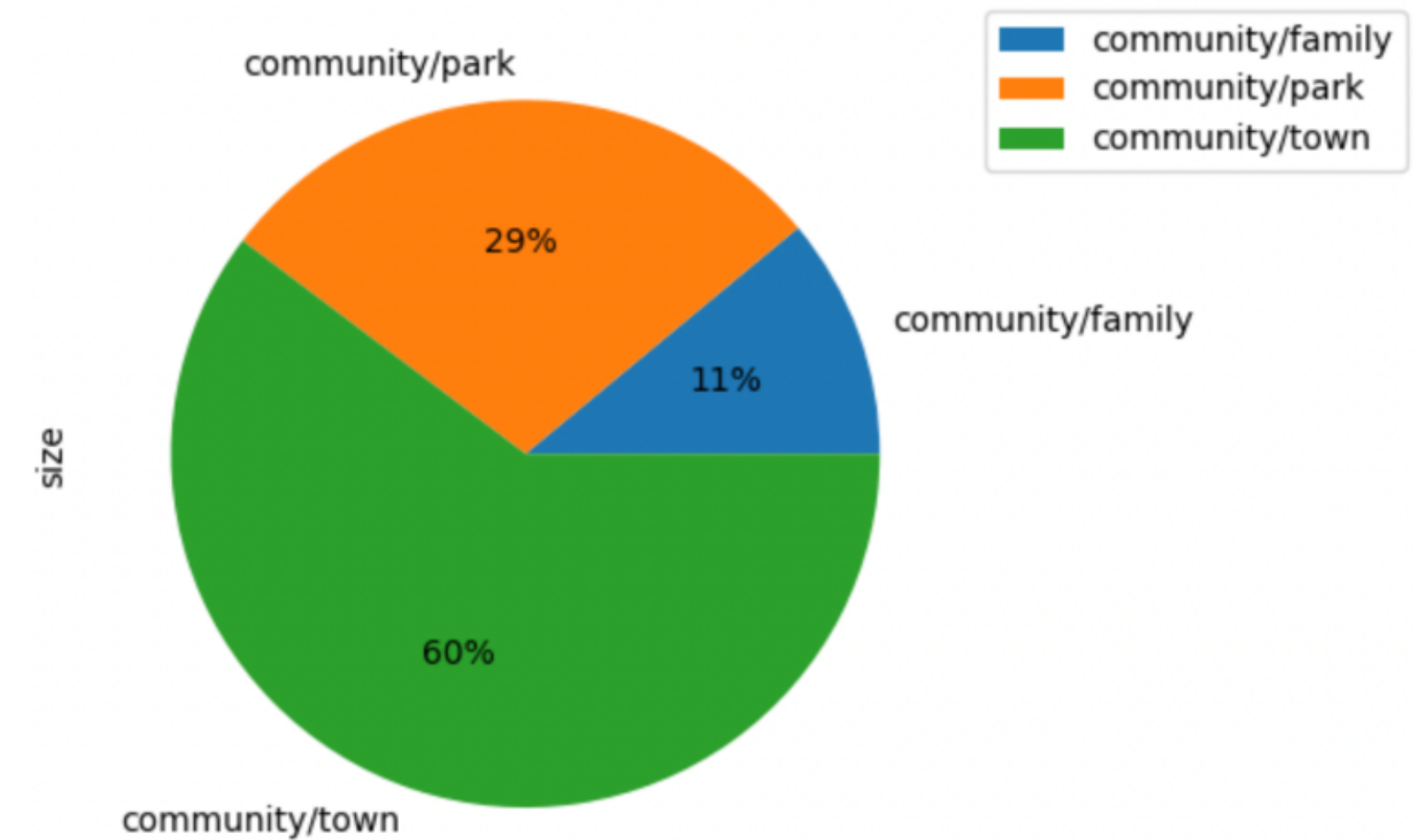


# SENTIMENT

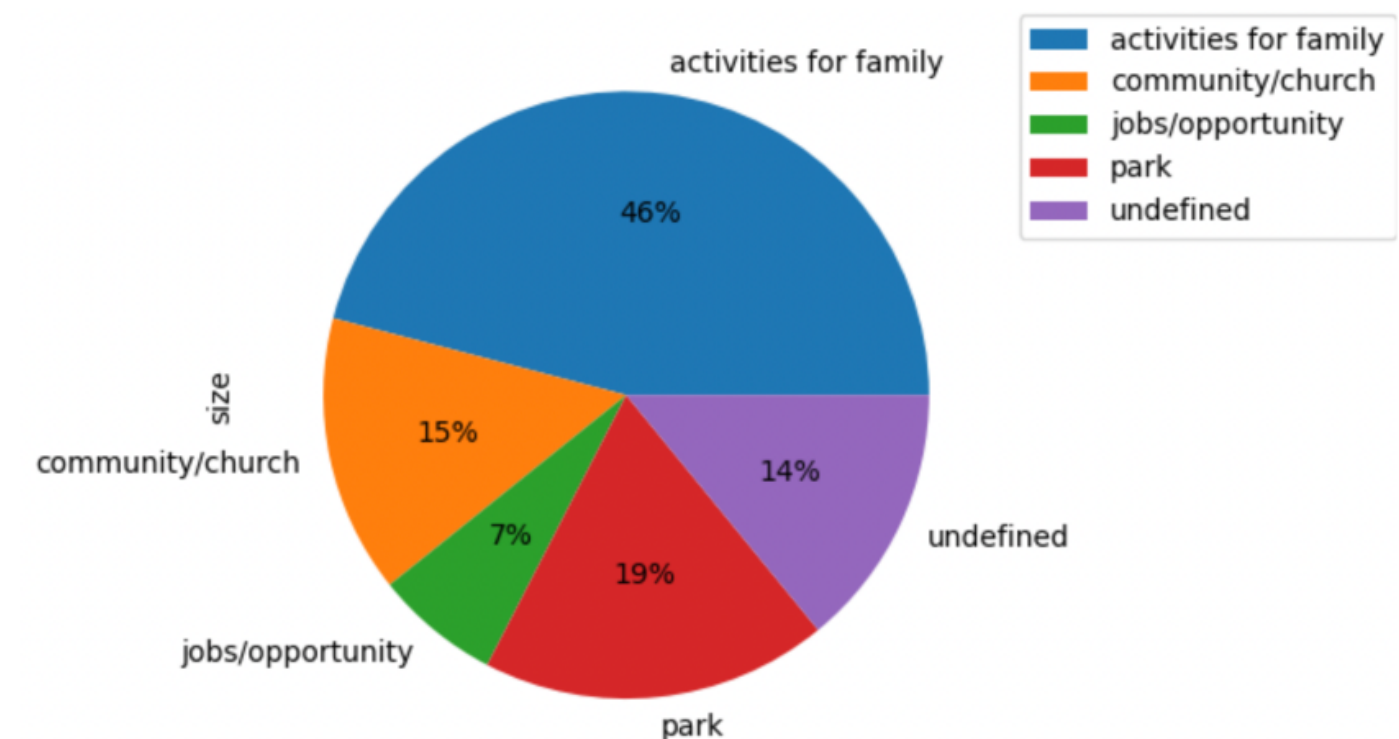
The average sentiment of respondents of the JOBS category.

	A	B
1	Respondent Number ▼	Average Sentiment Rate
2	3	0.451661543
3	4	0.177823153
4	5	0.363048754
5	8	0.538770372
6	9	0.274281318
7	11	-0.085892043
8	18	-0.091117984
9	20	0.274473624
10	21	0.178896584
11	22	0.357089585
12	25	0.181152501
13	26	0.177366544
14	27	0.178756427
15	31	0.089248852
16	32	0.273055293
17	34	0.446611903
18	35	0.451977388
19	36	-0.084132899
20	42	-0.089770751
21	45	-0.268038966
22	47	0.628071655
23	55	0.177272612

Question 1: What makes you glad to live in Grinnell?



Question 2: What things have the greatest positive impact on your quality of life in Grinnell?



Question 10: What things have the greatest positive impact on your quality of life in Grinnell?

## ISSUE CLUSTERING

### JOB

Keywords: employ, employer, employment, career, occupation, work, profession, job, recruit, recruitment, hiring, employment opportunity, part-time job, full-time job, temporary job, remote work



# QUESTIONS?



**Shreyas Agrawal**



**Grace Chen**



**David Dai**



**Pinkie Doan**



A large yellow circle is positioned on the right side of a white background. On the left side, there is a green shape that is a semi-circle with its flat edge towards the left. The text "Thank You" is centered within the yellow circle.

**Thank You**