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**Title:** Analyzing the type of posts and social interactions on Veganism through Reddit (1337 words)

## **Introduction:**

Veganism is a form of diet that refrains from eating meat or any animal-based products. The vegan diet has become increasingly mainstream since the 2010s, and social media has had a big part to play in it. Veganism has become a lifestyle movement based on social ties and media (René A. Becerra, 2019). Studies have been conducted to better understand people's inclination towards adopting a strict plant-based lifestyle. Through social media platforms such as Twitter and Instagram, there have been studies to better understand people's attitudes and experiences on healthy food (Pilař, Stanislavská, and Kvasnička 2021), in this case, specifically the vegan diet (Phua and Kim 2020).

On similar lines, this paper aims to understand how veganism as a topic, or a lifestyle is discussed and promoted through the social media platform – Reddit. By exploring the user engagement on different kinds of posts, we can identify which posts resonate with the users and are more likely to be discussed on this platform.

## **Research Questions:**

This study addresses the following questions:

What are the types of posts shared in a vegan 'community' to promote and/or discuss Veganism?

Does the type of post correspond to a higher number of net vote or comments?

How does the user engagement change with the length of the post.

## **Methods:**

### **a. Data Collection**

The data was collected manually from 50 Reddit posts from the largest vegan community on Reddit, i.e., r/vegan consisting of nearly 800K members. This data was gathered randomly between 1<sup>st</sup> January 2022 and 9<sup>th</sup> February 2022. However, only those Reddit posts were considered which had only text in them and a tag associated with them. The following components were manually captured:

Type of Post, Date, Net Votes, Number of Comments, the Header associated with it, and the length of the post in terms of Number of Words.

The type of post corresponds to the unique tag associated with it and six such tags or categories were found, namely: Rant, Funny, Disturbing, Uplifting, Story, and Discussion.

The Net votes are simply the number of upvotes minus the number of downvotes. An upvote in Reddit corresponds to if a user likes the post or finds it relevant to the community. It is the opposite in the case of a downvote. A high net vote count indicates a lot of people relate to the post or find it engaging.

Like the net votes, the number of comments also suggests user engagement.

The Number of Words per post was calculated using the website WordCounter.

b. Analysis

To answer the research questions, the data was analyzed and ANOVA tests were carried out to see if, statistically, there were any significant differences between the mean net votes and the type of posts (and the mean number of comments and the type of posts along with the mean number of words and the type of posts). The linear relationship between net votes and the number of comments (along with the number of words per post and number of comments). The results of the above are discussed in the next section.

## Results:

Type of Post	Count	Percentage	Mean Nett Votes per Post	Mean Comments per Post	Mean Length of Words
Rant	12	24	684.59	145.67	164.5
Uplifting	6	12	385.17	81.5	88.34
Discussion	14	28	430.65	193.54	154.43
Disturbing	4	8	179.75	151.5	106.75
Funny	3	6	695.34	187.34	98
Story	11	22	209.19	64.37	167.64
Total	50	100	433.22	135.29	144.62

Fig.1. Summary statistics for different posts.

Among the type of posts, the most frequent one was Discussion (28%) followed closely by Rant (24%) and Story (22%). The least frequent type of post was Funny, followed by Disturbing.

### Relationship between Type of Post and Net Votes:

Upon simple observation, it is apparent that there is a substantial difference in the means of Net Votes of all the kinds of posts. However, upon performing an ANOVA test on the data, there is no statistically significant difference in the means of these posts. The value of  $p$  was 0.25 which was much greater than the significance level of 0.05. This test further indicated that the average net votes for all posts were nearly the same.

### Relationship between Type of Post and Comments:

In the case of net votes, upon observation, there was an apparent significant difference in their means. But in the case of comments, it appears that the means of each post are close. Upon carrying out an ANOVA test, this claim is further solidified as a  $p$ -value of nearly 0.29 is observed, which again, is much higher than the significance level of 0.05. Based on the above test, it can be said that for all kinds of posts, the average number of comments is nearly the same.

### Relationship between Type of Post and Words per post:

Like the above, the ANOVA test was carried out to find if there is a significant difference in the mean number of words for at least one of the categories of posts. However, there was statistically no evidence ( $p$ -value = 0.5822) of the mean number of words differing substantially. This indicates that all types of posts more or less, on average, have the same number of words.

### Relationship between Words per post and Number of comments:

To answer the question of, if post length (in words) affects user engagement (in the number of comments), one would be inclined to think that the more the length of the post, the more likely is the user engagement. However, after executing a simple linear model, there was no direct relationship

between the two variables. The number of words per post was statistically insignificant ( $p\text{-value} = 0.95$ ) to determine user engagement.

### **Relationship between Net Votes and Number of comments:**

Similar to the above, a linear model was fitted between Net Votes and the Number of Comments. After carrying out the same, there was a direct relationship between the two variables (coefficient - 0.18828), along with a statistically significant  $p\text{-value}$  ( $3.31e - 08$ ).

While various tests were carried out between several variables of the dataset derived from different kinds of tests, unfortunately, there was only one significant result in those tests. There was no significant difference in the means of the number of net votes, comments, and words per post for different kinds of posts. Story and Rant posts are the kinds of posts one would expect to have, on average, significantly more words, but as per the statistical tests, it appears that is not the case. Similarly, when applying a linear model to the length of a post and the number of comments, one would expect it to have a positive or a negative linear relationship which is statistically significant, but it is not the case as shown through the statistical test.

Through the only significant result in the above tests, it is observed that there is in fact a positive linear relationship between net votes and the number of comments. It gives an indication that net votes are an important predictor to gauge user engagement in posts.

### **Limitations:**

While I did get insignificant results for the majority of the relationship analysis, this can potentially be attributed to the sample not being an accurate representation of the population. Also, only pure text-based posts were taken into consideration which might be an under-representation of “Funny” or “Disturbing” posts, as the bulk of them had some image or GIF associated with them. Lastly, the posts which had no tags associated with them were not considered in the sampling. This might further limit the results and subsequent conclusions derived from them.

### **Conclusions and Future Scope:**

Social media continues to play an important role in the promotion and adoption of veganism as a diet and eventually a lifestyle through various platforms. Overall, this study offers several insights (however limited) for Reddit-based user engagement. I think that is a good start and a step in the right direction to understand Reddit-based interactions.

To further understand the social media interactions on a platform such as Reddit, it will be better to consider a bigger sample size. Furthermore, to ensure that the sample is representative of the population, posts that were not pure text-based could also be taken into consideration. While user engagement is just one aspect of social media interactions on veganism, further in-depth study about how people react to a given post (positive, negative, or neutral) can be considered to understand social media interactions in-depth.

### **References:**

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