Analysis: How Community Feedback Shapes User Behavior

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1. Summary

This paper studied the effect of community feedback on online behavior in terms of post quality, community bias, user activity, and voting behavior. Data was collected from 4 online comment-based news communities. After an Amazon Mechanical Turk experiment, the proportion of up-votes(p) is taken to measure how users perceive the votes. The post is positively evaluated if p is in the upper quartile and negatively evaluated if it is in the lower quartile.

To test whether the value of p was due to post content or community bias, posts of similar text quality, but different reviews were studied. A binomial regression model was trained on half the posts to predict the quality of a post based on textual features extracted. This was also validated using crowd-sourcing platforms. Testing was done on the other half of the posts. Matching was done to get pairs of users with similar post history. In the pair, one user received a positive evaluation, and the other a negative one. It was observed that the post quality dropped after negative evaluation. There was not much change after a positive evaluation. Community bias is calculated by the difference between the true and predicted value of p. The perceived quality of posts after a negative evaluation is lower than their actual quality.

To study the effect on user activity, an additional factor is that both users have the same previous posting frequency. A negative evaluation increased posting frequency as compared to a positive evaluation. Users that received no feedback reduced posting. Negatively evaluated users are more likely to negatively evaluate others as well. Nothing significant is observed for positively evaluated users.

A graph was generated to study the organization of voting networks, where vertices are the users and edges denote the evaluations. When there is an equal number of positive and negative votes, the network is most balanced. A coalition of voters can also be observed. In 3 out of the 4 communities picked, tight groups are seen; that is, people in those groups have voted for each other.

2. Valuable Contributions

The paper provides new insights into the effect of community feedback on user behavior. These are contradictory to some of the previous papers. Negative evaluations' effect is more pronounced than positive ones. Both actual and perceived post quality drop after a negative assessment. The users also start posting frequently and are more likely to give negative evaluations.

3. Critique

Data collection and validation through crowd-sourcing have been done correctly. The literature review done is germane. In-depth analysis has been done in terms of up-votes, down-votes, and user activity, but there is not much focus on the posts' linguistic aspect.

4. Future Work

Further studies can be carried out on the coalitions in the voting network. In this paper, just the count of up-votes and down-votes was considered. For future work, the reputation of the users can also be taken into account. Another possible direction of work could be analyzing data from a platform that has only likes(up-votes). A more in-depth linguistic analysis can also be carried out.