

Paper Summary

How Community Feedback Shapes User Behavior

The paper analyses the working of feedback mechanisms in online systems and their effect on the underlying communities. While many studies have focused on predicting user ratings on online platforms, this paper discusses how these ratings affect the users' behaviour. The study used a rich dataset of comments (posts) and votes from four online news communities of different genres. The proportion of upvotes proved to be a good measure of how users perceived the votes and formed the basis to classify the posts as positively/negatively evaluated.

The effect of evaluations was studied on the post quality, community bias, posting frequency and voting behaviour of the user. Two users were considered for the study, which had a similar history of posts and comparable post quality but were differently evaluated. A machine learning model was used to assign a quality score to each post based on textual features to analyse the post quality. It was observed that negative evaluation decreased the quality of future posts of the user, whereas positive evaluation had a negligible effect. The difference between the proportion of upvotes and the post's quality score served as a parameter to explain community bias in the evaluations. The community perception of a user's posts after a negative evaluation worsened. Little or no change in community perception was observed for the user with the positively evaluated post. Both types of evaluations increased posting frequency, and surprisingly, negative feedback was a better stimulant to encourage users to post more. Users who received no feedback from the community posted less frequently in future. The evaluations also had a profound effect on the voting behaviour of the users. The reprimanded users showed a tendency to evaluate others negatively. Furthermore, the analysis of voting network in online communities showed that the network is most polarised when the votes are split evenly.

The paper has made remarkable contributions by providing a framework to quantify the effects of community feedback and establishing proportion of upvotes as a robust metric to understand community perception. The paper also discussed how the observed effects failed to resonate with the *Operand Conditioning Theory* ideas and claimed that negative feedback's detrimental effects are more profound than beneficial effects of positive feedback.

The paper's insights help us understand how online rating systems can be improved to benefit the community. The studies conducted incorporated a good diversity in the dataset and handled the possible pitfalls well. There is a scope of improvement in the machine learning models used for linguistic analysis. Considering the increased number of bots on online platforms nowadays, appropriate checks are essential to filter out spam activity. Some more work can be done to study clusters of people that form tight groups in the voting networks. The study should be extended to other online platforms with different rating mechanisms.

Reference: Cheng, J., Danescu-Niculescu-Mizil, C. and Leskovec, J., 2014. How community feedback shapes user behavior. arXiv preprint arXiv:1405.1429.

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