Appendix of the Manuscript No. SMCA-22-12-3144

In the proposed dataset, 100 microblogs with their comments from Weibo are provided. After a microblog is posted, we keep recording its status over the next 48 hours. To be specific, we record its top 20 reviews every half hour. Considering the microblog as an event and the aggregation of its comments as the public opinion towards the event, the data can be used to verify the proposed LPOD model. Noting that the names of microblog posters and commenters are given special treatment to protect privacy.

To test the prediction performance of the LPOD model, utilizing the sentiment analysis, every comment can be transferred to a number from 0 to 1. In this case, the public opinion can be also represented by a number from 0 to 1. Then, we further divide [0,1] into ten intervals with equal length ([0,0.1), [0.1,0.2), …, [0.9,1]). If the true public opinion and the predicted public opinion fall into the same interval, we consider the model to have made an accurate prediction. The prediction accuracy of the proposed and existing models is provided below. Apparently, the proposed model outperforms the existing one in prediction accuracy.

Table 1. Prediction Accuracy of Proposed and Existing Models

	Proposed Model	Existing Model
Accuracy	0.91	0.83

To test the management performance of the LPOD model, we apply real-world data to initialize the proposed model. The proposed and existing methods are applied to conduct 100 times of simulations with the real-world setting, respectively. The existing method I is managing opinion leaders, and the existing method II is adding special agents. The success rates of managing public opinion are provided below. In the real situation, the proposed management method still shows better performance than the existing methods.

Table 2. Success Rate of Proposed and Existing Methods

	Proposed Method	Existing Method I	Existing Method II
Accuracy	0.92	0.80	0.77