

# Online Petitions Recommenders with Social Network Latent Features

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## Abstract

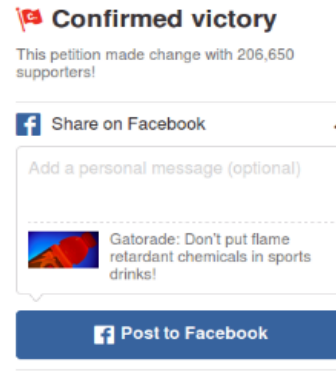
Online petitions have emerged to become a powerful tool for public to make positive impact on society. Below is a screenshot of an online petition started by a 14-year-old girl on Change.org addressing a sports drink company. The petition went viral through social media and main stream media. As a result, the company announced that this chemical component is removed from the new sports drinks. The girl's petition had a real positive impact on the society.

## Don't put flame retardant chemicals in sports drinks!

 Sarah Kavanagh Hattiesburg, MS



The other day, I Googled "brominated vegetable oil." It was the last time



Despite the real change that some online petitions make, it was reported in previous studies that a very large percentage of online petitions were never marked as “victory. We designed a model for an integrated recommendation system named “Petition Recommendation (PET-REC)” that suggests a recommendation system with sentiment and social network features. Our recommendation system examines features about user’s interests on Twitter social network and it also analyzes unique features from online petitioning websites from Change.org and thepetitionsite.com. PET-REC model suggests some new latent features through text mining such as the *sentiment score* on the petition level and user’s interest score latent feature on the user level. The *sentiment score* is computed using Harvard General Inquirer GI, while the interest score is derived from mining tweets and retweets history for users and their networks. We expect our unique features to provide a model for recommendation systems that could be adopted in practice to influence the chance of success of online petitions. Also, we believe that our model could be adopted in any context other than online petitioning such as crowdfunding for example.

Our motivation to participate at AMCIS TREO is derived from our belief in the intellectual expert audience that would attend the conference. We are looking forward to get constructive suggestions and feedback that could help us enhance PET-REC detailed model methodology and evaluation techniques.