

Mining Celebrity Endorsement Perceptions Using Varieties of Twitter Account Automated Data

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1 INTRODUCTION

Using celebrities to promote brands (also termed as “celebrity endorsement”) is a popular advertising technique. To avoid suboptimal decisions, managers assess consumer perceptions of similarity between the brand and the potential endorser by using costly, survey-based methods. In this study, we combine textual and structural mining methods to facilitate relevant decisions, by extracting information from Twitter data. We propose four metrics, capturing varying levels of brand-related social media activeness. Our methods are validated against survey data, across eight market sectors, Automobiles, Financial services, Technology, Industrial goods & services, Food & beverage, Media & telecommunications, Personal & household goods and Retail. We show that mining data from Twitter accounts elicits perceptions more accurately in industrial/specialized than consumer/mass-market sectors. We propose low-cost, real-time alternatives to survey-based elicitation methods and offer a foundation for future research advances in exploiting textual and structural information from social media as a means to gain richer insights about consumers.

2 ACKNOWLEDGEMENT

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3 PROPOSED METRICS

We propose and test four metrics for eliciting perceived brand-celebrity similarity, which capture different dimensions of the twitter dataset, as well as varying levels of activeness in participation.

Follow Similarity. This metric mines follow relations, interpreting them as expressions of user interest. When a set of users follows brand b and a set of users follows celebrity c , the given brand/celebrity pair will be perceived as having high similarity. We compute follow similarity as the Jaccard Index for the directed follow relation.

List Similarity. This metric captures user activity on maintaining twitter lists, interpreting same-list memberships as indications of similarity. We elicit perceived similarity between celebrities and brands, based on the number of lists they are placed together by independent users.

Content Similarity. This metric captures similarity in content tweeted by followers. We assume that the frequency of common words found in the twitter posts of brand’s b and celebrity’s c followers, indicates perceived similarity of the given brand/celebrity pair. We compute content similarity using TF-IDF to vectorize users’ tweets and applying cosine similarity (Fig. 1).

Favourite Similarity. This metric captures user likes. We assume that if more common users have favourited both a brand b and a celebrity c , there is high perceived similarity between them. We compute Favourite Similarity between b and c as the weighted Jaccard Similarity between the favourites of their tweets.

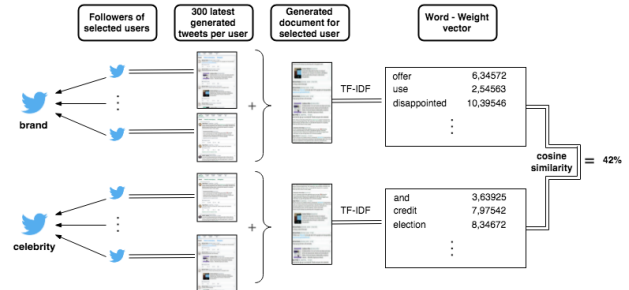


Figure 1: Content similarity pipeline

4 VALIDATING RESULTS

We administrated surveys through Amazon Mechanical Turk (AMT), to consumers to determine how strong is the association of brand-celebrity pairs. Following, we compute the Pearson correlation coefficient between the average survey ratings and each one of the four similarity metrics. The plot in Fig. 2 indicate that automated similarity metrics follow a similar pattern with survey results.

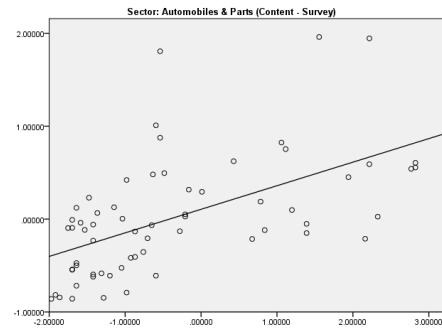


Figure 2: Automated similarity metrics against survey ratings for industrial (specialized market) sectors

5 CONCLUSION

The results indicate that Follow Similarity is more appropriate in eliciting brand/celebrity similarity perceptions within the technology sector, while Favourite Similarity seems more relevant for the financial services sector. Conversely, list and content metrics provide better estimates within the industrial goods & services, and automobiles & parts sectors, respectively.

6 REFERENCES

- (1) Maria Oikonomidou, Charalampos Saridakis, Polyvios Pratikakis, Sofia Angelidou, "Mining Celebrity Endorsement Perceptions Using Varieties of Twitter Account Automated Data". Under Review.