

Study On Opinion Mining And Sentiment Analysis

Priyanka Sharma¹, Pragyamani Sharma² Chanda Chouhan³ Pranoti Nage⁴ Jyothi Arun⁵

¹(Department of Information Technology, University of Mumbai, India)

²(Department of Information Technology, University of Mumbai, India)

³(Department of Information Technology, University of Mumbai, India)

⁴(Department of Information Technology, University of Mumbai, India)

⁵(Department of Information Technology, University of Mumbai, India)

Abstract: Sentiment analysis lets marketers to collect rich data on customer attitudes and opinions in real time. Marketers can also gather feedback on customer reviews as they occur without having to invest in lengthy and costly market research activities. Sentiment analysis results in better targeted marketing, brand-reputation protection and faster detection of opportunities and threats. Sentiment Analysis helps to build a predictive model for analyzing the impact of customer sentiments on product sales.

I. Introduction

Customer sentiments are analyzed using social media monitoring tools. Online customer reviews about the product brand were extracted from twitter using twitter data extraction API. The extracted reviews are classified as positive, negative and neutral based on their sentiment polarity and a sentiment score was assigned to each review. An offline survey can also be conducted to gather offline review rating about the chosen product brand. As a result a net sentiment score can be calculated to predict the sales performance of the product[1].

II. Methodology

Opinion mining for specific product features would require some level of semantic understanding to separate opinions about other features mentioned in the same review. Sentiment analysis include two sided reviews in order to test if there is a greater effect on the relationships examined when the reviews contain both positive and negative content. In addition, findings of sentiment analysis are not limited to only one leading brand, but can also include several different leading brands in different market categories. Sentiment analysis also include automatic irony detection in contrasting opinions of customers and conducting cross platform sentiment analysis[2].

The three dominant types of analytics –

- Descriptive analytics
- Predictive analytics
- Prescriptive analytics

These analytics methods are interrelated solutions helping companies make the most out of the big data that they have. Each of these analytic types offers a different insight.

Big data analytics cannot be considered as a one-size-fits-all blanket strategy. In fact, what distinguishes a best data scientist or data analyst from others, is their ability to identify the kind of analytics that can be leveraged to benefit the business - at an optimum[4].



Fig 1. Customer Analytics

III. Research And Analysis

- **Research gaps**

Firstly, there is a technical challenge of correctly evaluating the meaning and sentiment of customer reviews over social media for products sales as well as their brand reputation. Whether sentiment analysis is as useful for a raw material extractor (i.e., distant from consumers) as it is for a firm that assembles finished goods (i.e., close to the consumer) is still an open question. Furthermore, where a firm has only a portion of their output going into certain markets, hence it's not easy for those firms to predict the sales of their products over other portions of markets. Finally, not all firms have identified where their output makes its way into the consumer market or which brands use it. Sentiment analysis can be used by the researchers to understand the swings in consumer sentiment which can then be correlated with the changing patterns of purchase orders[5].

- **Research Contribution**

The consumer purchase intentions and attitudes toward the brand have been examined under the spectrum of perceived risk towards online shopping and prior product knowledge. The findings of this research are indicating that positive online reviews had a positive effect on the purchase intentions of customers. Regarding the sales of the products, this study concludes that customer with greater prior product knowledge and lower perceived risk will have more positive attitude towards purchasing the product online while the Consumer-based brand equity is not supported as a construct in the study[8].

IV. Conclusion

Sentiment analysis can provide substantial value to companies for various product sales. It enables campaign managers to track how customers feel about different issues and how they relate to the product features. This can be a useful practical solution to allow customers to help decide how well a product satisfies his/her needs if they are only looking for few important features in a product and don't care about other features.

References

- [1] Changbo Wang, Zhao Xiao, Yuhua Liu, Ynru Xu, Aoying Zhu, and Kang Zhang, "Interpreting the Public Sentiment Variations on Twitter", IEEE transactions on human- machine systems, vol. 43, no. 6, november 2013.
- [2] Desheng Dash Wu, Lijuan Zheng, and David L. Olson, "A Decision Support Approach for Online Stock Forum Sentiment Analysis", IEEE transactions on systems, man, and cybernetics: systems, vol. 44, no. 8, august 2014.
- [3] Eduard C. Dragut, Hong Wang, Prasad Sistla, Clement Yu and Weiyi Meng, "Polarity Consistency Checking for Domain Independent Sentiment Dictionaries", IEEE transactions on knowledge and data engineering, vol. 22, 2010.
- [4] Anindya Ghose and Panagiotis G. Ipeirotis, "Estimating the Helpfulness and Economic Impact of Product Reviews: Mining Text and Reviewer Characteristics", IEEE transactions on knowledge and data engineering, vol. 23, 2011.
- [5] Jimmy Xiangji Huang and Aijun An, "Mining Online Reviews for Predicting Sales Performance: A Case Study in the Movie Domain", IEEE transactions on knowledge and data engineering, vol. 24, no. 4, april 2012.
- [6] Jianping Cao, Ke Zeng, Hui Wang, Jiajun Cheng, Fengcai Qiao, Ding Wen and Yanqing Gao, "Web-Based Traffic Sentiment Analysis: Methods and Applications", IEEE transactions on intelligent transportation systems, vol. 15, no. 2, april 2014.
- [7] Kamath S.S. , Bagalkotkar A. , Kandelwal A. , Pandey S. , "Sentiment Analysis Based Approaches for Understanding User Context in Web Content" , IEEE International Conference on Communication Systems and Network Technologies (CSNT), vol 3, April 2013.
- [8] Akshi Kumar and Teeja Mary Sebastian. "Sentiment Analysis: A Perspective on its Past, Present and Future", MECS I.J. Intelligent Systems and Applications, vol. 10, 2012.