Chapter 5
Pros and Cons of Applying Opinion Mining on Operation Management: A Big Data Perspective

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ABSTRACT
The web data is growing at an immense pace. This is true for the social networks also. The data in the form of opinion of an individual is gathered to find the nuggets out of the same. The development in the application of opinion mining is rapidly growing due to various social sites which prompted us to pursue exhaustive literature survey in the field of opinion mining application in operation management and to classify the existing literature in this field. In this context the authors had identified the pros and cons of applying the opinion mining on operation management from the perspective of big data. The authors had considered the amount of data involved to be too big and for the same the big data concept is of primarily utmost significance. The authors also proposed a framework which clearly depicts the usage of the opinion mining on operation management of various domains.

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INTRODUCTION

Data collected from the social media channels is huge and unstructured. It must be made ready to use. Here comes the role of big data to store and analyze these large volumes of data in an effective and efficient way. Big data is high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making. Big Data analytics are the ways to convert the unstructured data available in the form of the social media into the structured data. Different tools for big data analytics must be developed for performing this task.

Sentiment analysis (opinion mining) techniques analyze opinionated text, which contains people’s opinions toward entities such as products, organizations, individuals, and events. Businesses are increasingly capturing more data about their customers’ sentiments that has led to the proliferation of sentiment analysis. Marketing, finance, and the political and social sciences are the major application areas of sentiment analysis. Sentiment analysis techniques are further divided into three sub-groups, namely document-level, sentence-level, and aspect-based.

Opinion mining has been applied to a number of domains like hotels and restaurants, different products, movies and politics. Not only this, but the ever growing growth of information on social media platforms has influenced many companies to use this analysis in the operational management as well. Operational management in the field of marketing can be used to predict the sentiment of customers for any new product launched.

An another application of it would be identifying trends and events that act as warning signs for supply-chain risks. Social media channels would be used for monitoring critical keywords or phrases associated with the suppliers’ names or specific sourcing markets. Such a system can help continuously update suppliers’ and sourcing markets’ risk profiles and even trigger contingency plans in case of, e.g., bankruptcies or natural disasters.

As opinion mining has its advantages, it has its disadvantages too. In some of the recent reports, it is being seen that people are being paid to write fake reviews of particular products which can hamper the growth of the product. It is being seen that fake users tend to write good reviews about the bad products and bad reviews about the good products. This term is called opinion fraud.

The chapter will be further divided into various subtopics. The sections include an introduction, Research Review, a framework for pros and cons of opinion mining in operation management based on the big data perspective. The framework for research includes the research methodologies used in writing the review. The analysis for opinion mining includes the steps performed while analyzing the classification framework.
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