

# Towards Better Decision-making with Twitter Sentiment Analysis

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**Abstract.** Due to the short and simple way of expression on social media platforms such as Facebook and Twitter, millions of people share daily real-time opinions about everything in an informal way due to the use of short language (slang) and emoticons, which generates an increasing availability of unstructured and yet valuable information to data science researchers. Traditional approaches such as paper-based surveys are not the wisest path for collecting and studying consumer behavior because they are time-consuming which leads to considerable losses for companies around the world. In this paper, we develop a hybrid system to identify and classify sentiment represented in an electronic text from Twitter where users post real-time reactions about everything to improve the decision-making process for companies. To do so, we used tweepy to access Twitter's Streaming API, we combined natural language processing techniques with Naive Bayes to classify users data, we used the Python library Matplotlib to display the results. The purpose of this paper is to propose an efficient and accurate approach for predicting sentiment from raw unstructured data in order to extract opinions from the Internet and predict online customer's preferences, which could be valuable and crucial for economic and marketing researchers.

## 1 Introduction

During the decision-making process 'What other people think' is a precious piece of information for the majority of us. The rise of microblogging and social networking websites fueled the interest in sentiment analysis. Since an increasing number of people are willing to post their opinions about different topics, products, companies, and anything else that is part of their daily life on Twitter, which is now considered a valuable online source for opinions. Sentiment analysis on Twitter is a rapid and effective way for analyzing public opinion for business marketing or social studies. For example, a business can retrieve timely feedback on a new product in the market by evaluating people's opinions on Twitter. As people often talk about various entities (e.g., products, organizations, people, etc.) in a tweet, we perform