**SENTIMEMNT ANALYSIS FOR MARKETING**

**ABSTRACT:**

Opinion mining has been ordinarily connected with the examination of a content string to decide if a corpus is of a negative or positive sentiment. As of late, opinion mining has been stretched out to address issues, for example, recognizing objective from subjective suggestions and deciding the sources and points of various suppositions communicated in text informational collections, for example, tweets, message board, web blogs, movie reviews, and news. Companies can use sentiment extremity and opinion point acknowledgment to pick up a more profound comprehension and the general extent of estimations. These experiences can progress focused insight, enhance client benefit, accomplish better brand picture, and upgrade competitiveness. In the aircraft service industry, it is hard to gather information about clients’ input by polls, yet Twitter gives a sound information source to them to do client opinion examination. This paper presents positive, negative sentiment, and their correlation about customer tweets. BIRCH clustering and [Association rule mining](https://www.sciencedirect.com/topics/computer-science/association-rules" \o "Learn more about Association rule mining from ScienceDirect's AI-generated Topic Pages) have been used in this chapter to get inside the dataset and retrieve hidden knowledge.

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### INTRODUCTION:

Sentiment analysis is the area which deals with judgments, responses as well as feelings, which is generated from texts, being extensively used in fields like data mining, [web mining](https://www.sciencedirect.com/topics/computer-science/web-mining" \o "Learn more about web mining from ScienceDirect's AI-generated Topic Pages), and [social media analytics](https://www.sciencedirect.com/topics/computer-science/social-medium-analytics" \o "Learn more about social media analytics from ScienceDirect's AI-generated Topic Pages) because sentiments are the most essential characteristics to judge the human behavior. This particular field is creating ripples in both research and industrial societies. Sentiments can be positive, negative, or neutral or it can contain an arithmetical score articulating the effectiveness of the sentiment. Sentiments can be expressed by calculating the judgment of people on a certain topic, approach, and sensation toward a unit [1], where a unit can be an occurrence, a theme, or even a character. Sentiment analysis and opinion mining are used interchangeably in several cases though there are occurrences where they hold minute dissimilarities among themselves [2]. Sentiment analysis works on discovering opinions, classify the attitude they convey, and ultimately categorize them division-wise.

**BENEFITS OF SENTIMENT ANALYSIS:**

* **SORTING DATA AT SCALE**

With sentiment analysis, companies don't have to sort through customer support conversations manually, thousands of tweets, and surveys. Sentiment analysis helps businesses process vast amounts of data efficiently.

* **REAL-TIME ANALYSIS**

It helps to identify critical issues in real-time. For example, is a crisis on social media escalating? Is there an angry customer about to churn? With Sentiment analysis models, businesses can immediately identify customer pain points and take action right away.

* **CONSISTANT CRETERIA**

A centralized sentiment analysis system can improve accuracy and deliver better insights since tagging text by sentiment is highly subjective, influenced by personal experiences, thoughts, and beliefs.

### CHALLENGES:

### LANGUAGE VARIATION

Another limitation of sentiment analysis is the language variation, which is the diversity and complexity of natural language in terms of vocabulary, grammar, syntax, semantics, pragmatics, and style. Language variation can affect the expression and interpretation of sentiment in different ways.

### SARCASM AND IRONY

Another challenge for sentiment analysis is the sarcasm and irony, which are rhetorical devices that use words or expressions that imply the opposite of their literal meaning. Sarcasm and irony can be used to convey humor, criticism, or irony in a text, but they can also confuse or mislead sentiment analysis models.

### SENTIMENT EVOLUTION

Another limitation of sentiment analysis is the sentiment evolution, which is the change or variation of sentiment over time or across situations. Sentiment evolution can occur due to various factors, such as new information, feedback, events, or trends. Sentiment evolution can affect the relevance and validity of the sentiment analysis results.

**MODELS:**

**Model 1:**

Sentiment Classification: Sentiment analysis can classify customer reviews or social media posts into positive, negative, or neutral categories. This classification helps businesses track customer sentiment over time and identify areas for improvement or celebration.

**Model 2:**

Brand Monitoring: Sentiment analysis can be used to monitor online conversations about a brand, product, or campaign. It helps marketers gauge public opinion, identify potential brand advocates or influencers, and address any negative sentiment before it escalates.

**Model 3:**

Advertising Effectiveness: Sentiment analysis can assess the success of marketing campaigns by measuring the sentiment around advertisements or promotional materials. It helps marketers understand consumer response, identify what resonates with the audience, and make data-driven decisions to optimize future campaigns.

**Model 4:**

Competitor Analysis: Sentiment analysis can be used to analyze customer sentiment towards competitors. By comparing sentiment scores, marketers can identify their competitive advantages and weaknesses, and develop strategies to differentiate themselves.

**Model 5:**

Customer Feedback Analysis: Sentiment analysis enables businesses to analyze customer feedback, such as product reviews or customer support emails, to identify common pain points, improve products or services, and enhance customer satisfaction.

**Model 6:**

Social Media Listening: Sentiment analysis allows marketers to monitor social media conversations in real-time, enabling them to address customer concerns promptly, engage with influencers, and spot emerging trends.

**Model 7:**

Sentiment-based Targeting: Sentiment analysis can be used to segment customers based on sentiment. By targeting customers with specific sentiment profiles, marketers can tailor their messaging, offers, or customer service approach to effectively address their needs.

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