

# Sentiment Analysis of ASOS Product Reviews Using Machine Learning Algorithms by Comparing Several Models

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**Abstract** - Digital ratings are crucial in improving international customer communications and impacting consumer purchasing trends. To obtain important data from a massive number of customer reviews, they must be sorted into positive and negative opinions. Sentiment analysis is a computational method for extracting emotive information from a text. In this particular research, over 3000 reviews have been obtained from the ASOS website and classified into three different sentiments: excellent, average, and bad. The obtained reviews have been pre-processed, then feature extraction is applied to the pre-processed data to remove the redundant data. Finally, distinct machine learning algorithms will be utilized to build disparate models. This research is vital as it allows the ASOS organization to gain insight into how consumers perceive about specific issues and detect urgent issues such as delivery delays and misplaced packages in the current time period before the issue goes out of control. The key results of this research show that the Nu-Support Vector Classification model obtained the highest accuracy score of 85.99% and the lowest accuracy score of 51.47% was obtained for the AdaBoost classifier model.

**Keywords** – feature extraction, Machine Learning algorithms, multi-class classification, sentiment analysis