

## Information Disclosure And Financial Sentiment Index Using a Machine Learning Approach

**Authors :** Alev Atak

**Abstract :** In this paper, we aim to create a financial sentiment index by investigating the company's voluntary information disclosures. We retrieve structured content from BIST 100 companies' financial reports for the period 1998-2018 and extract relevant financial information for sentiment analysis through Natural Language Processing. We measure strategy-related disclosures and their cross-sectional variation and classify report content into generic sections using synonym lists divided into four main categories according to their liquidity risk profile, risk positions, intra-annual information, and exposure to risk. We use Word Error Rate and Cosin Similarity for comparing and measuring text similarity and derivation in sets of texts. In addition to performing text extraction, we will provide a range of text analysis options, such as the readability metrics, word counts using pre-determined lists (e.g., forward-looking, uncertainty, tone, etc.), and comparison with reference corpus (word, parts of speech and semantic level). Therefore, we create an adequate analytical tool and a financial dictionary to depict the importance of granular financial disclosure for investors to identify correctly the risk-taking behavior and hence make the aggregated effects traceable.

**Keywords :** financial sentiment, machine learning, information disclosure, risk

**Conference Title :** ICMESI 2023 : International Conference on Mathematical Economics, Statistics and Informatics

**Conference Location :** Oslo, Norway

**Conference Dates :** June 22-23, 2023