Financial News Sentiment Analysis for Investment Decision Making

Project Overview

This project analyzes 1,000 financial news articles to extract market sentiment and deliver actionable insights for investment decision-making using Natural Language Processing (NLP).

Business Problem

Financial markets react strongly to news sentiment, but manual analysis of large-scale financial news is time-consuming and subjective. This project builds an automated intelligence system to support faster, data-driven investment decisions.

Methodology Overview

• Text preprocessing and normalization
• Sentiment analysis of financial news articles
• Topic modeling to identify dominant market narratives
• Text clustering to detect recurring investment themes
• Aggregation of insights for strategic decision-making

Data Overview & Quality Assessment

The dataset consists of 1,000 financial news articles sourced from 12 publishers. The data demonstrated high completeness, with minimal missing values and balanced sentiment coverage.

Sentiment Analysis Results

• Average market sentiment score: **0.102 (Positive Bias)**
• Positive articles: 39.7%
• Neutral articles: 52.7%
• Negative articles: 7.6%
• Indicates cautious optimism in financial markets

Topic Modeling Insights

Five dominant market themes were identified:
1. Corporate Performance & Earnings
2. Market Trading & Investment Activity
3. Technology & Innovation
4. Economic Policy & Regulation
5. Industry Trends & Analysis

Text Clustering & Pattern Discovery

Seven distinct content clusters emerged, revealing:
• Earnings-driven narratives
• ETF and trading discussions
• Dividend and long-term investment signals
• Legal and regulatory risk clusters

Market Intelligence & Investment Signals

• Moderate bullish market signal detected
• Suggested equity overweight: 5–10%
• Monitor regulatory and crypto-related news for risk indicators

Business Impact

• Reduced manual analysis time by approximately **90%**
• Enabled scalable market monitoring
• Improved speed and objectivity of investment decisions

Conclusion

This system demonstrates how NLP-driven analytics can transform unstructured financial news into structured, decision-ready market intelligence.