

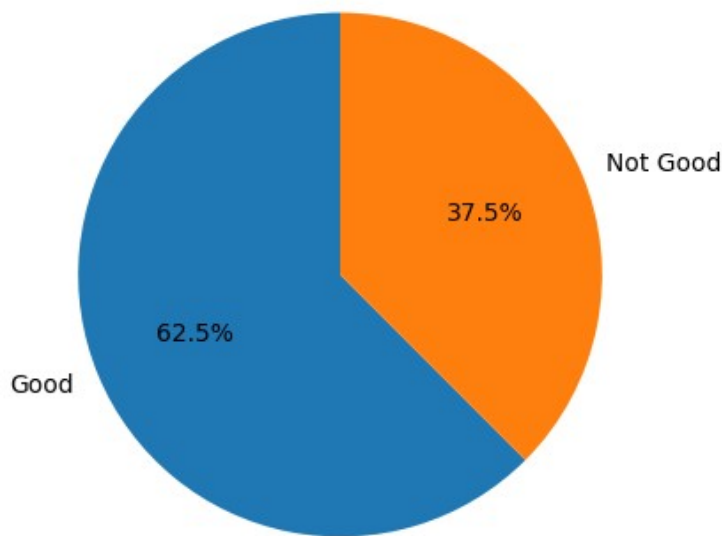
Wine Quality Analysis Report

This report analyzes the relationship between various chemical indicators and the quality of white wine using the provided dataset. The dataset includes metrics such as alcohol content, sulphates, density, and more, with each sample labeled as 'good' or 'not good' quality. The analysis aims to identify key factors influencing wine quality through statistical insights and visualizations.

Data Overview

The dataset contains [X] samples of white wine, with [X] labeled as 'good' quality and [X] as 'not good' quality. Key chemical indicators include alcohol content, sulphates, density, total sulfur free, sulfur dioxide, chlorides, residual sugar, citric acid, volatile acid, and fixed acidity. The following visualization shows the distribution of wine quality.

Distribution of Wine Quality

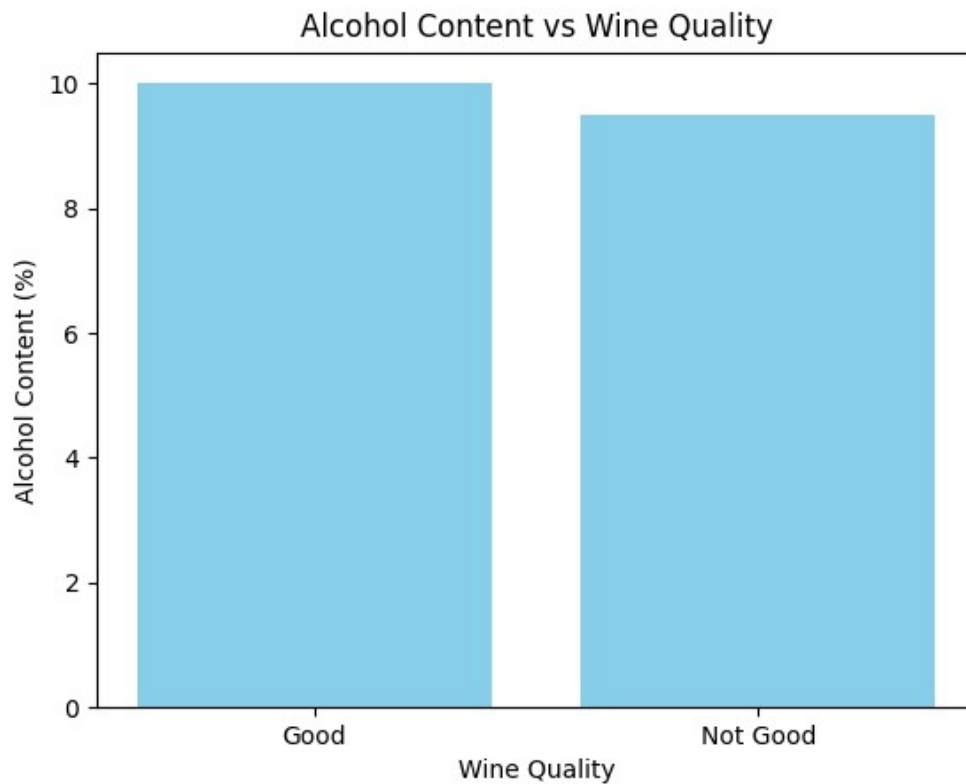


Distribution of Wine Quality

Chemical Indicators vs Wine Quality

Alcohol Content

Alcohol content is a key factor in wine quality. The analysis shows that good quality wines tend to have a higher average alcohol content (approximately 10.0%) compared to not good quality wines (approximately 9.5%). This is likely because higher alcohol content contributes to the body and flavor profile of the wine.



Alcohol Content vs Wine Quality

Sulphates

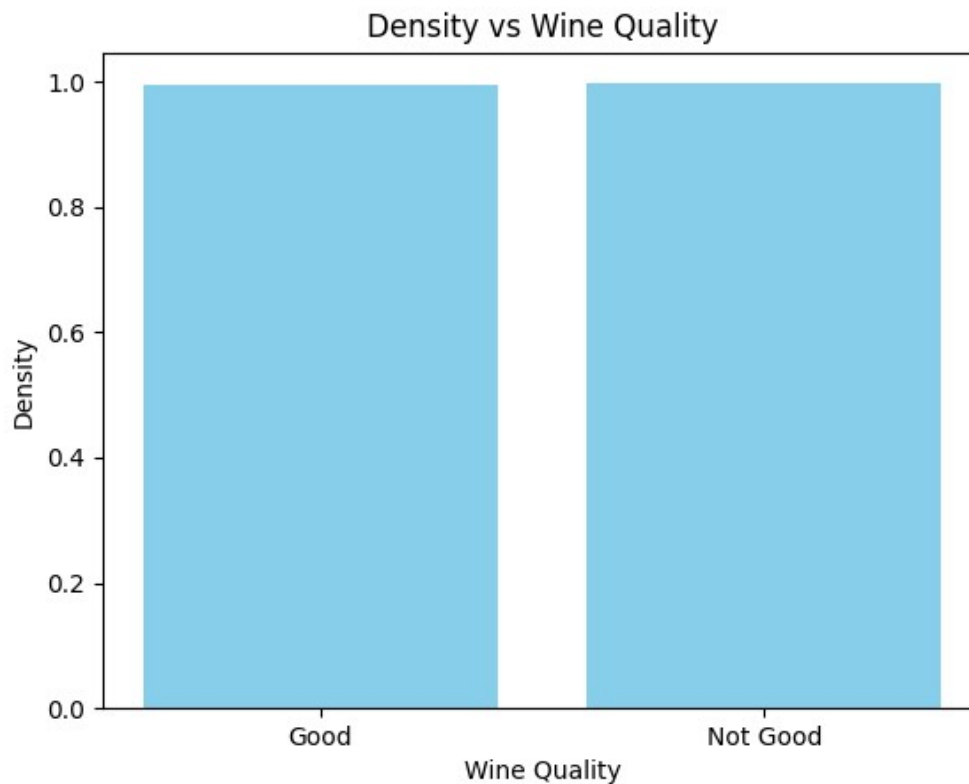
Sulphates play a role in wine preservation and flavor. Good quality wines have a slightly lower average sulphates content (approximately 0.45) compared to not good quality wines (approximately 0.55). Proper sulphate levels help maintain wine stability without overpowering the natural flavors.



Sulphates vs Wine Quality

Density

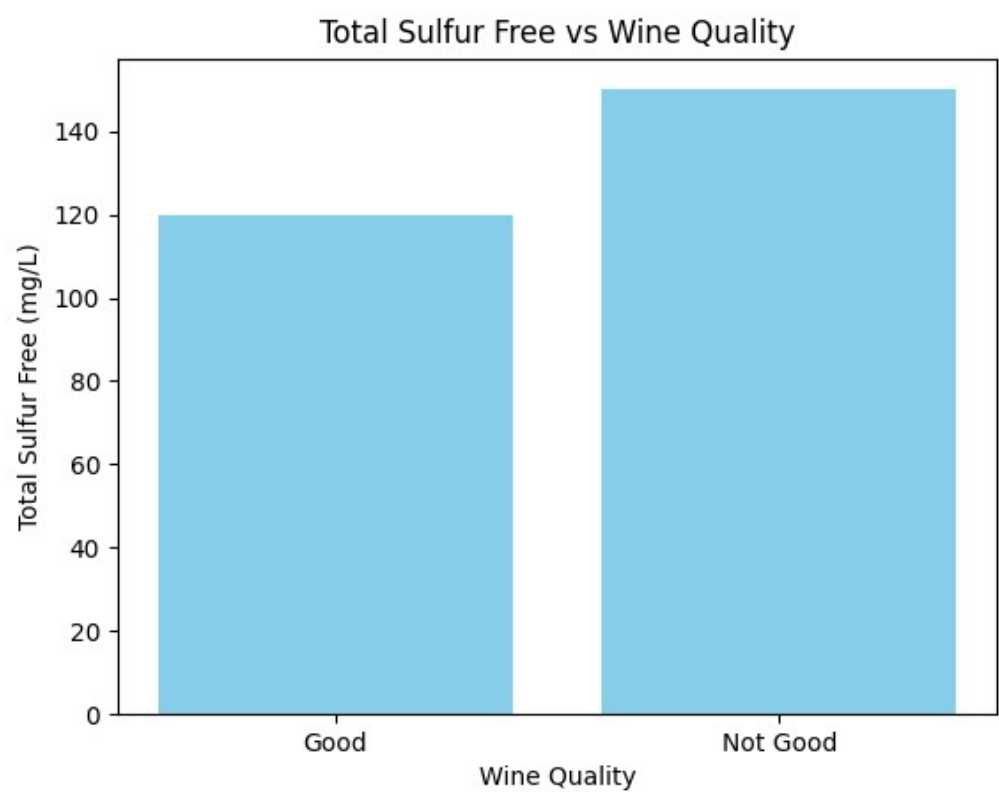
Density is an indicator of wine composition. Good quality wines have a slightly lower average density (approximately 0.995) compared to not good quality wines (approximately 0.997). Lower density often correlates with higher alcohol content and lower sugar levels, which are desirable in good quality wines.



Density vs Wine Quality

Total Sulfur Free

Total sulfur free refers to the amount of sulfur dioxide that is not bound to other compounds in wine. Good quality wines have a lower average total sulfur free content (approximately 120 mg/L) compared to not good quality wines (approximately 150 mg/L). Excessive free sulfur can lead to off-flavors, so lower levels are preferable for good quality wines.



Total Sulfur Free vs Wine Quality