

Appendix

Figure 2.2.1: Multiple regression results (audio features only)

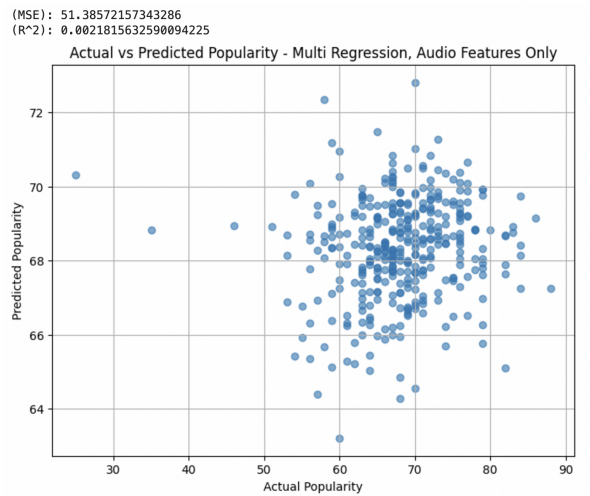


Figure 2.2.2, 2.2.3: Random forest regression results (audio features only)

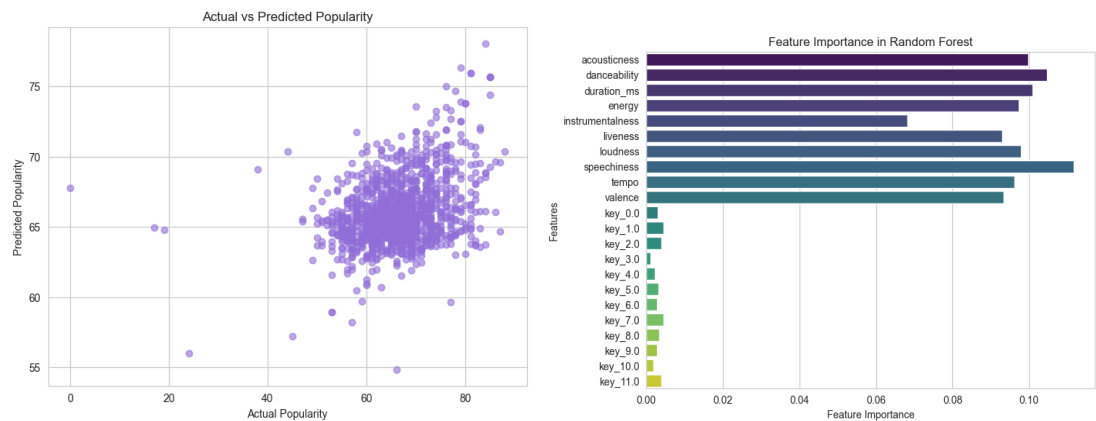
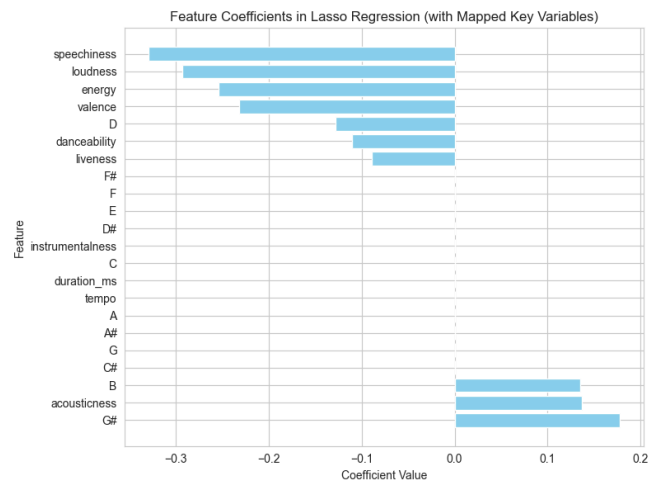
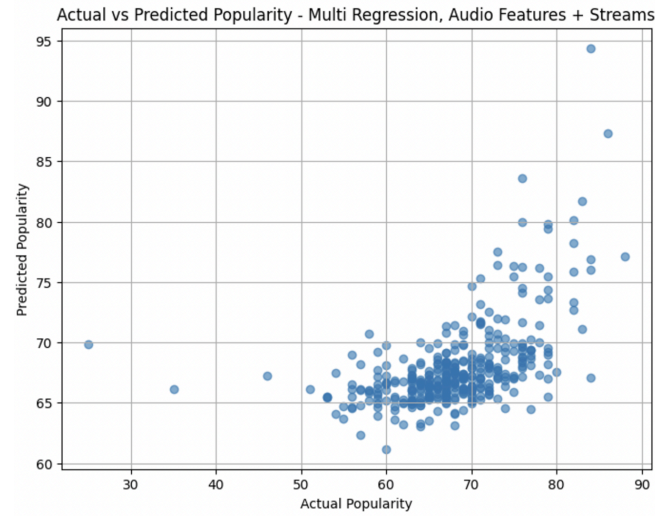


Figure 2.2.4: Lasso regression feature coefficients



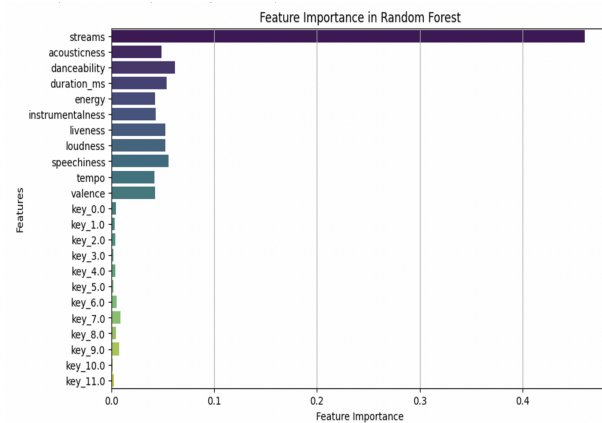
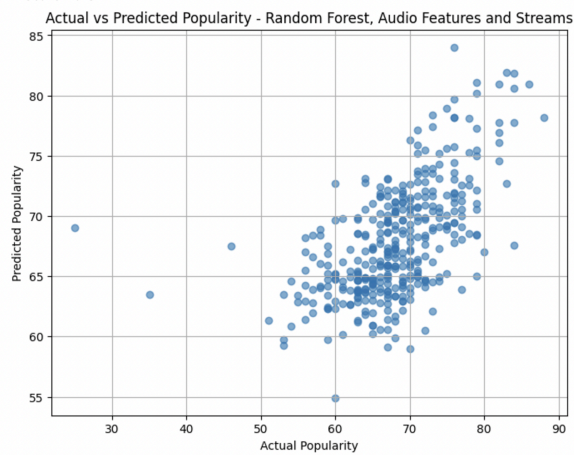
**Figure 2.2.5: Multiple regression results (audio features, streams)**

(MSE): 36.51732080212758  
(R<sup>2</sup>): 0.2908992062186594

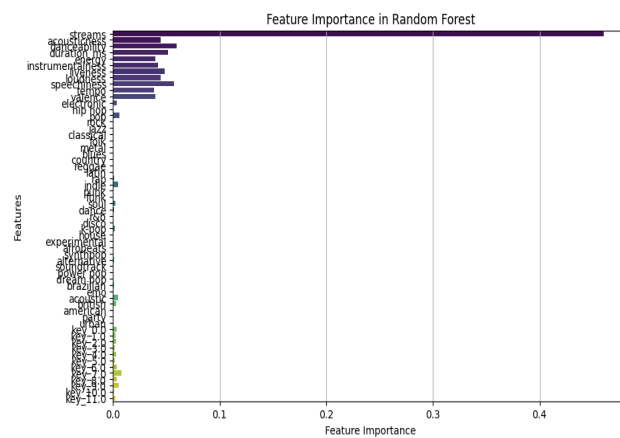
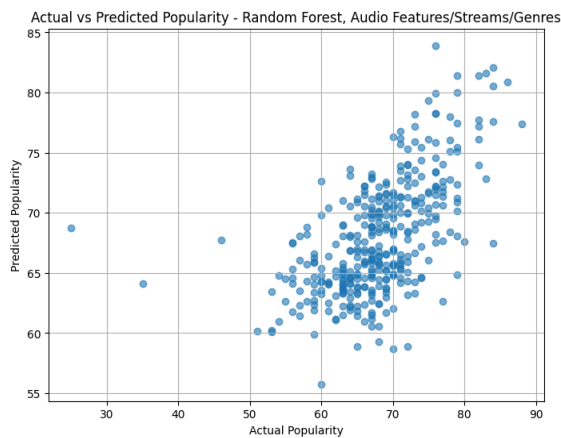


**Figure 2.2.6, 2.2.7: Random forest regression results (audio features, streams)**

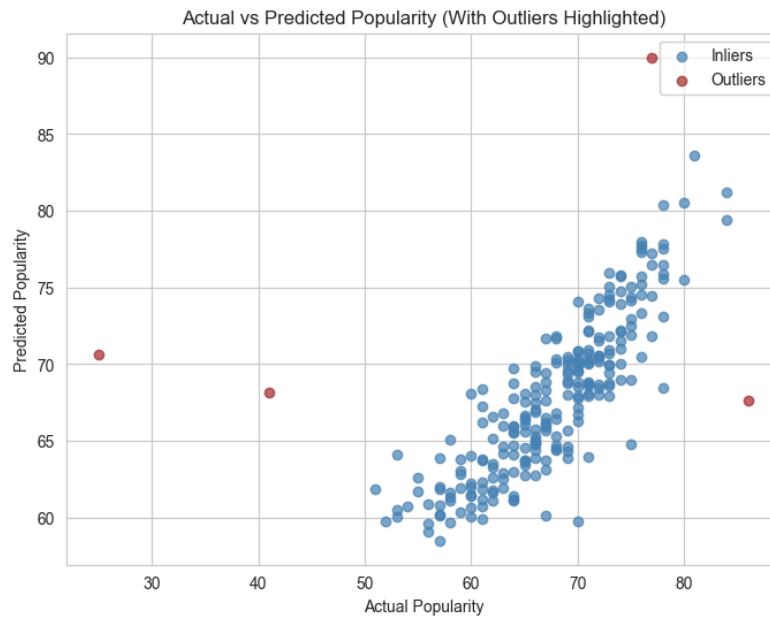
Mean Squared Error (MSE): 34.24  
R<sup>2</sup> Score: 0.34



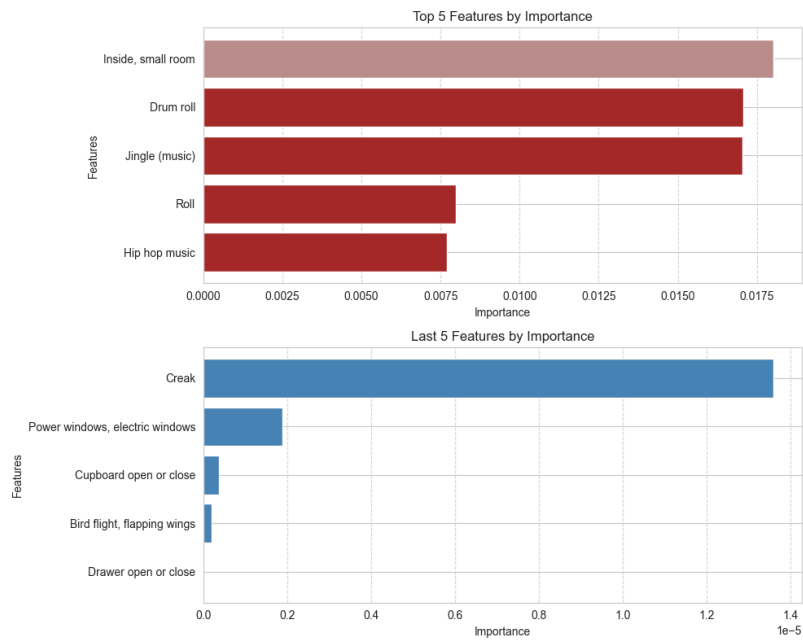
**Figure 2.2.8, 2.2.9: Random forest regression results (audio features, streams, genre)**



**Figure 2.2.10: Neural Network - Predicted vs Actual (After excluding outliers)**



**Figure 2.2.11: Musical Feature Importances**



Part 2 Graphs:

Figure 3.1.1 Heatmap of Average Similarity Between Years 2018-2023 of top 25 English Songs

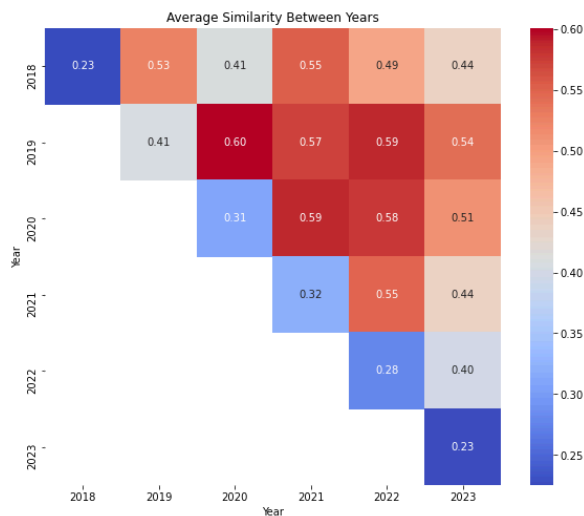


Figure 3.1.2 Heatmap of Average Similarity Between Taylor Swift Songs from 2019-2022

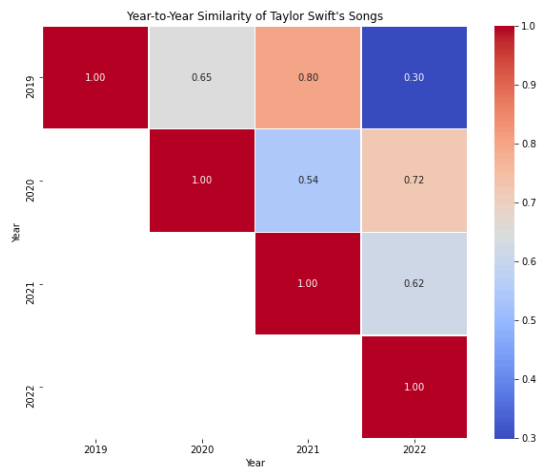
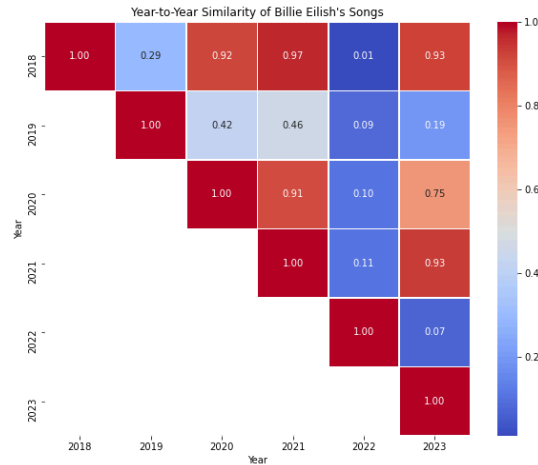
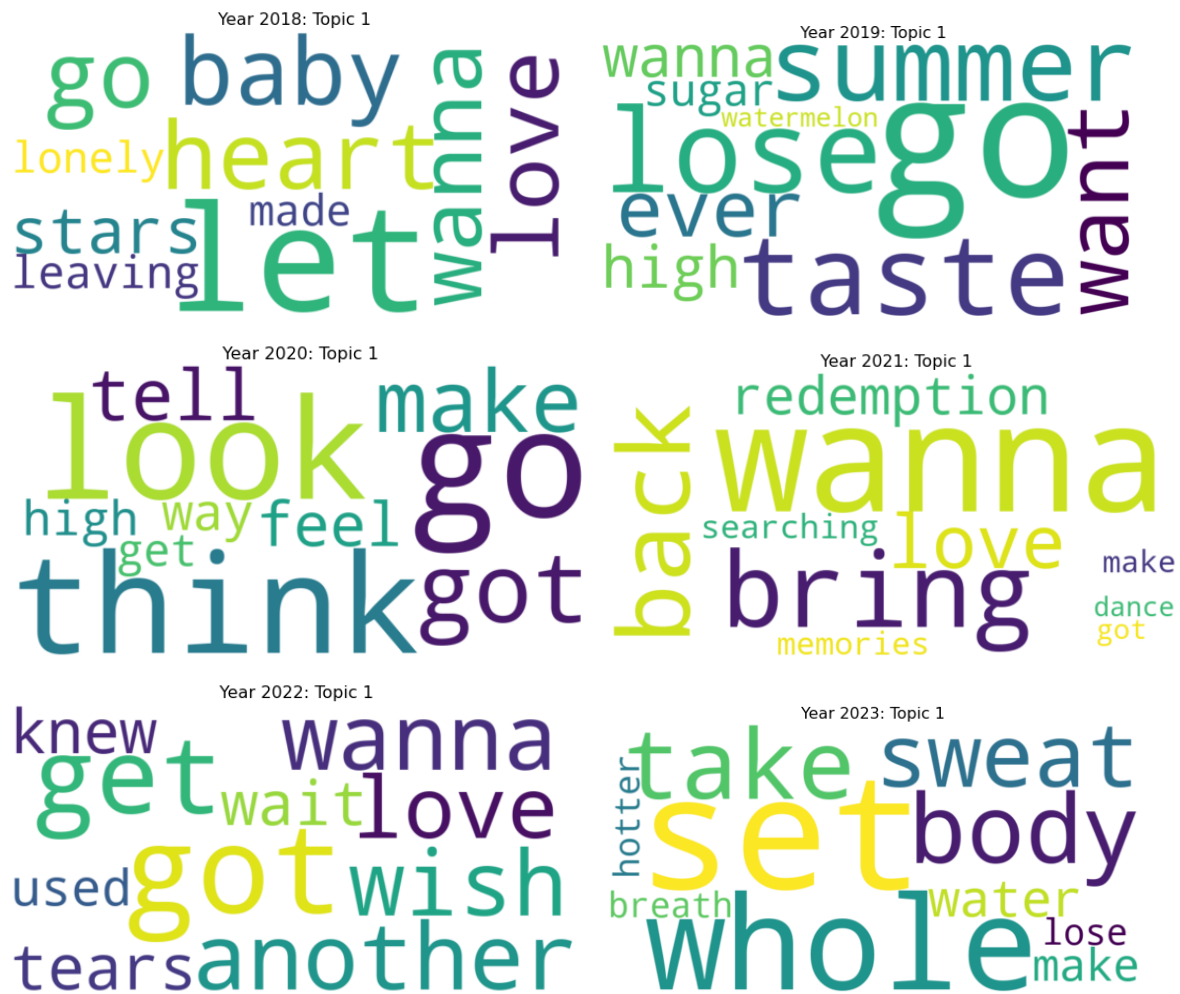


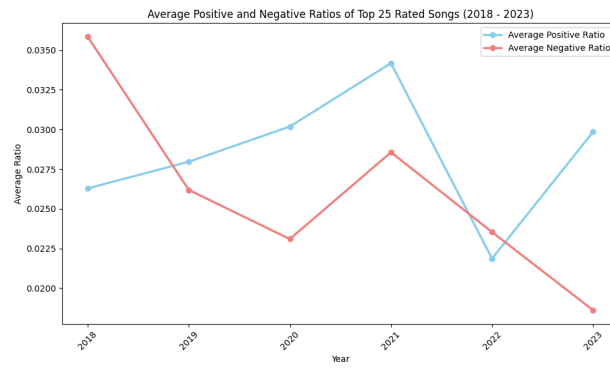
Figure 3.1.3 Heatmap of Average Similarity Between Billie Eilish Songs from 2019-2022



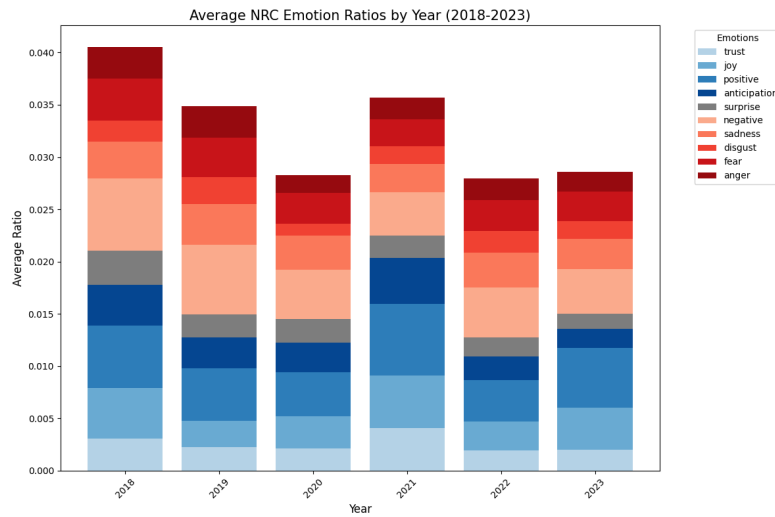
Figures 3.1.4-3.1.9 Word Clouds for the Most Dominant Topics (out of 8 total) for Years 2018-2023



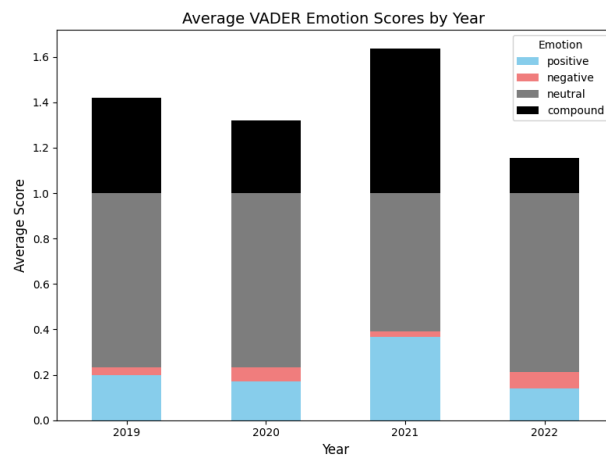
**Figure 3.1.10 Naive Positive and Negative Ratio 2018-2023**



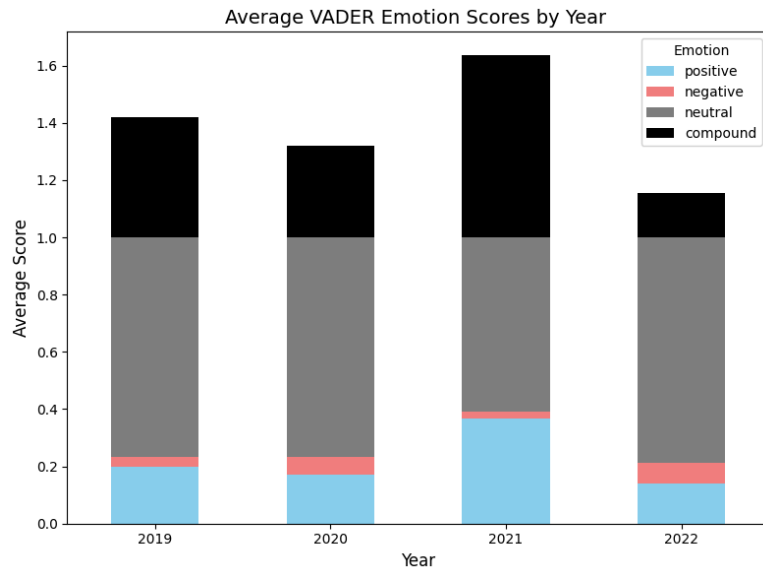
**Figure 3.1.11 NRC Emotion Ratio 2018-2023**



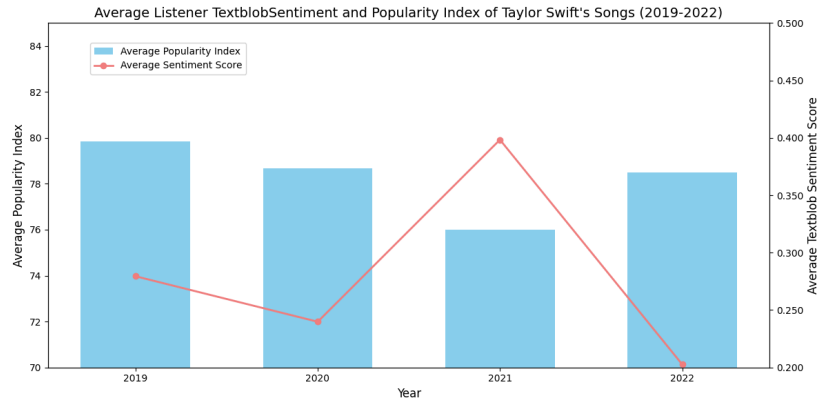
**Figure 3.1.12 VADER Emotion Score of Taylor Swift Channel Comments**



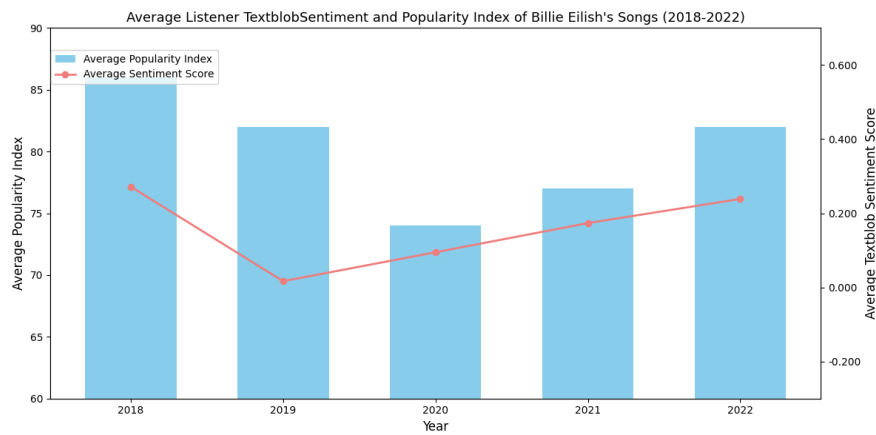
**Figure 3.1.13 VADER Emotion Score of Billie Eilish Channel Comments**



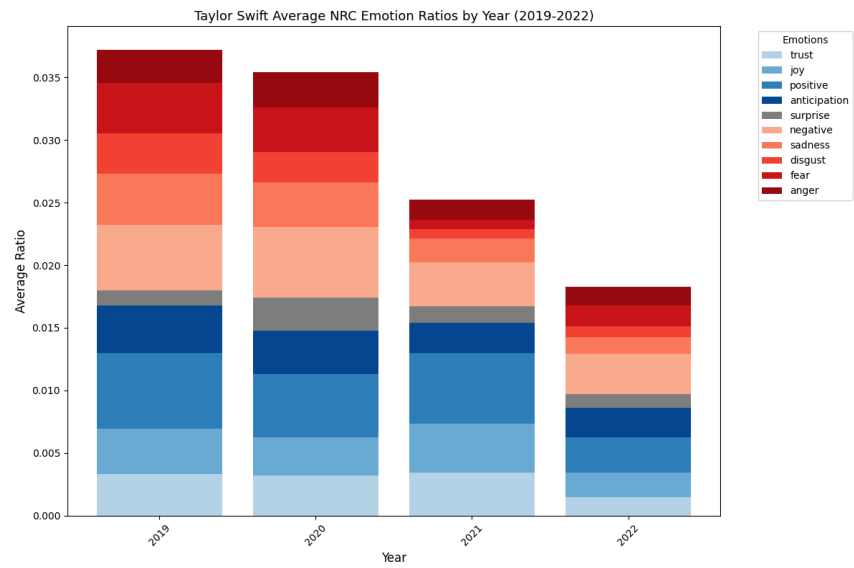
**Figure 3.1.14 Taylor Swift YouTube Channel Textblob Emotion/Popularity Index Comparison**



**Figure 3.1.15 Billie Eilish YouTube Channel Textblob Emotion/Popularity Index Comparison**



**Figure 3.1.16 Taylor Swift Song Lyrics NRC Score by Year**



**Figure 3.1.17 Billie Eilish Song Lyrics NRC Score by Year**

