

DETERMINING SONG SUCCESS

A Classification and Analysis Project
Dana Rausch | 2.19.2021

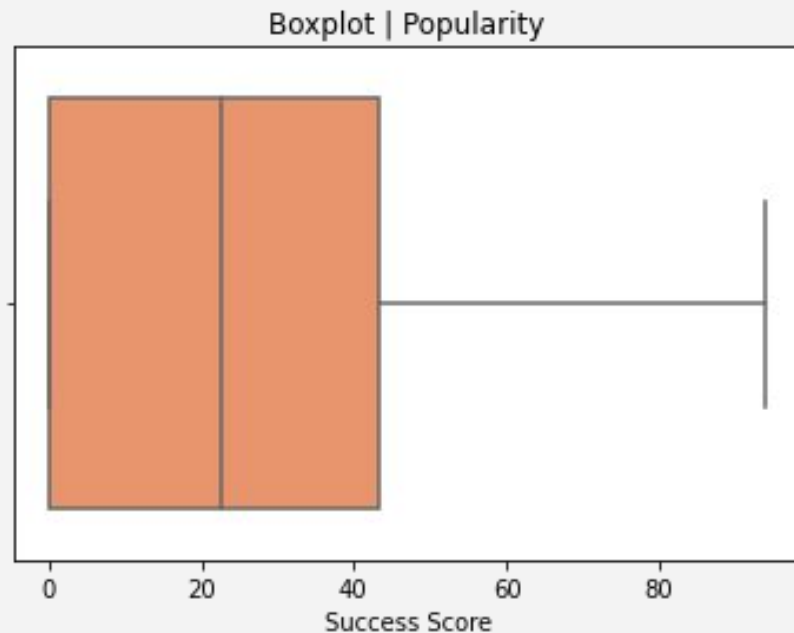
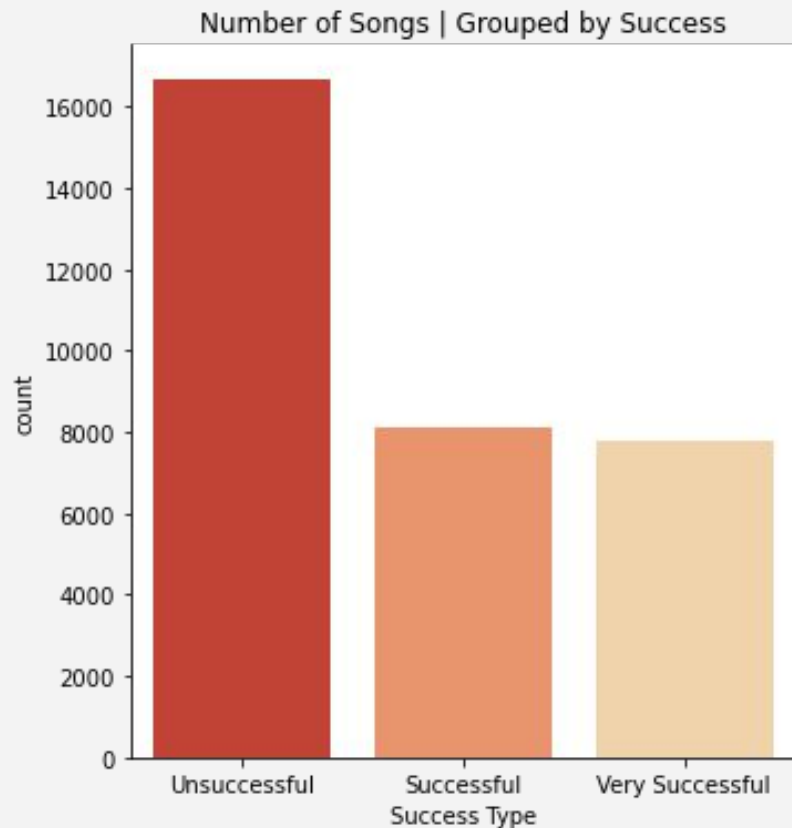


CONTENTS

- Business Problem
- Business Value and hypothesis
- Methodology
- Results
- Recommendations | Conclusions
- Future Work
- Appendix

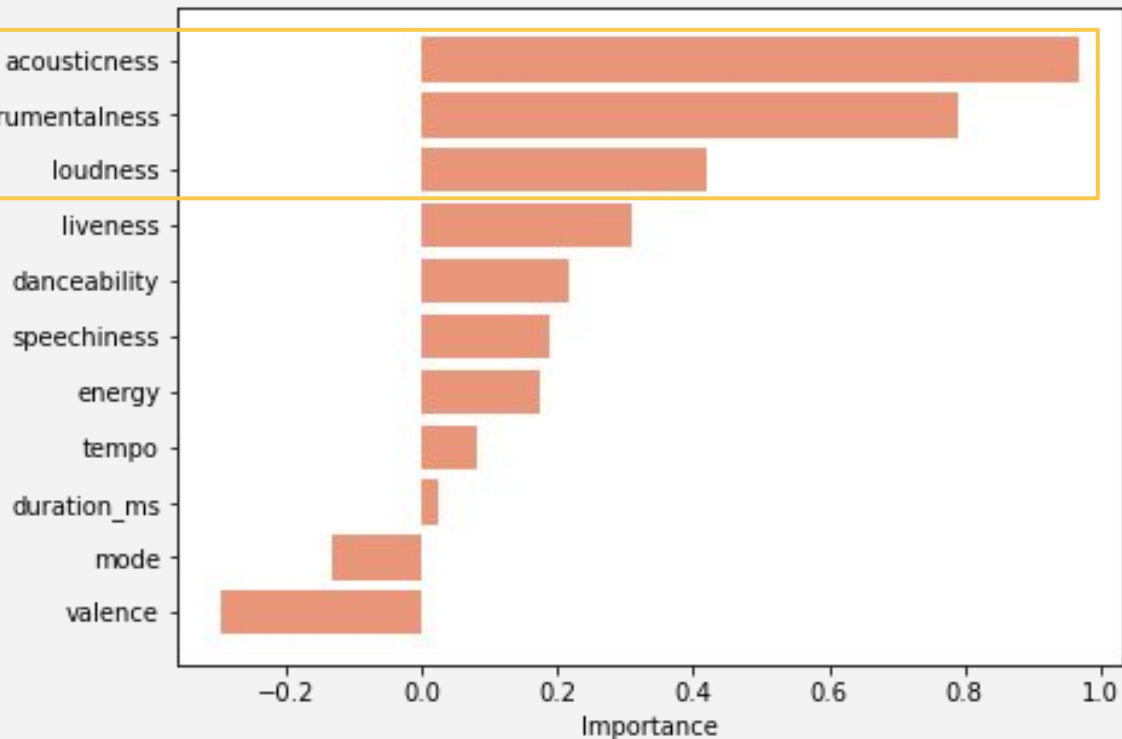


THE PROBLEM: HOW TO DETERMINE IF A NEW SONG WILL BE SUCCESSFUL



TECHNICAL FEATURES

Feature Influence on Success



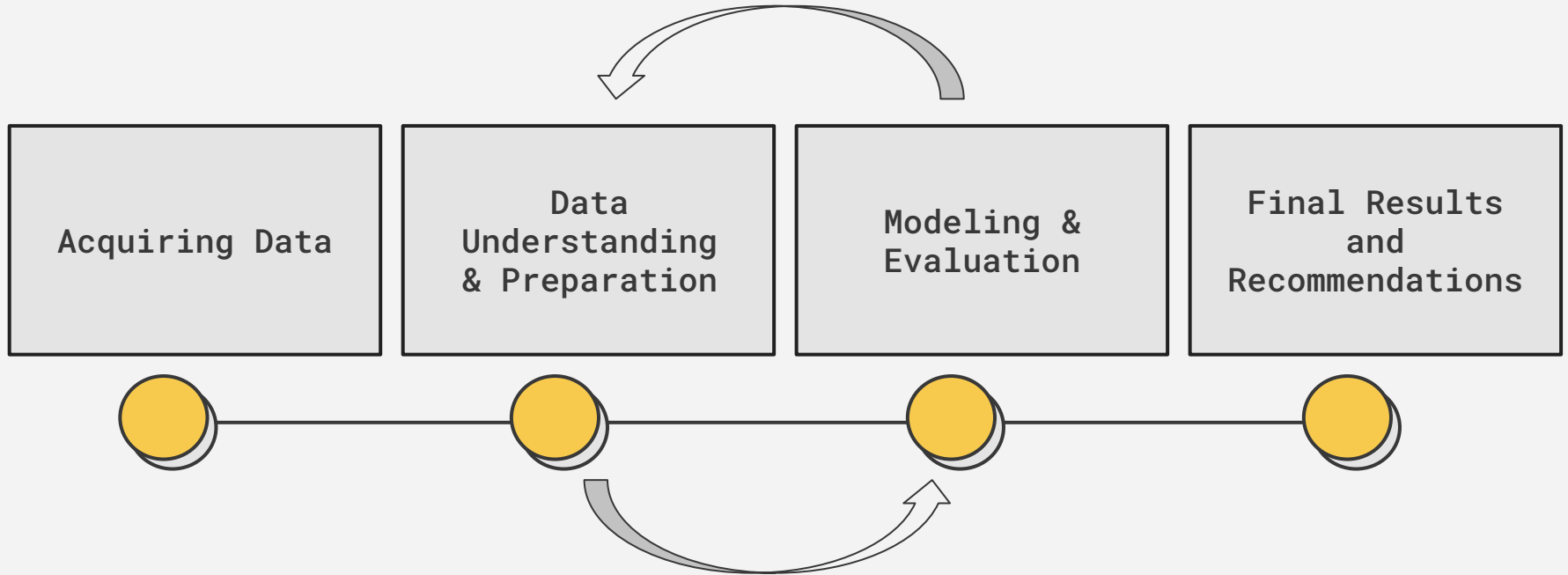
**Features with most impact
on success:**

Acousticness: 0.98

Instrumentalness: 0.79

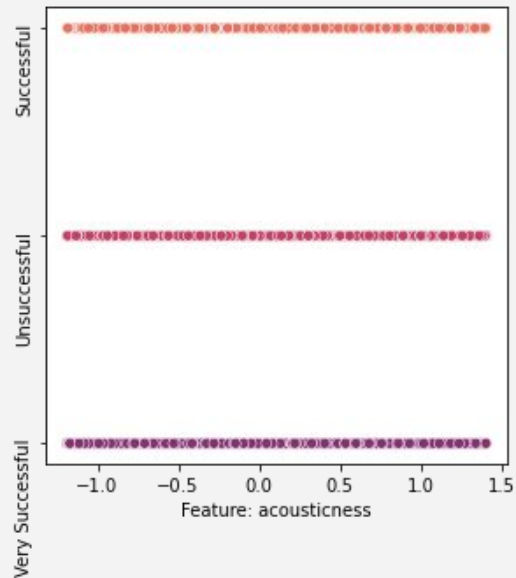
Loudness: 0.42

METHODOLOGY

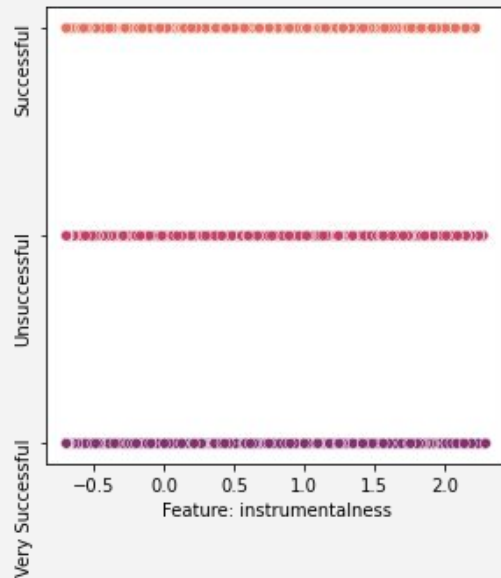


DISTRIBUTION OF SUCCESS

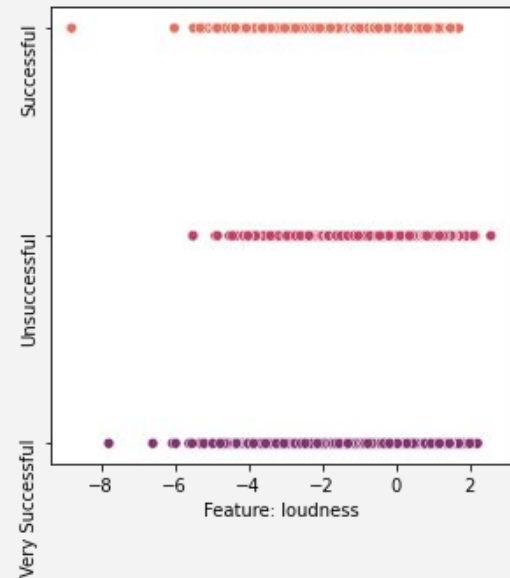
Distribution of Success Across Influential Features



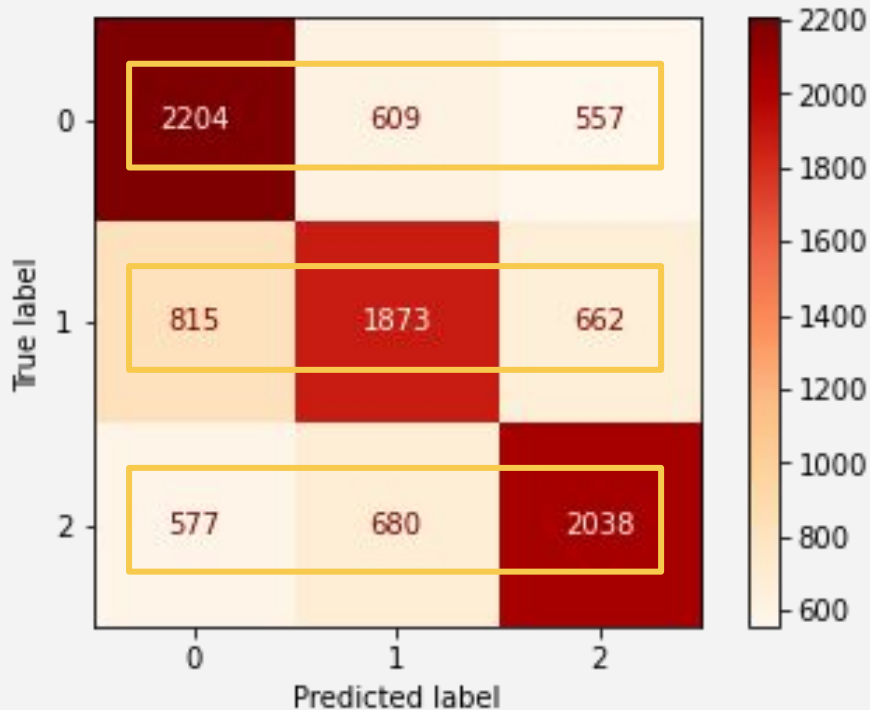
Distribution of Success Across Influential Features



Distribution of Success Across Influential Features



RESULTS: SENSITIVITY

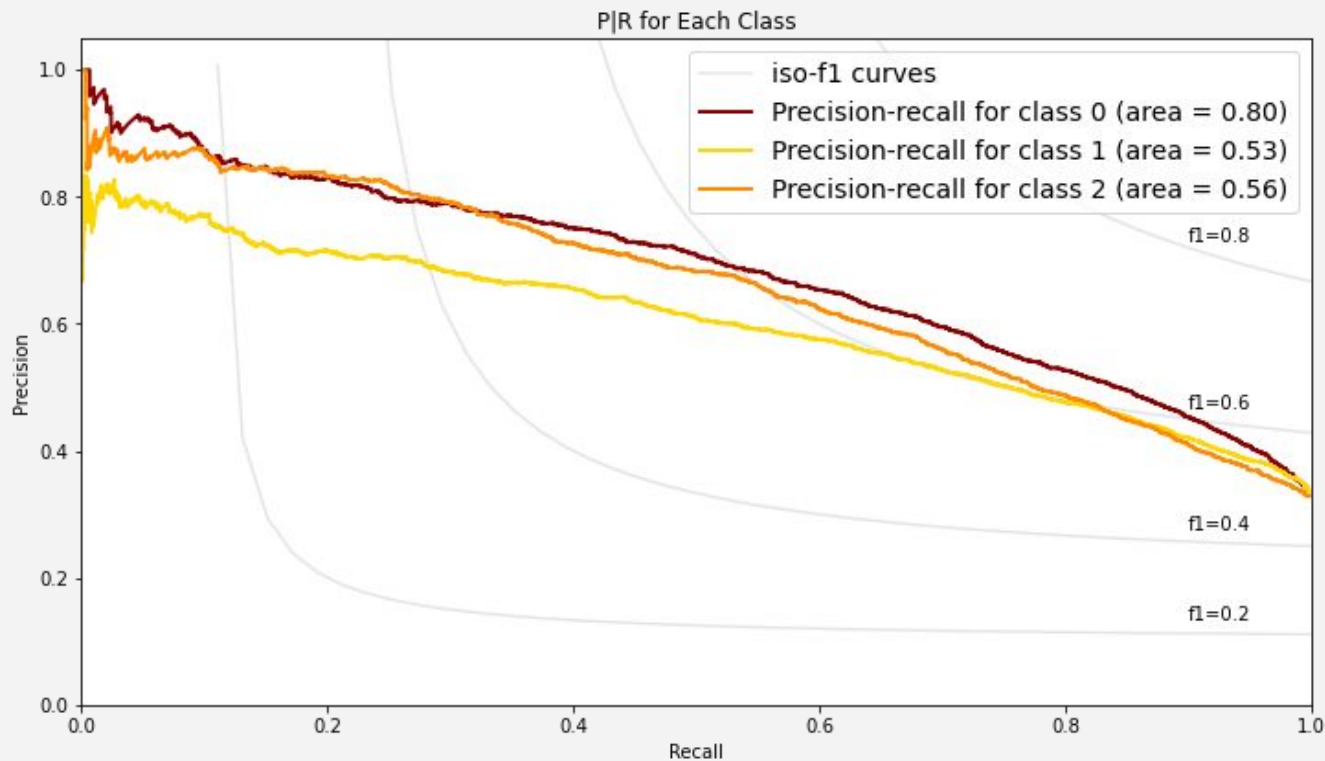


0 . Unsuccessful: 65%

1 . Successful: 56%

2 . Very Successful: 62%

RESULTS: OVERALL PERFORMANCE



0 = Unsuccessful, 1 = Successful, 2 = Very Successful

RECOMMENDATIONS

1.

DIRECTIONAL INDICATOR

All songs falling outside the 'unsuccessful' category have potential

2.

REDUCE WORKLOAD

Lighten workload by ignoring songs classed as 'unsuccessful'

3.

GENRE DRIVEN

For more specific feature recommendations, build out genre-specific models

FUTURE WORK

1 .

Focus on genre-specific
models

2 .

Adjust classes to a binary
format of Unsuccessful/
Successful only

THANK YOU!

Questions?
Reach out!

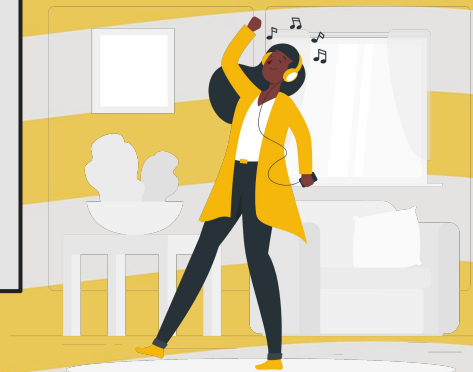


[Say hello!](#)

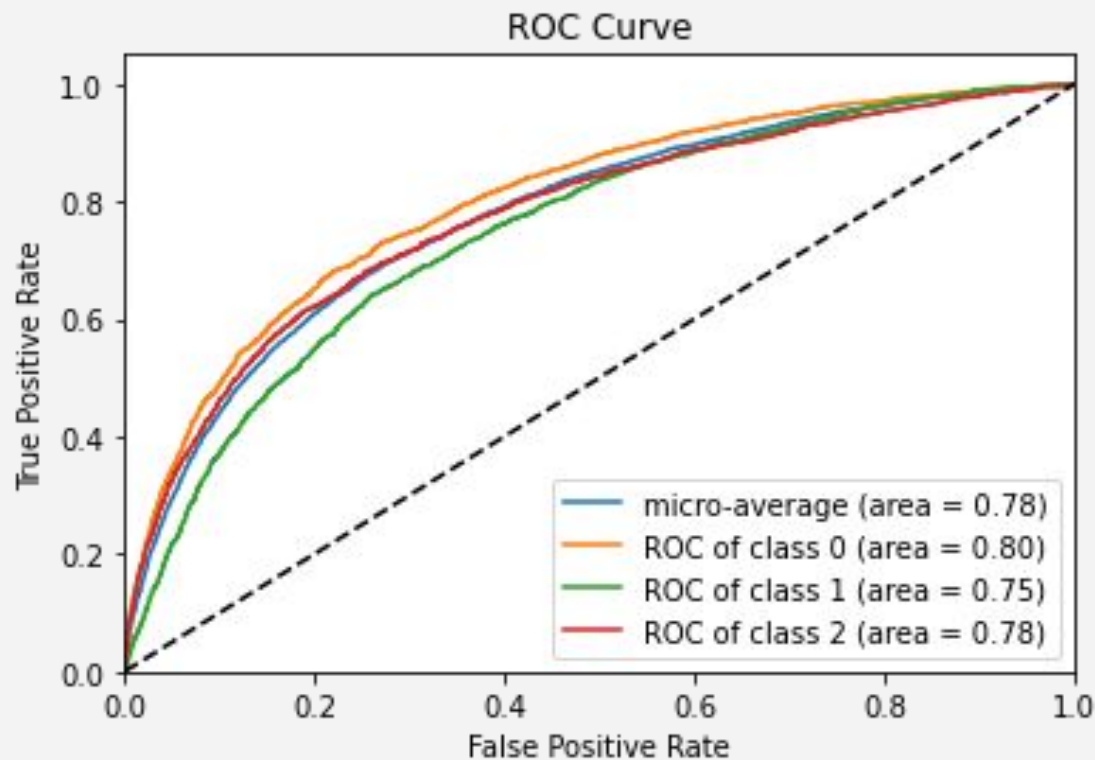


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APPENDIX: ROC CURVE

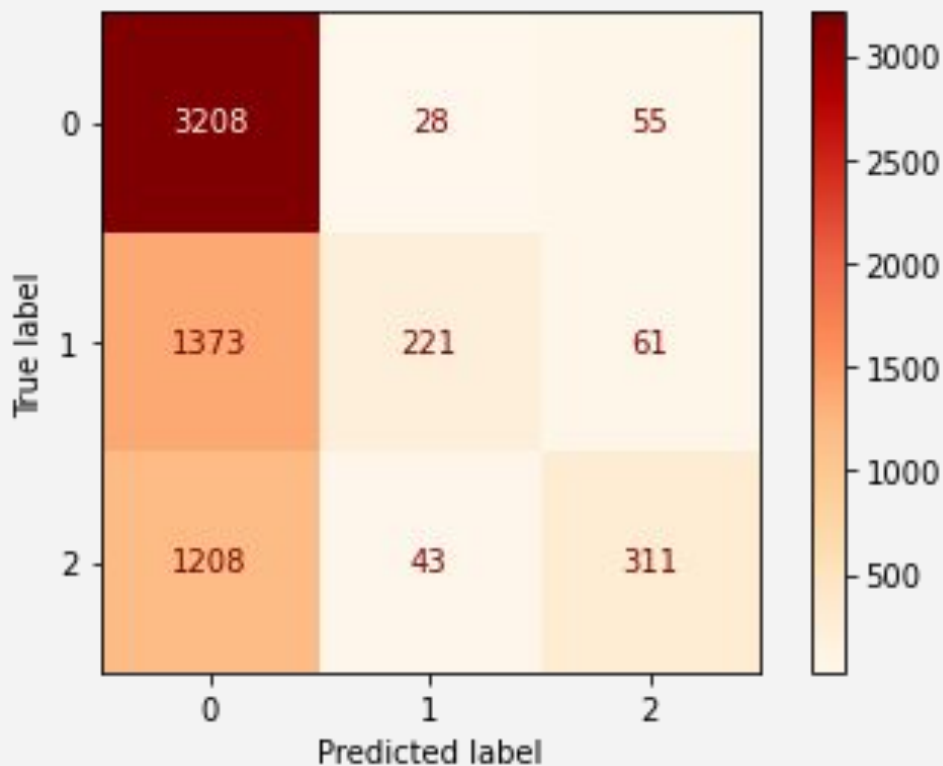


0 = Unsuccessful, 1 = Successful, 2 = Very Successful

APPENDIX: EVALUATION METRICS

	precision	recall	f1-score	support
0	0.613	0.654	0.633	3370
1	0.592	0.559	0.575	3350
2	0.626	0.619	0.622	3295
accuracy			0.611	10015
macro avg	0.610	0.611	0.610	10015
weighted avg	0.610	0.611	0.610	10015

APPENDIX: CONFUSION MATRIX



Pre-SMOTE

0 = Unsuccessful, 1 = Successful, 2 = Very Successful

APPENDIX: EVALUATION METRICS

	precision	recall	f1-score	support
0	0.657	0.868	0.748	3291
1	0.587	0.368	0.452	1655
2	0.604	0.435	0.506	1562
accuracy			0.637	6508
macro avg	0.616	0.557	0.569	6508
weighted avg	0.627	0.637	0.615	6508