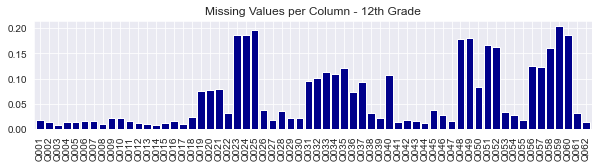
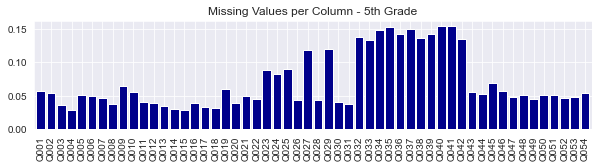
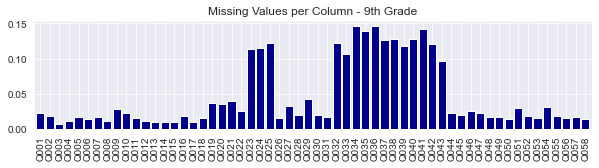
**Data Cleaning**



Data Cleaning - Missing Values per Column - 12th Grade



Data Cleaning - Missing Values per Column - 5th Grade

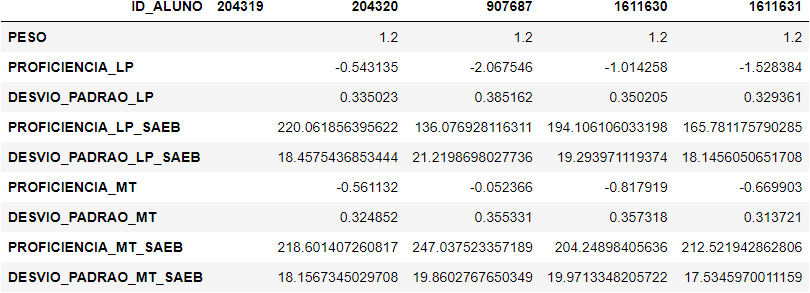


Data Cleaning - Missing Values per Column - 9th Grade

**Data Cleaning**



Data Cleaning - Dict\_9th\_Grade



Data Cleaning - Grades\_Cols\_Head

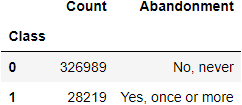


Data Cleaning - Grades\_Ids\_Table\_Head

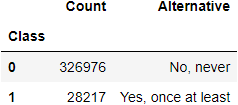


Data Cleaning - Main\_Table\_Head

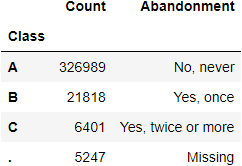
**Data Transformation**



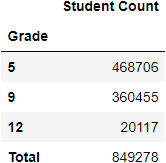
Data Transformation - Class\_Count\_Filtered



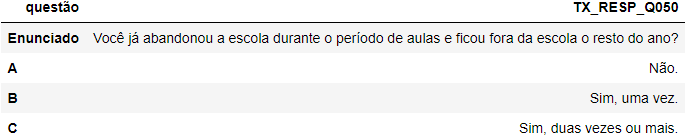
Data Transformation - Class\_Count\_Filtered\_Grades



Data Transformation - Class\_Count\_Original

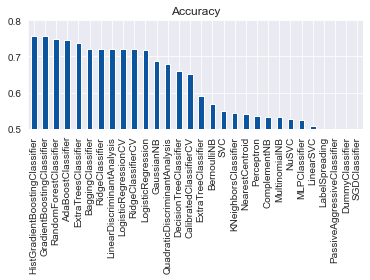


Data Transformation - Student\_Count

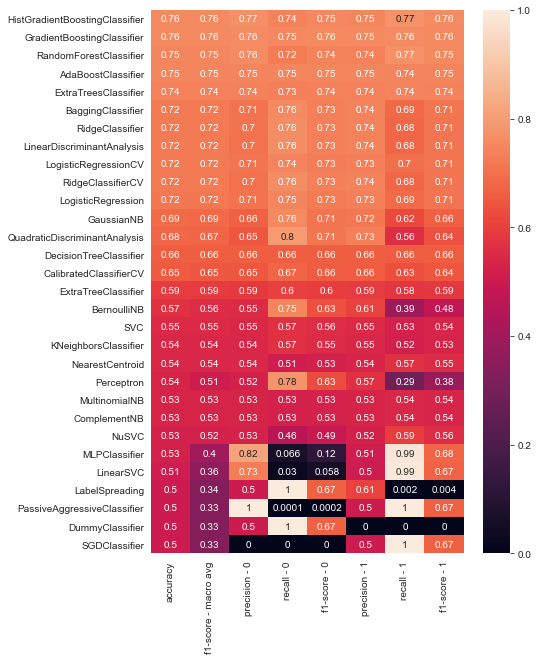


Data Transformation - Target\_Variable\_Info

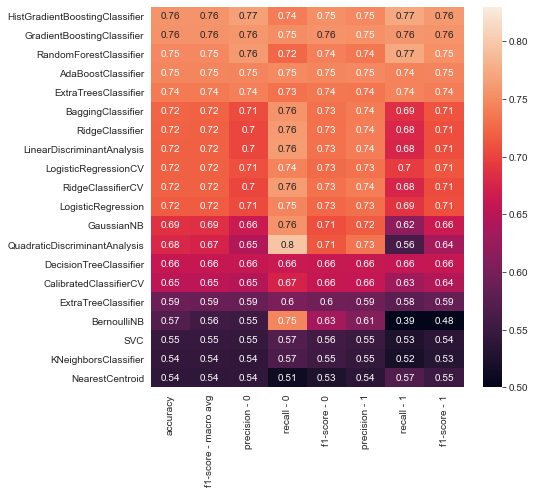
**Evaluation**



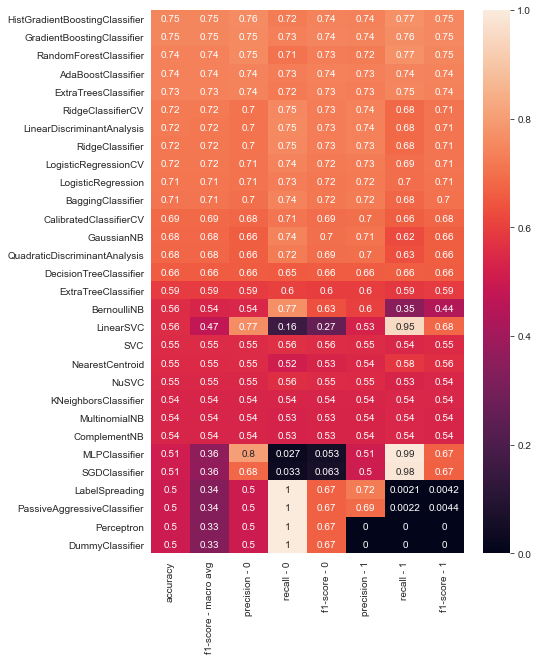
Evaluation - Classification\_Comparison\_Barplot



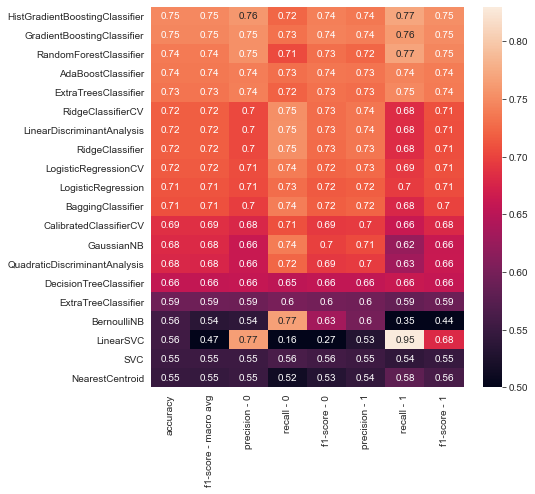
Evaluation - Classification\_Comparison\_Heatmap



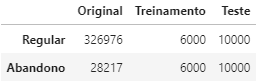
Evaluation - Classification\_Comparison\_Heatmap\_head



Evaluation - Model\_Comparison\_Heatmap



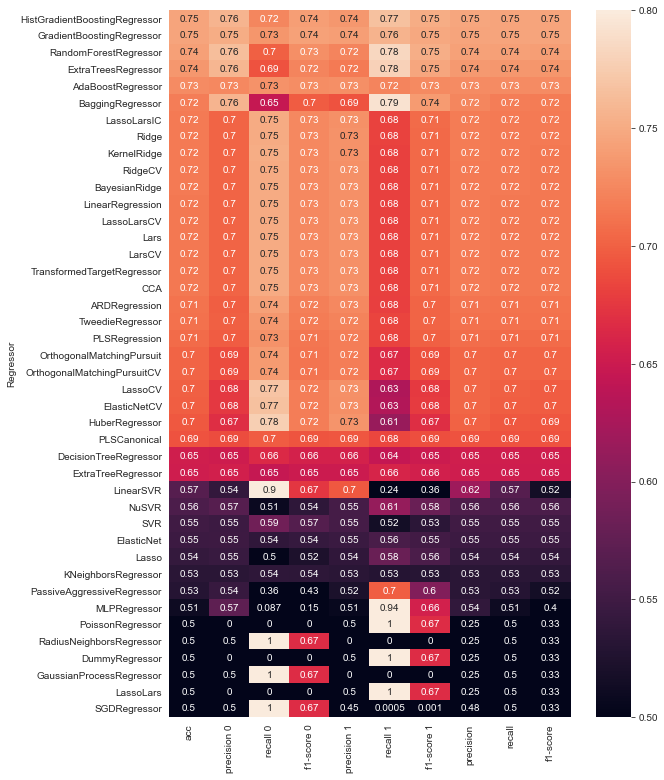
Evaluation - Model\_Comparison\_Heatmap\_head



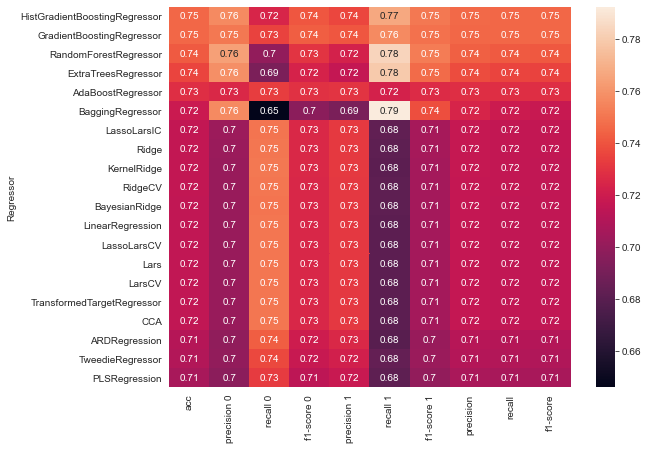
Evaluation - Model\_Comparison\_Sampling



Evaluation - Regression - Execution Time

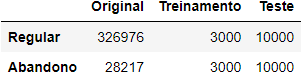


Evaluation - Regression\_Comparison\_Heatmap

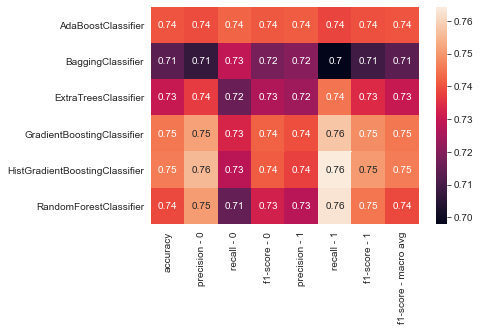


Evaluation - Regression\_Comparison\_Heatmap\_head

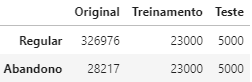
**Evaluation**



Evaluation - Sampling

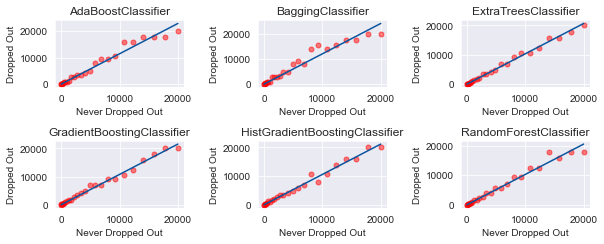


Model\_Comparison\_Heatmap



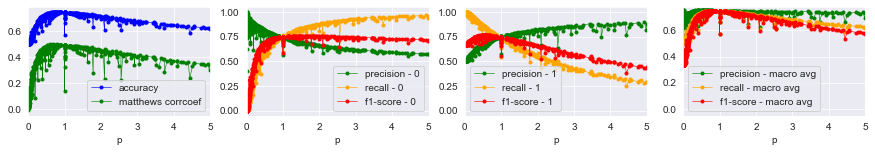
Optimization\_Sampling

**Class Proportion Optimization**

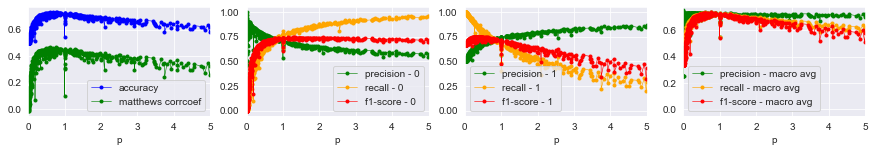


Class Proportion Optimization - 2D Regression

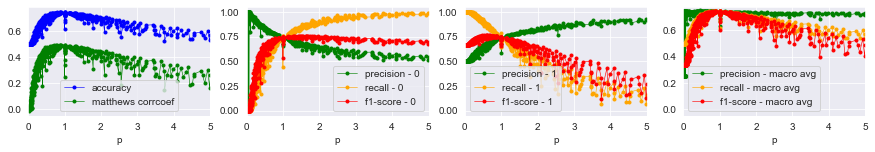
**Class Proportion Optimization Line Plots**



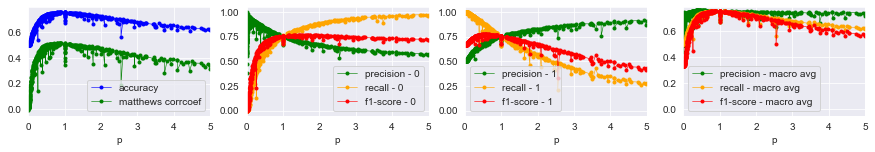
Line Plots - AdaBoostClassifier



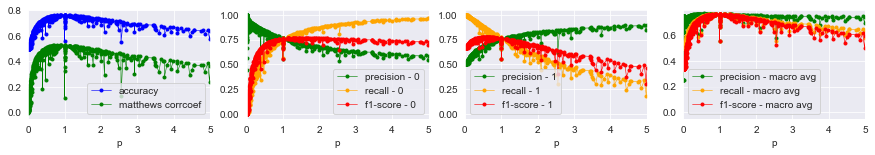
Line Plots - BaggingClassifier



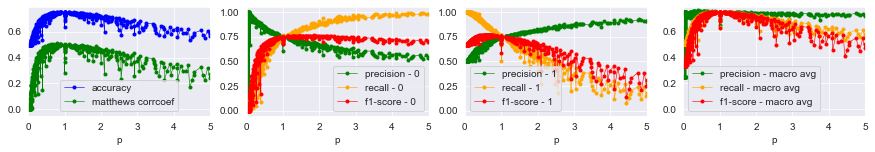
Line Plots - ExtraTreesClassifier



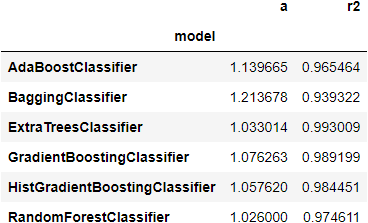
Line Plots - GradientBoostingClassifier



Line Plots - HistGradientBoostingClassifier

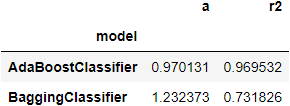


Line Plots - RandomForestClassifier

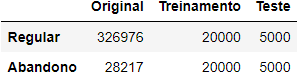


Optimal Class Proportions - Regression

**Class Proportion Optimization**

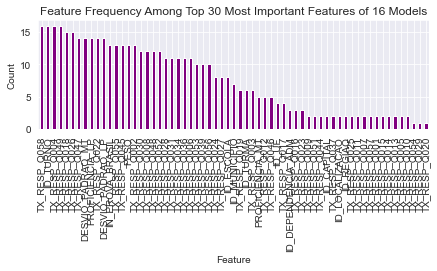


Class Proportion Optimization - Optimal Class Proportions - Regression

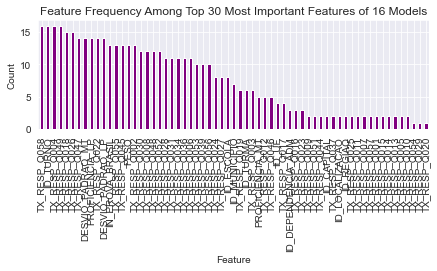


Class Proportion Optimization - Sampling

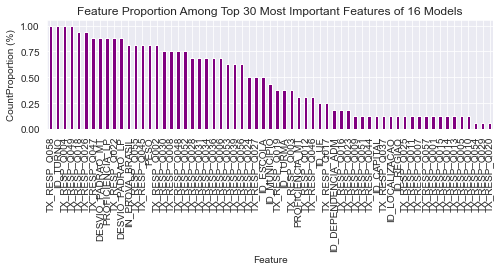
**Feature Importance**



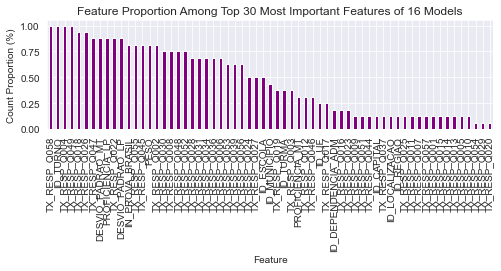
Feature Importance - Feature Frequency Barplot - Top 10



Feature Importance - Feature Frequency Barplot - Top 30



Feature Importance - Frequency Proportion Barplot - Top 10

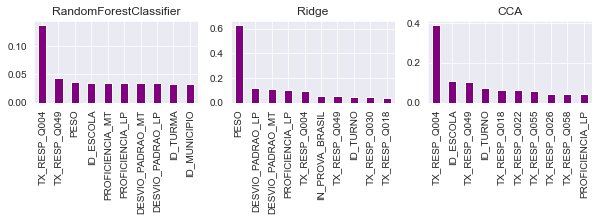


Feature Importance - Frequency Proportion Barplot - Top 30

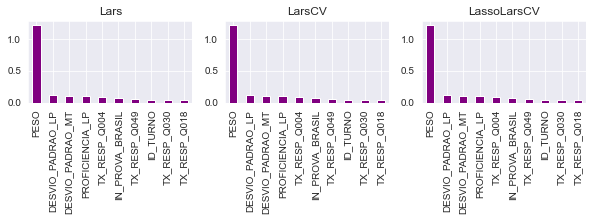
**Feature Importance Per Model**



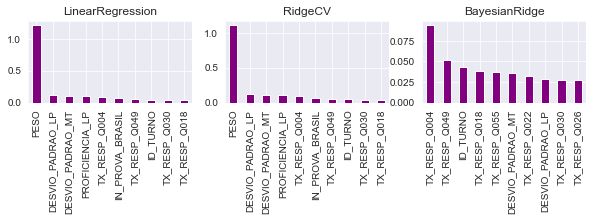
Per Model - Bar plots - 1



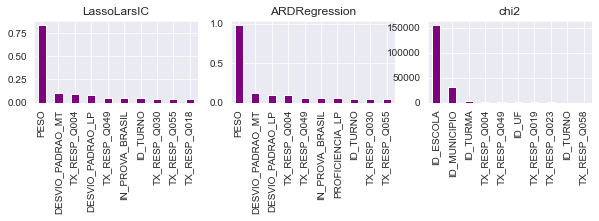
Per Model - Bar plots - 2



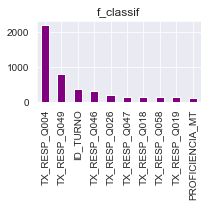
Per Model - Bar plots - 3



Per Model - Bar plots - 4



Per Model - Bar plots - 5

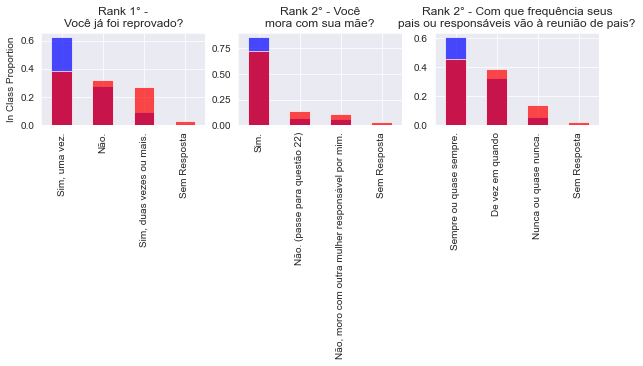


Per Model - Bar plots - 6

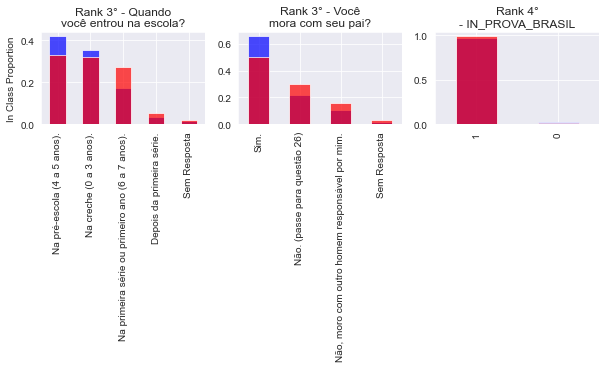
**Feature Importance Feature Proportion**



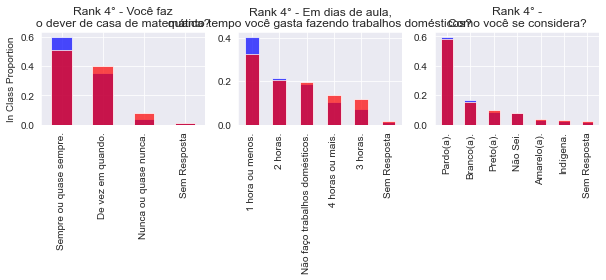
Feature Proportion - In Class - 1



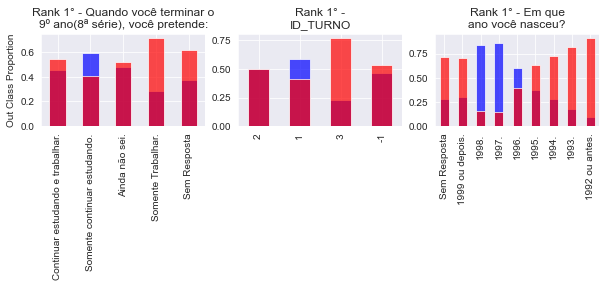
Feature Proportion - In Class - 2



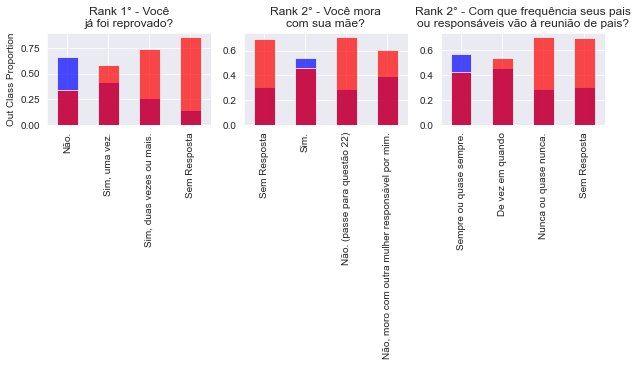
Feature Proportion - In Class - 3



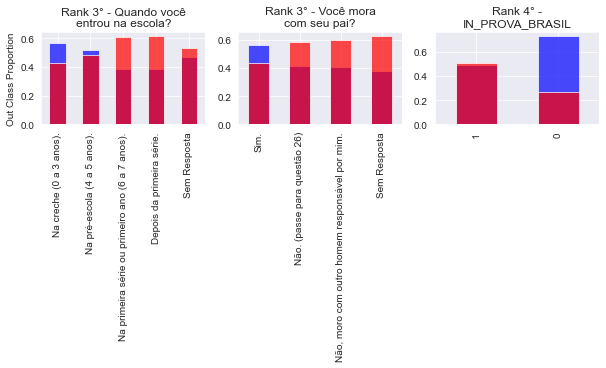
Feature Proportion - In Class - 4



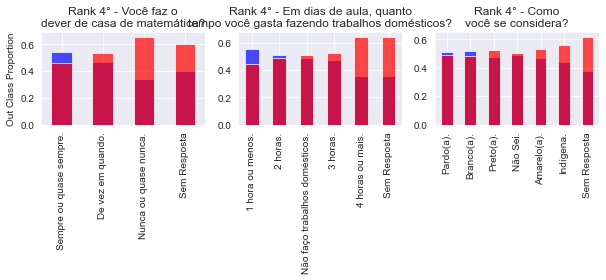
Feature Proportion - Out Class - 1



Feature Proportion - Out Class - 2

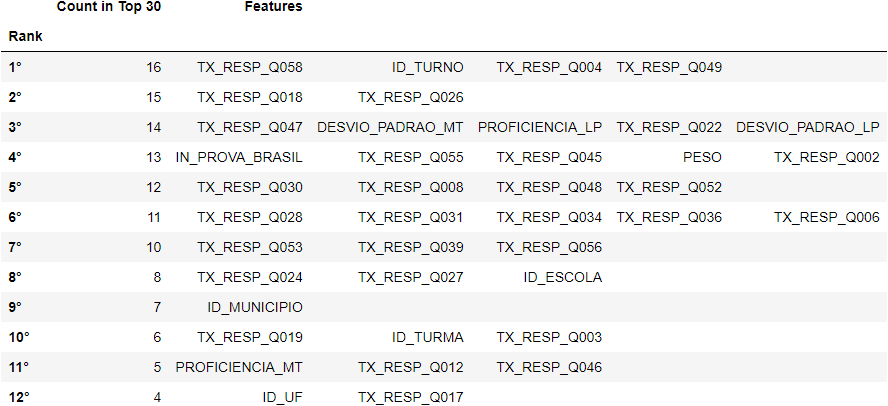


Feature Proportion - Out Class - 3

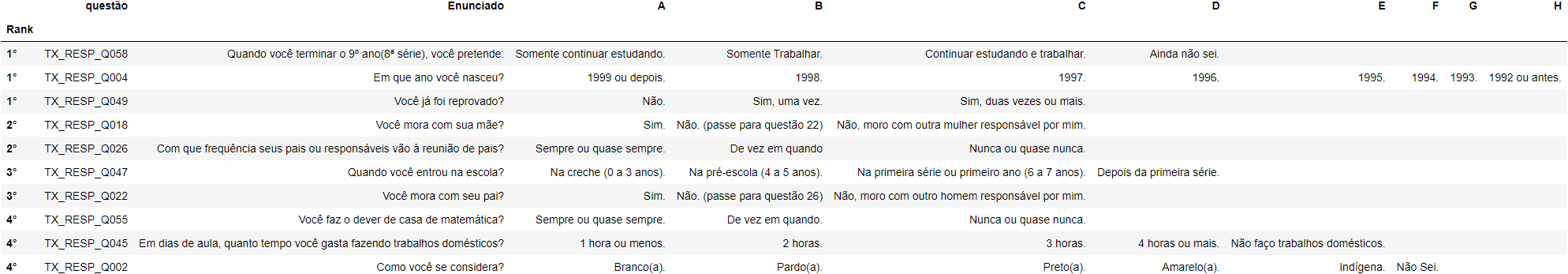


Feature Proportion - Out Class - 4

**Feature Importance**



Feature Importance - Feature Rank Head



Feature Importance - Selected Questions