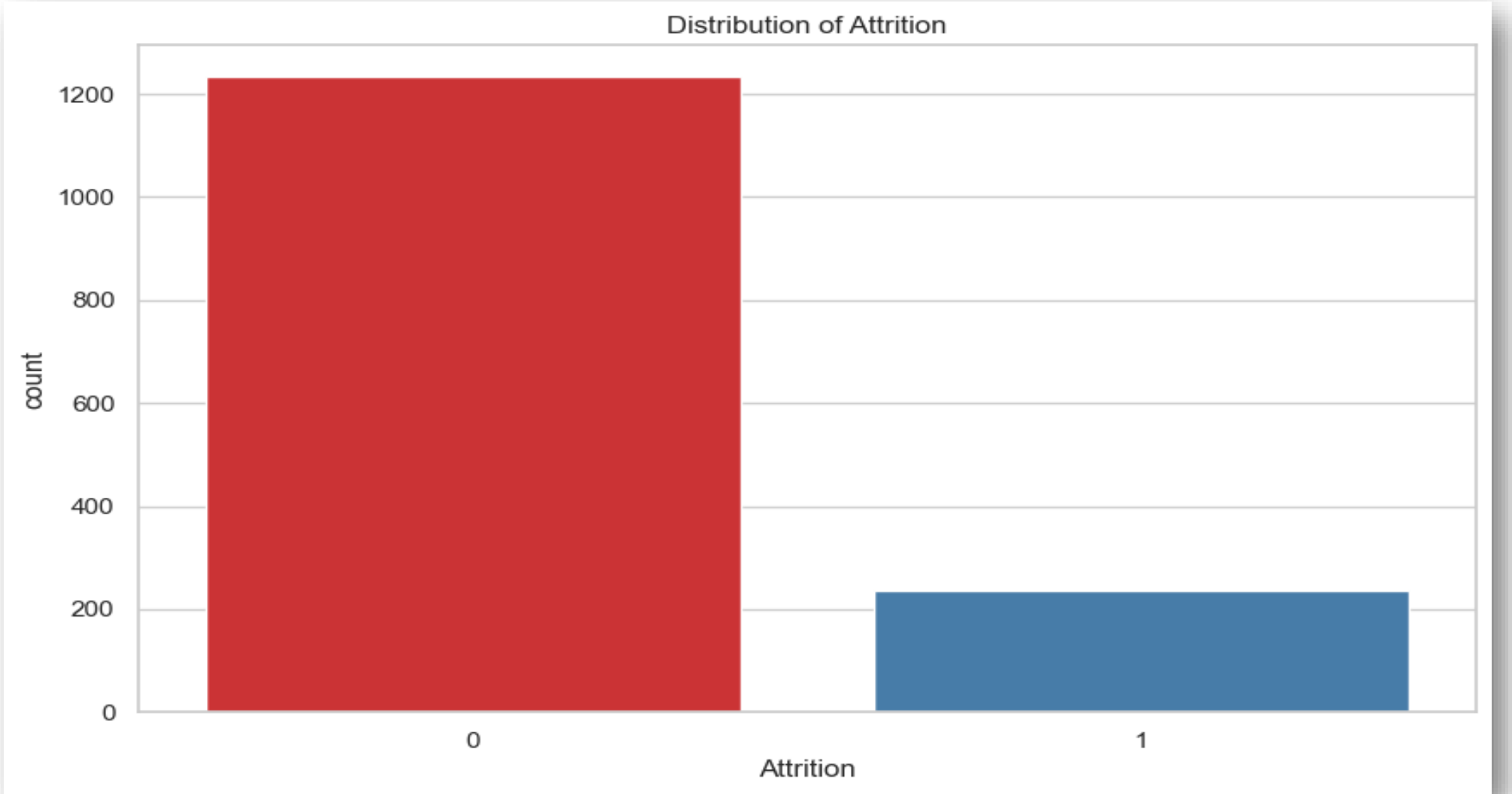
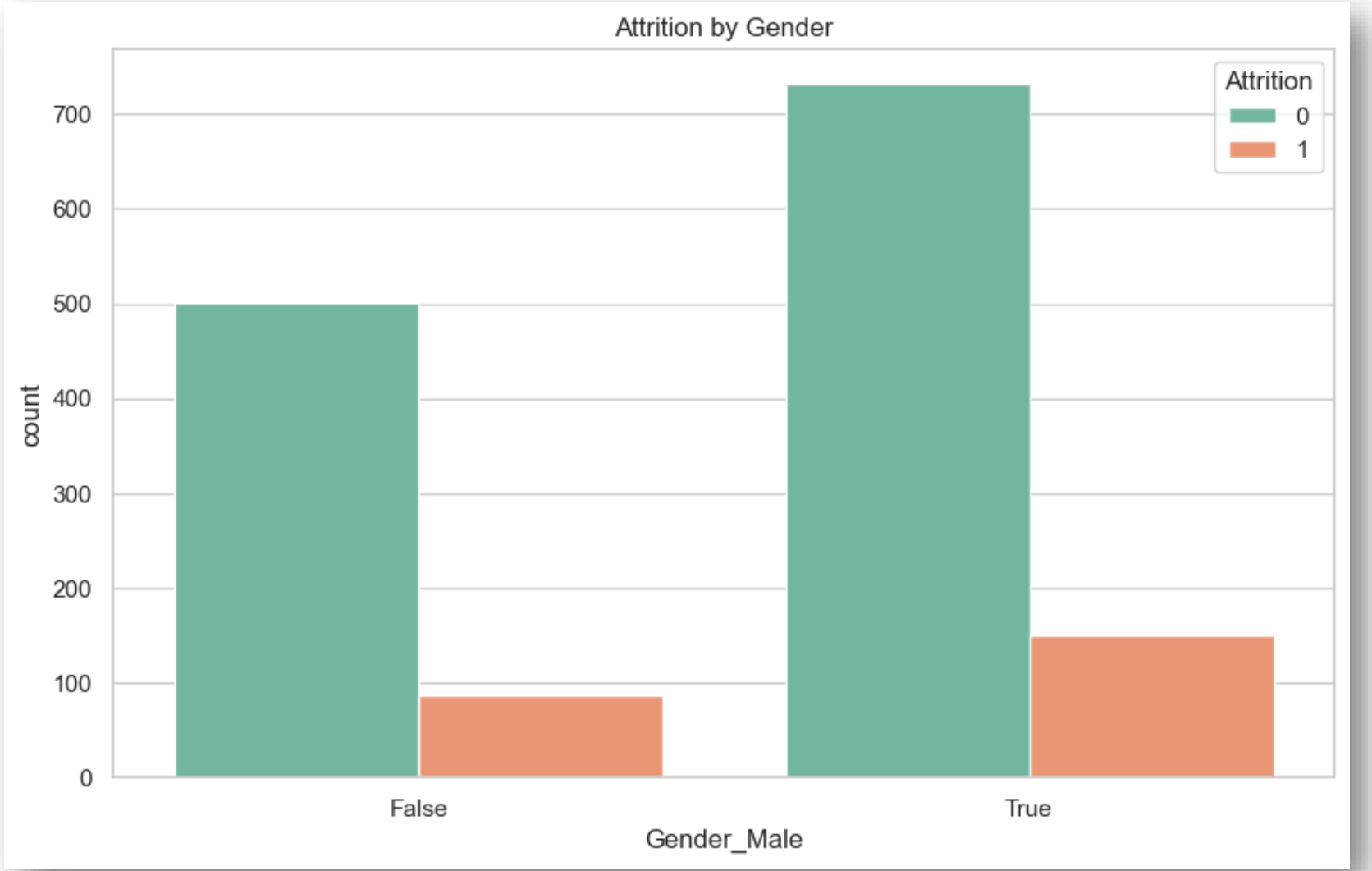
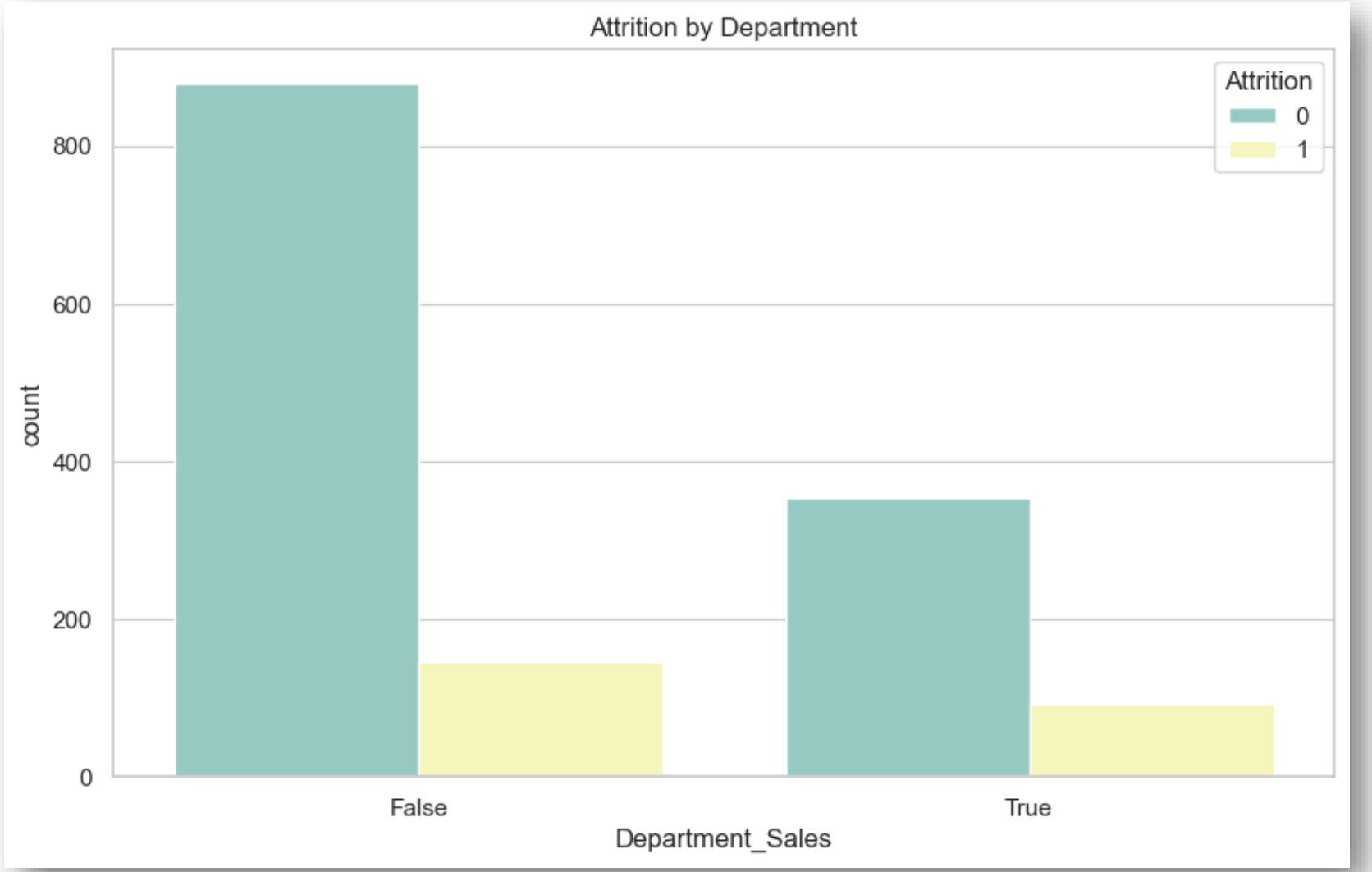
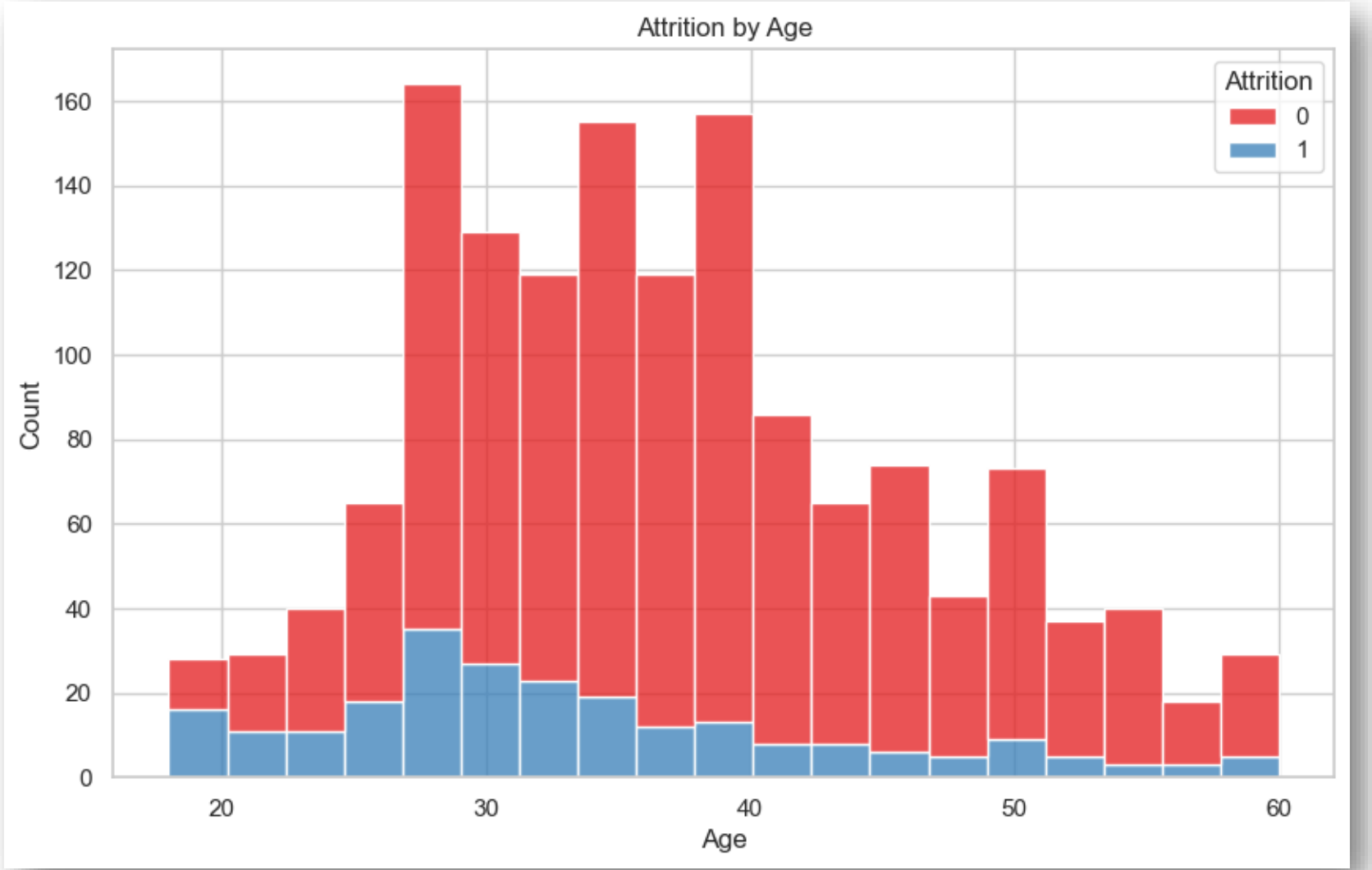
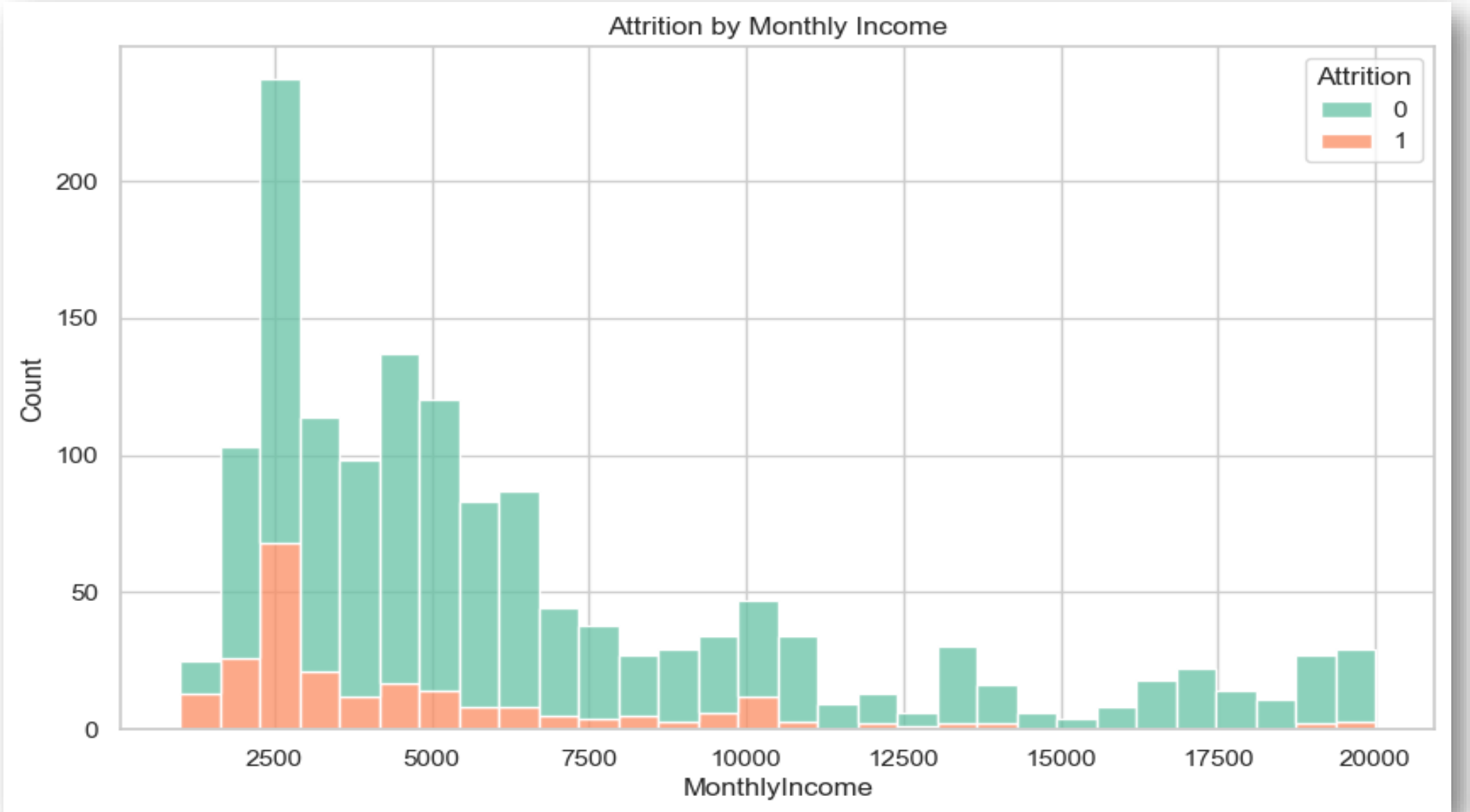
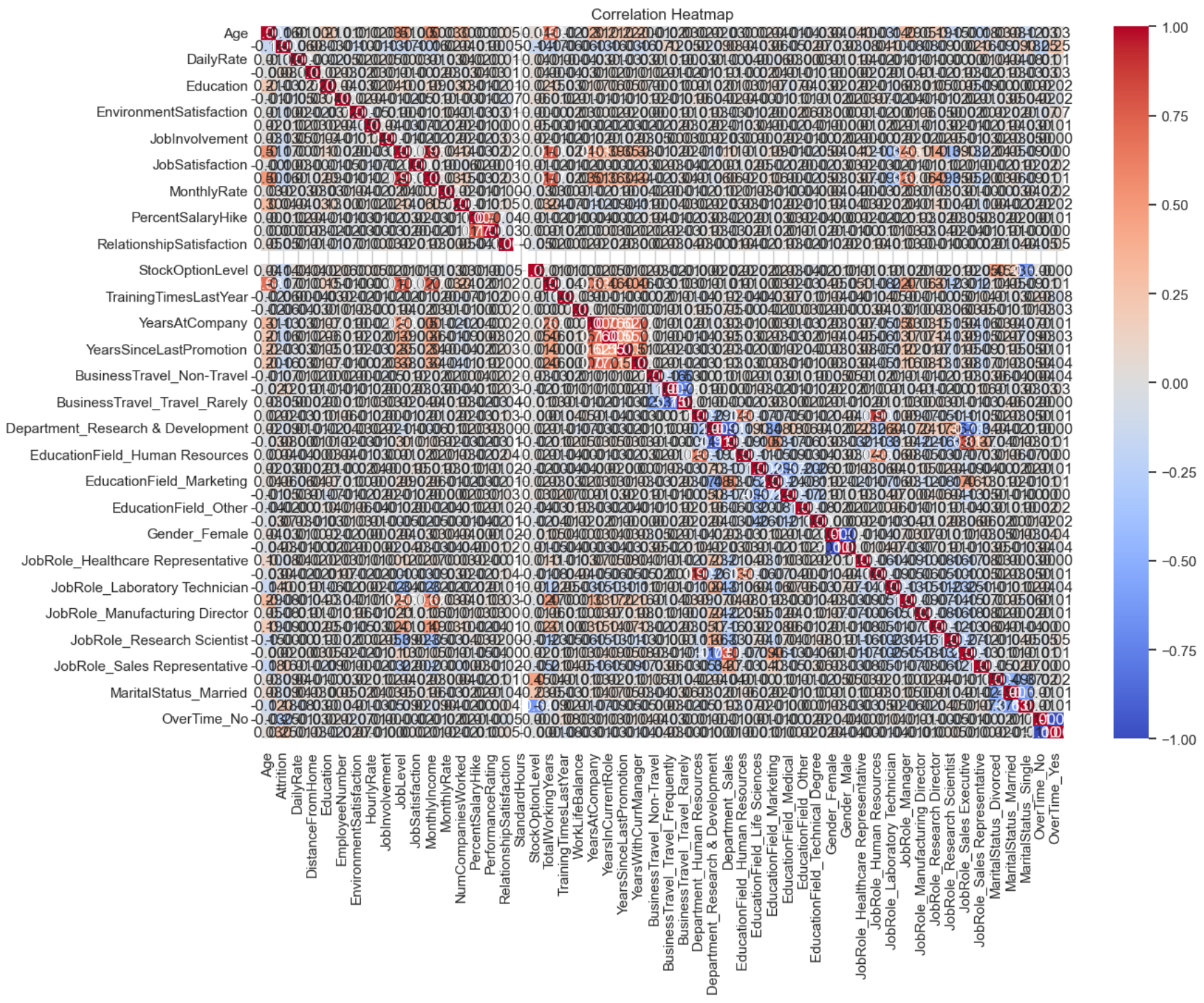

Distribution of Attrition
1200
1000
800
600
400
200
0
count
0
1
Attrition

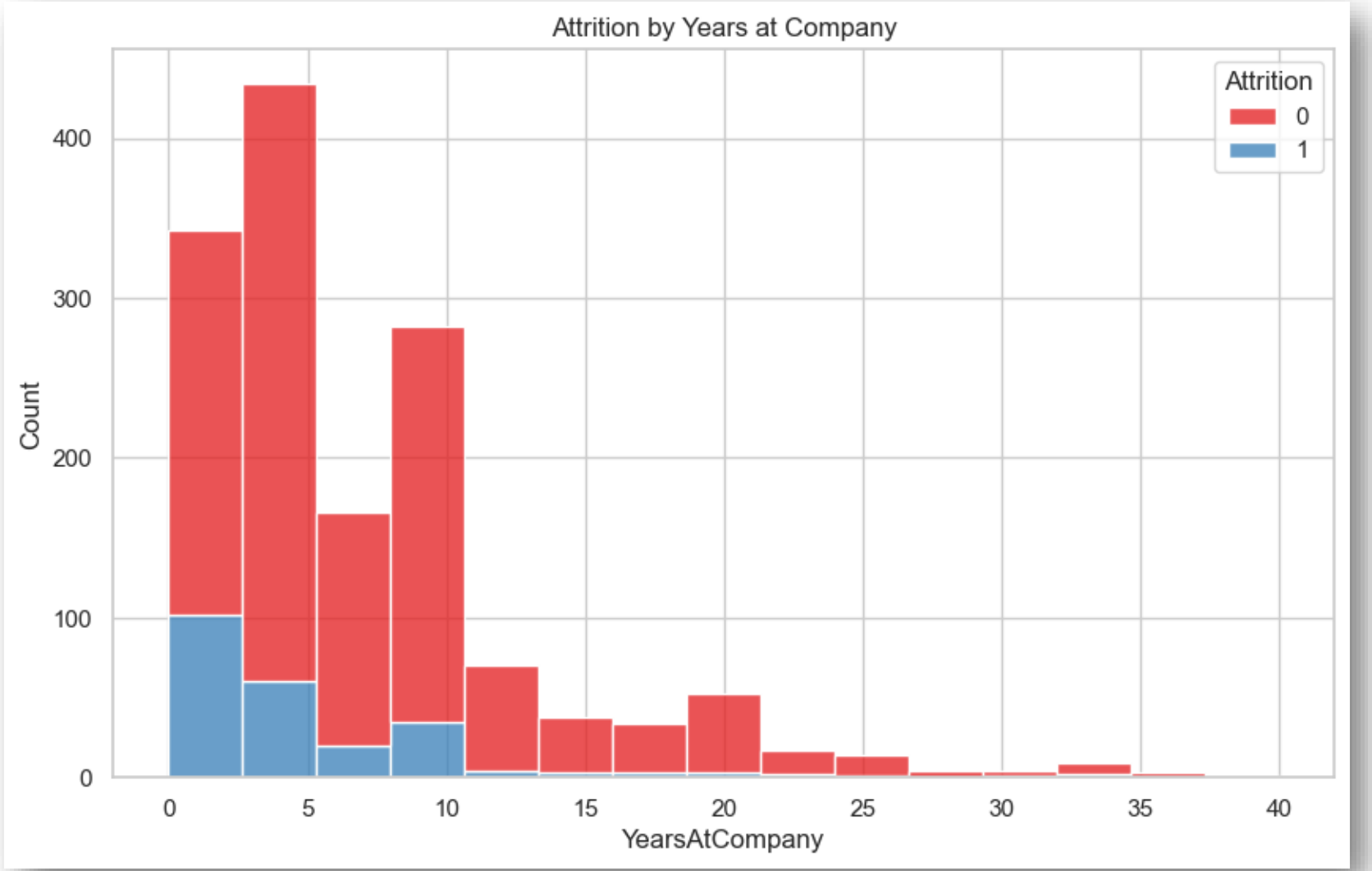

Attrition by Gender
Attrition
0
1
700
600
500
400
300
200
100
0
count
False
True
Gender_Male

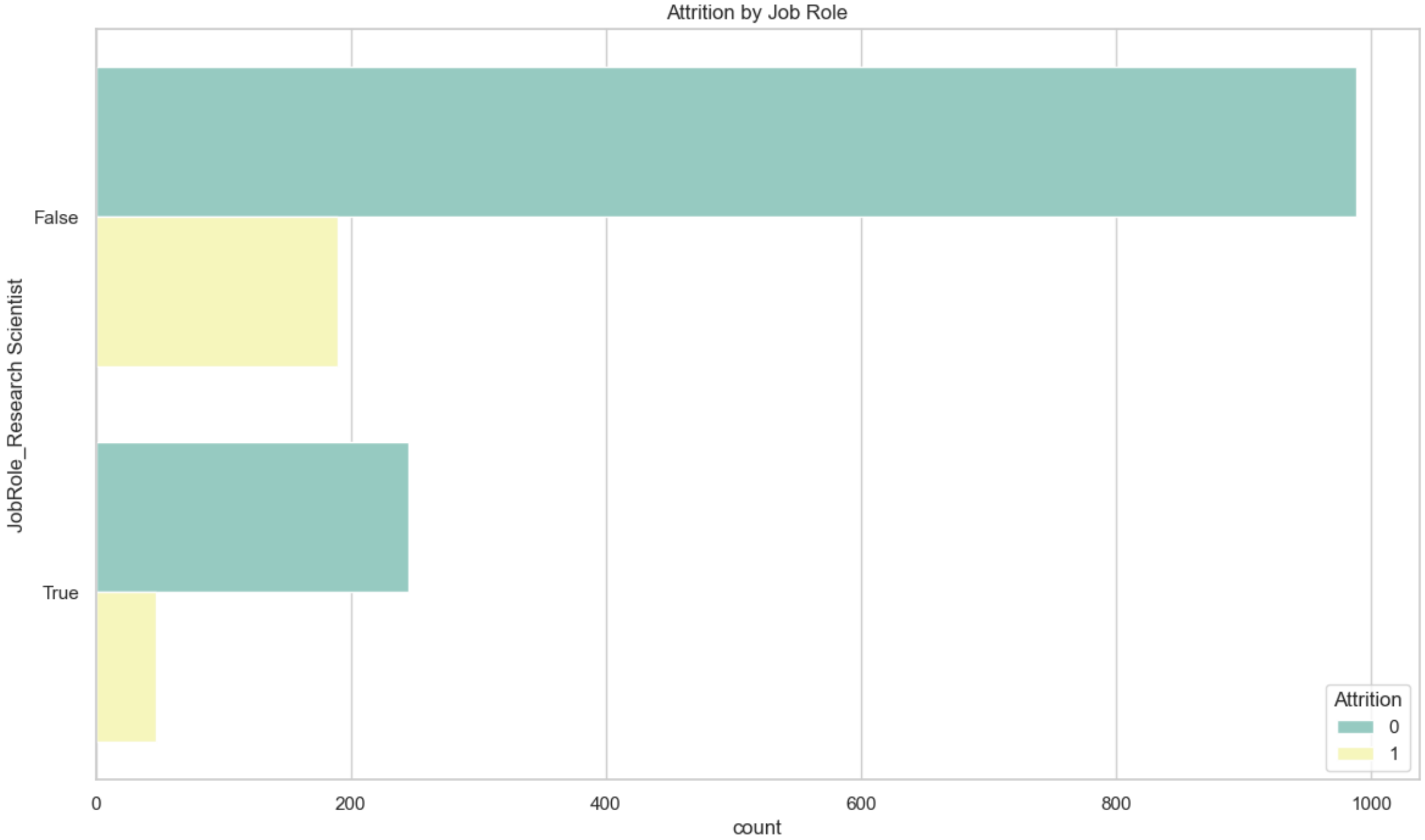

Attrition by Department
Attrition
0
1
800
600
400
200
0
count
False
True
Department_Sales

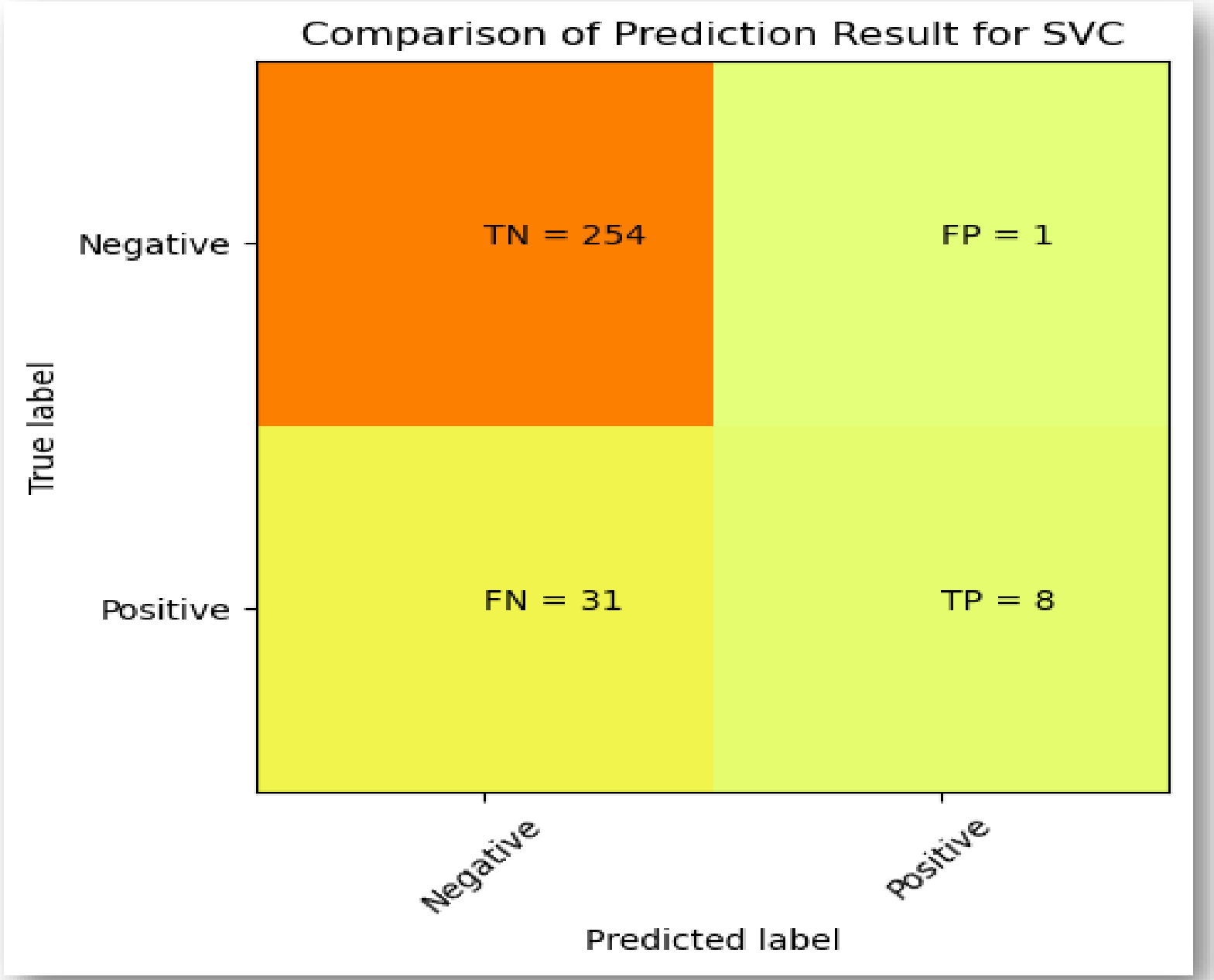

Attrition by Age
Attrition
0
1
Count
0
20
40
60
80
100
120
140
160
20
30
40
50
60
Age

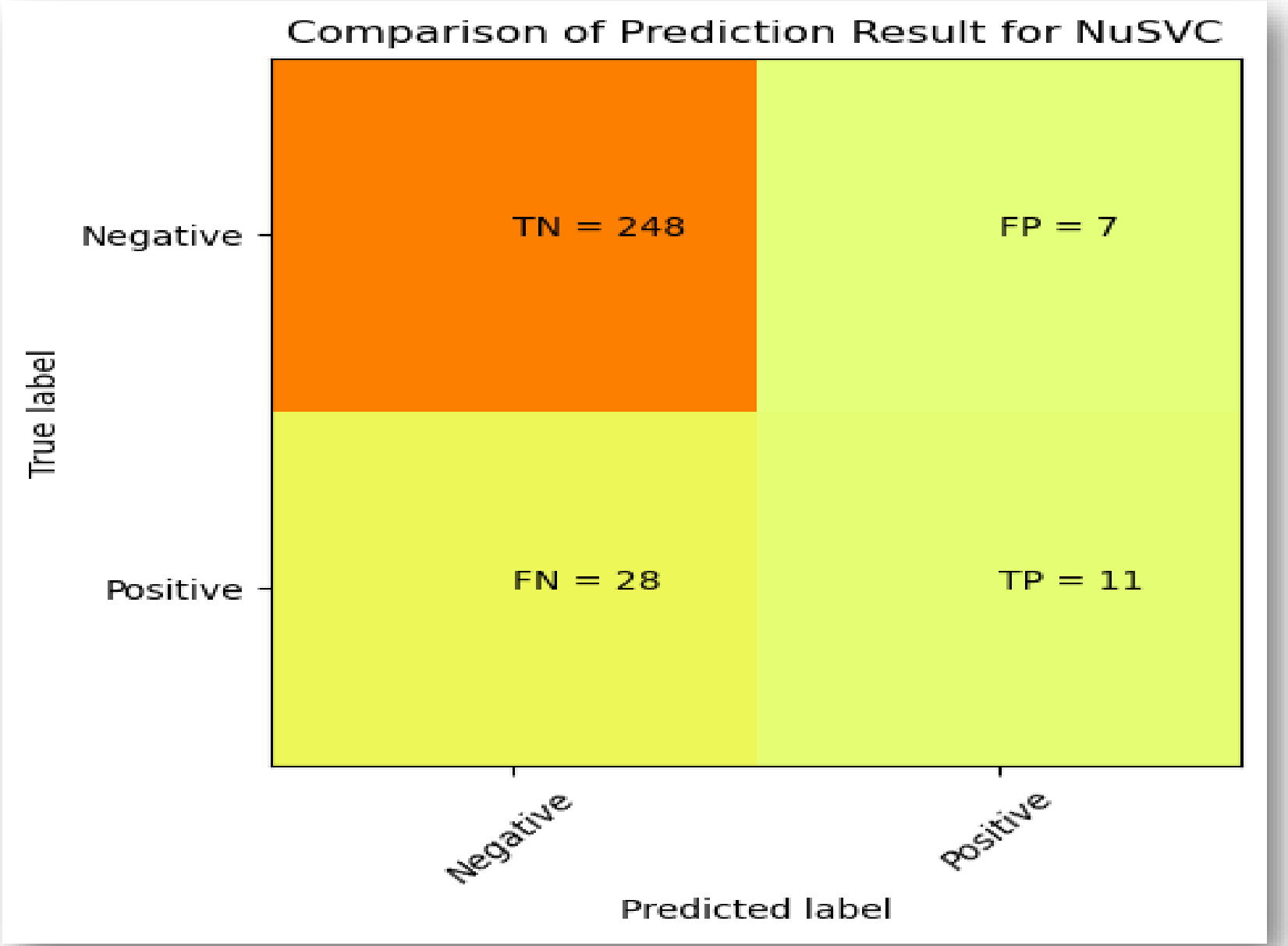

Attrition by Monthly Income
Attrition
0
1
Count
200
150
100
50
0
2500
5000
7500
10000
12500
15000
17500
20000
MonthlyIncome

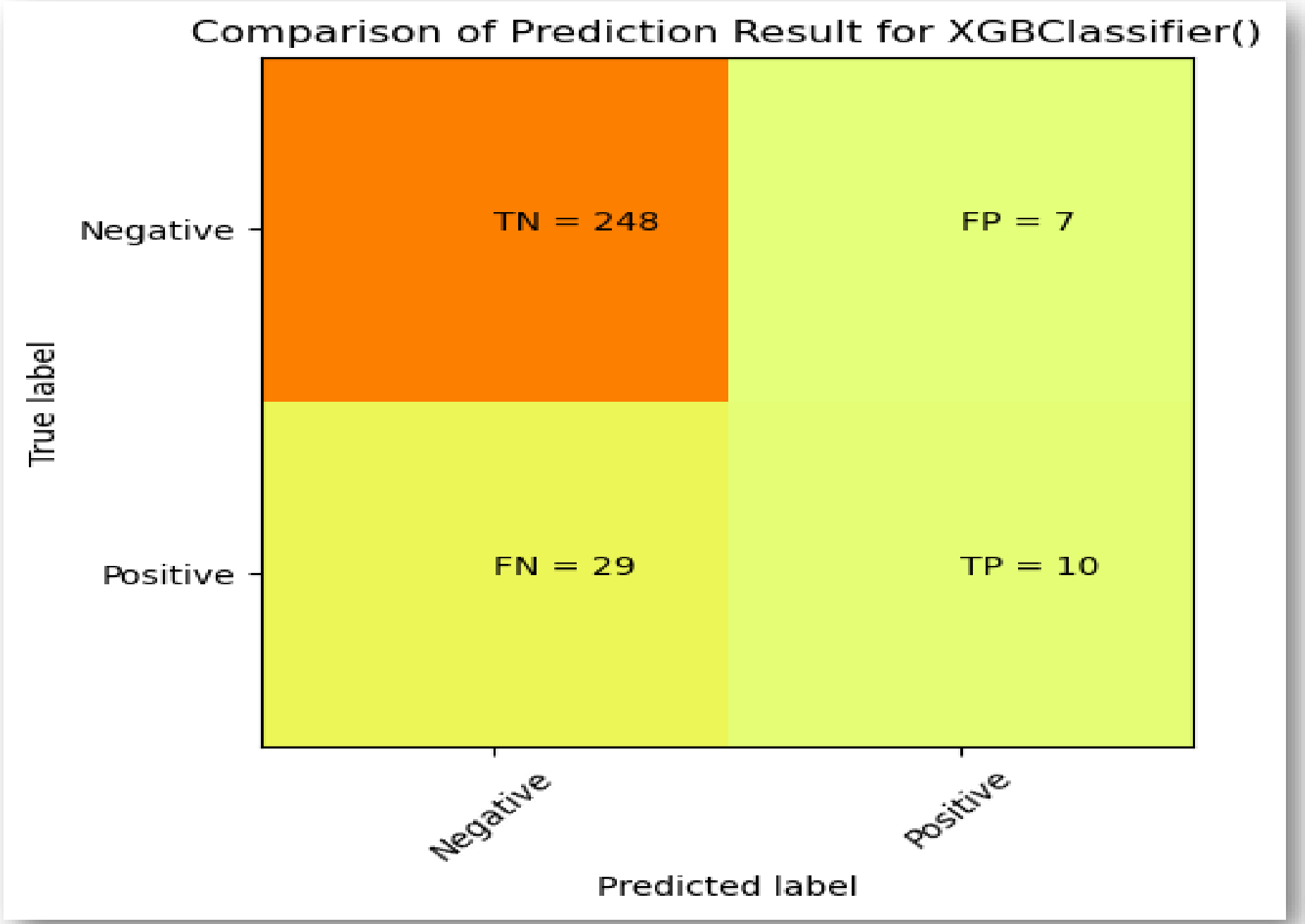

Correlation Heatmap
Age
DailyRate
Education
EnvironmentSatisfaction
JobInvolvement
JobSatisfaction
MonthlyRate
PercentSalaryHike
RelationshipSatisfaction
StockOptionLevel
TrainingTimesLastYear
YearsAtCompany
YearsSinceLastPromotion
BusinessTravel_Non-Travel
BusinessTravel_Travel_Rarely
Department_Research & Development
EducationField_Human Resources
EducationField_Marketing
EducationField_Other
Gender_Female
JobRole_Healthcare Representative
JobRole_Laboratory Technician
JobRole_Manufacturing Director
JobRole_Research Scientist
JobRole_Sales Representative
MaritalStatus_Married
OverTime_No
Age
Attrition
DailyRate
DistanceFromHome
Education
EmployeeNumber
EnvironmentSatisfaction
HourlyRate
JobInvolvement
JobLevel
JobSatisfaction
MonthlyIncome
MonthlyRate
NumCompaniesWorked
PercentSalaryHike
PerformanceRating
RelationshipSatisfaction
StandardHours
StockOptionLevel
TotalWorkingYears
TrainingTimesLastYear
WorkLifeBalance
YearsAtCompany
YearsInCurrentRole
YearsSinceLastPromotion
YearsWithCurrManager
BusinessTravel_Non-Travel
BusinessTravel_Travel_Frequently
BusinessTravel_Travel_Rarely
Department_Human Resources
Department_Research & Development
Department_Sales
EducationField_Human Resources
EducationField_Life Sciences
EducationField_Marketing
EducationField_Medical
EducationField_Other
EducationField_Technical Degree
Gender_Female
Gender_Male
JobRole_Healthcare Representative
JobRole_Human Resources
JobRole_Laboratory Technician
JobRole_Manager
JobRole_Manufacturing Director
JobRole_Research Director
JobRole_Research Scientist
JobRole_Sales Executive
JobRole_Sales Representative
MaritalStatus_Divorced
MaritalStatus_Married
MaritalStatus_Single
OverTime_No
OverTime_Yes
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00

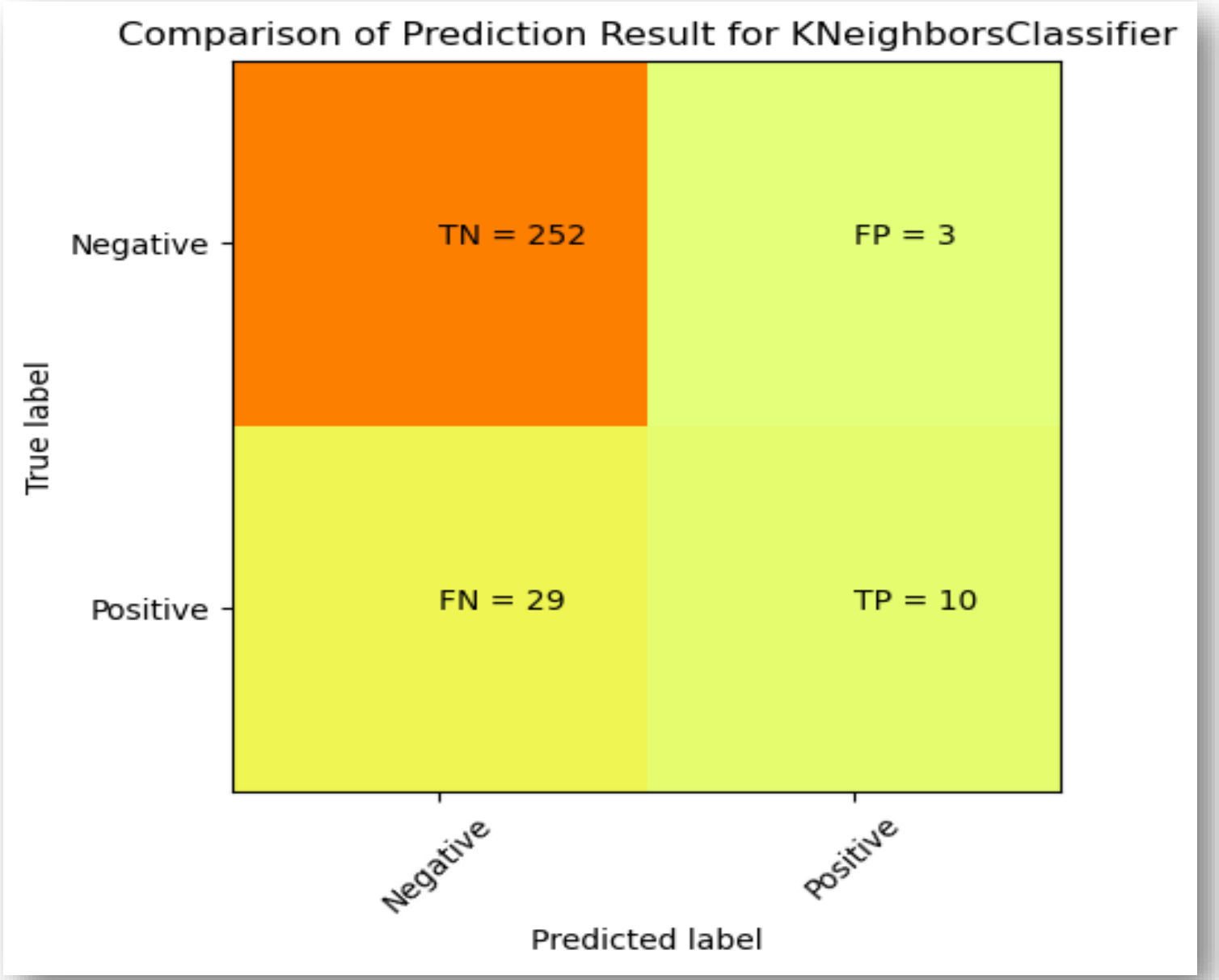

Attrition by Years at Company
Attrition
0
1
Count
400
300
200
100
0
0
5
10
15
20
25
30
35
40
YearsAtCompany


Attrition by Job Role
JobRole_Research Scientist
False
True
0
200
400
600
800
1000
count
Attrition
0
1


Comparison of Prediction Result for SVC
TN = 254
FP = 1
FN = 31
TP = 8
Negative
Positive
True label
Negative
Positive
Predicted label


Comparison of Prediction Result for NuSVC
Negative
Positive
True label
TN = 248
FP = 7
FN = 28
TP = 11
Negative
Positive
Predicted label


Comparison of Prediction Result for XGBClassifier()
TN = 248
FP = 7
FN = 29
TP = 10
Negative
Positive
True label
Negative
Positive
Predicted label


Comparison of Prediction Result for KNeighborsClassifier
TN = 252
FP = 3
FN = 29
TP = 10
Negative
Positive
True label
Negative
Positive
Predicted label