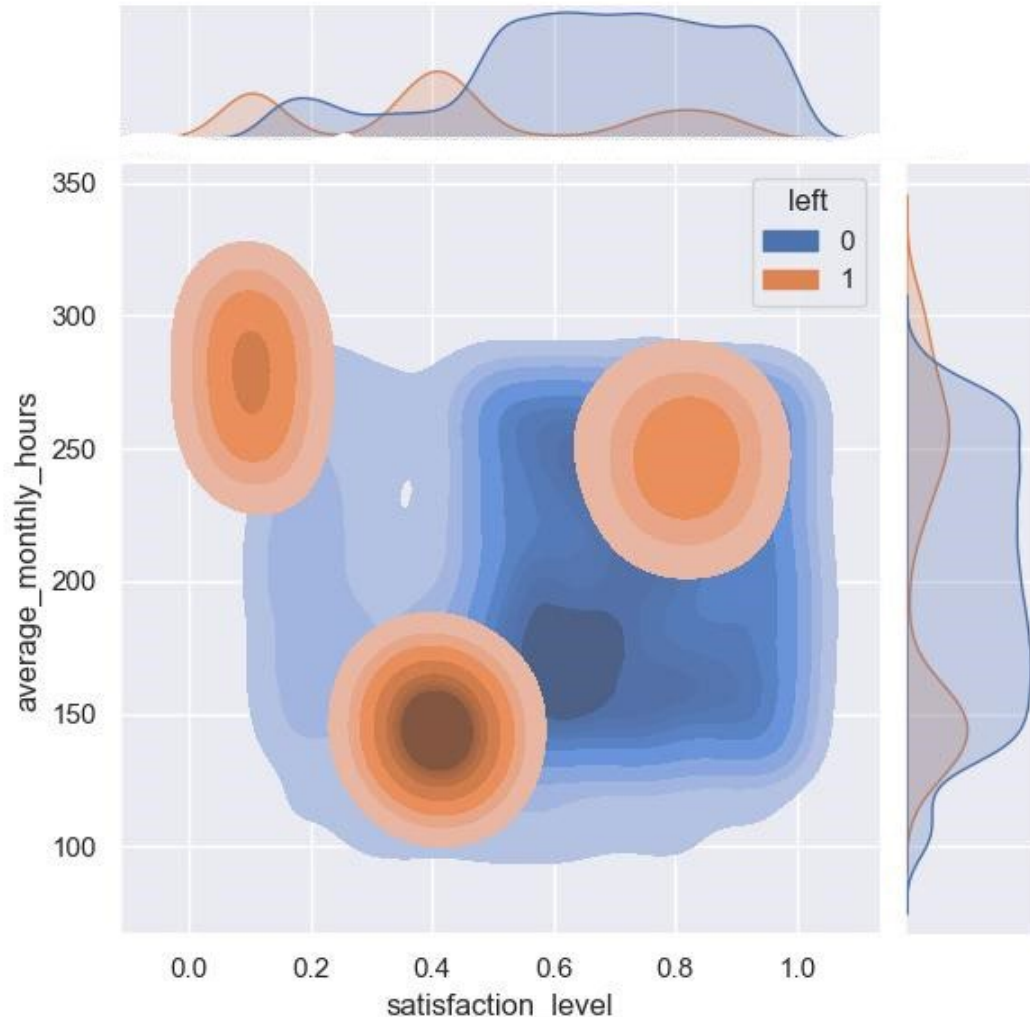# 1. Relationship between satisfaction level and working hours of employees.
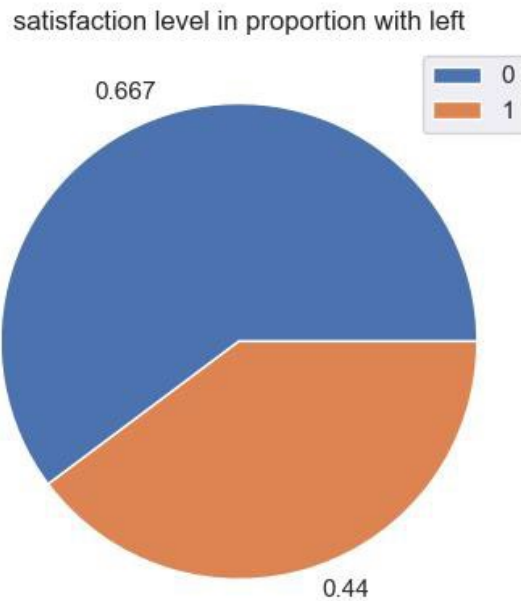
Correlation(r) is found to be -0.084

- Since r is too closer to 0. It shows very little negative & non-linear correlation.
- It has 3 Clusters for left employees
  - **Cluster 1** – The Satisfaction level and Average monthly hours is lesser than their respective Avg. It is the biggest and concentrated cluster.
  - **Cluster 2** – The Satisfaction level is lower and Average monthly hours is higher than their respective Avg.
  - **Cluster 3** – The Satisfaction level and Average monthly hours is greater than their respective Avg. It is the Dispersed cluster.
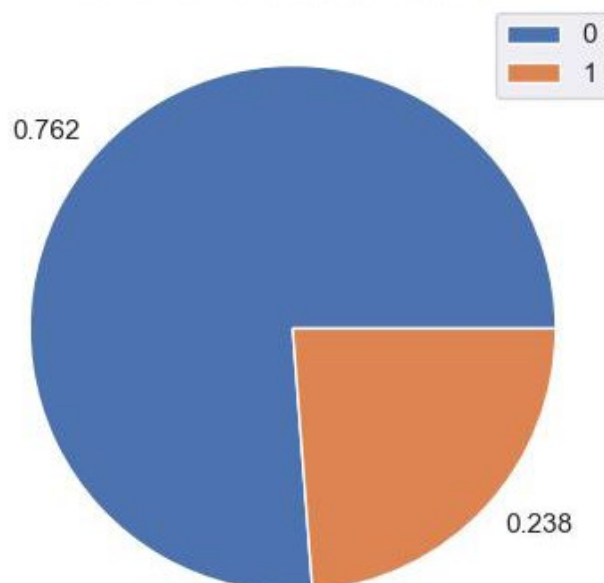
2. EDA – Exploratory Data Analysis

1. The Effect of Satisfaction Level, Department, promotion in last five years, and Salary Level of employees Left.

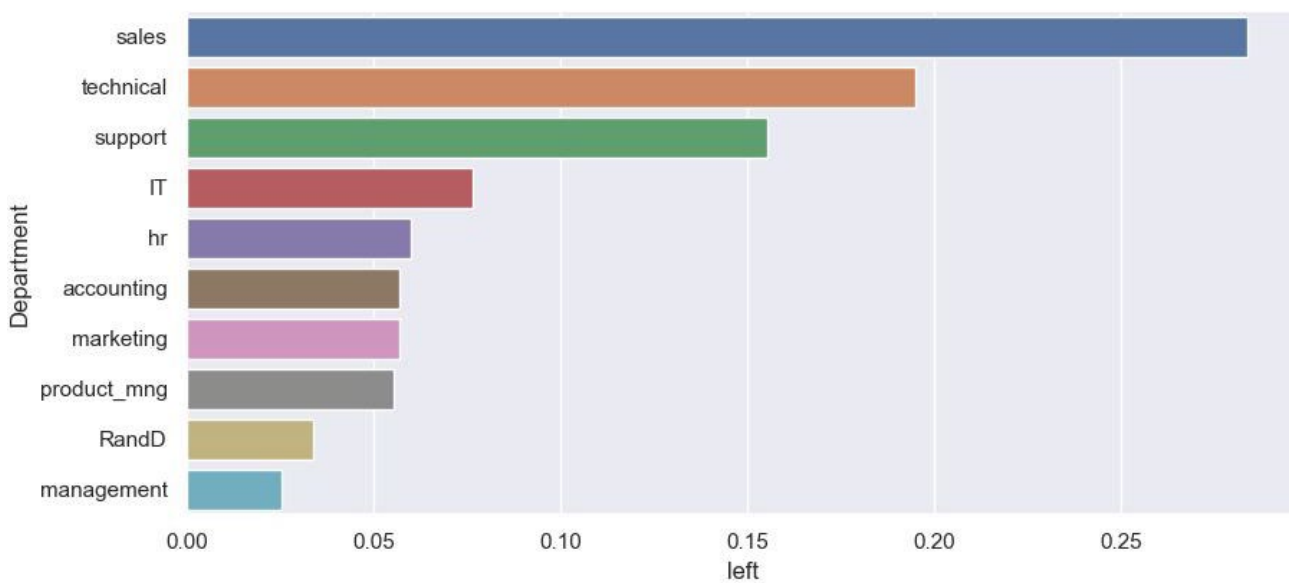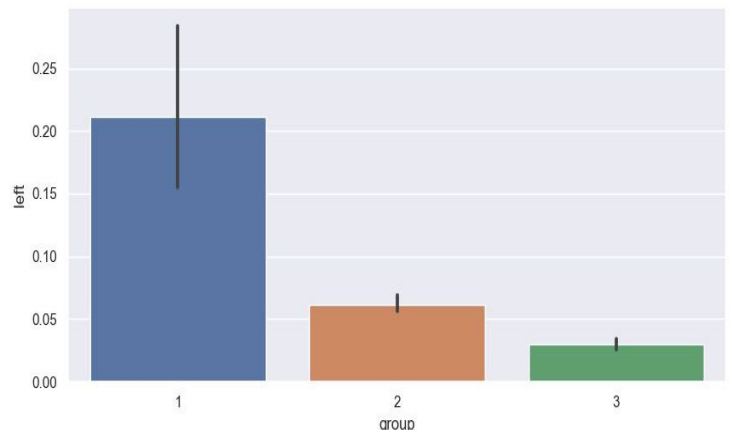- The average satisfaction level of employees who leaves the company is 44%

satisfaction level in proportion with left

2. The 23.8% of employees who got promoted within five years leaves the company.

3. The 63.3% Employees who quit their job belongs to Sales, Technical & Support Departments

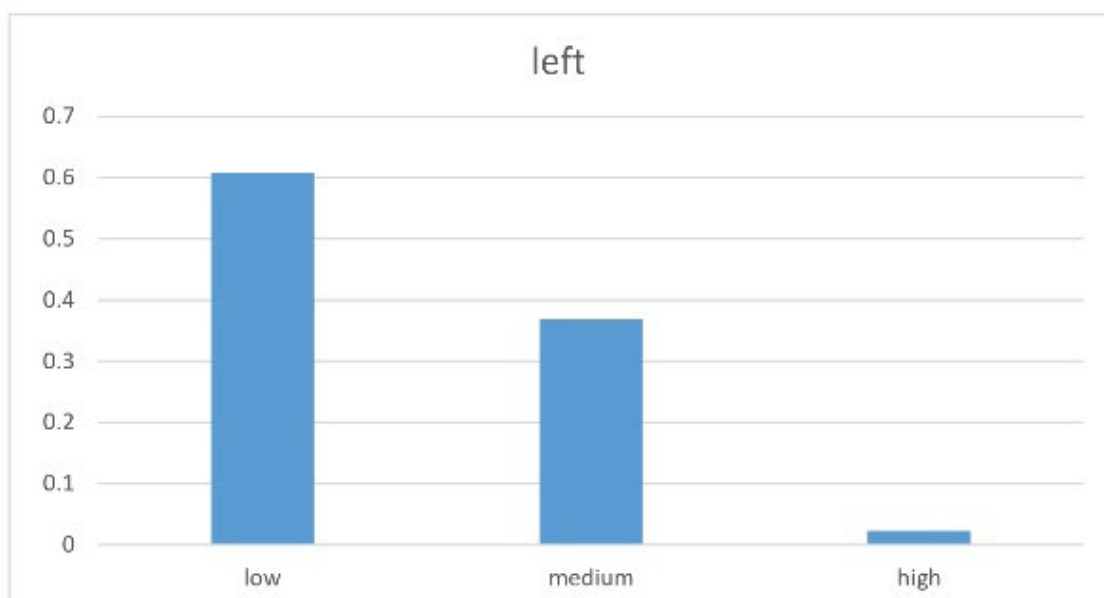   **Department Groups**

   - Sales, Support, Technical
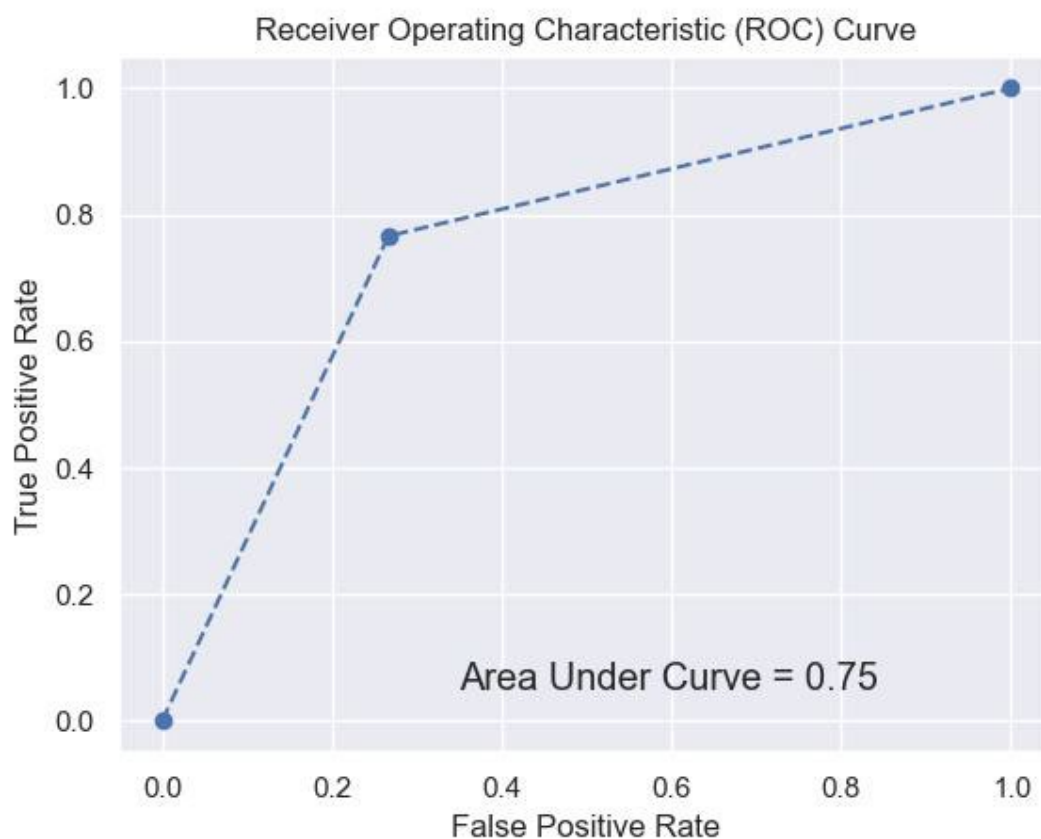   - IT, Marketing, HR, Accounting, Product Management
   - R&D, Management

4. Salary Proportion Between Employees
   - The 60% of Employees who leave their job gets low salary

3. logistic Regression model

	featuers	coef	odds	p_value	mean
0	satisfaction_level	-1.24306	0.288499	0	0.612834
1	last_evaluation	0.218284	1.24394	0.38	0.716102
2	number_project	-0.31085	0.732825	0.063	3.803054
3	average_monthly_hours	0.296977	1.345784	0	201.0503
4	centroidDis	-0.69278	0.500182	0	0.764514
5	time_spend_company	0.597105	1.816851	0	0.829522
6	Work_accident	-1.47378	0.229057	0	0.14461
7	promotion_last_5years	-1.09622	0.334133	0	0.021268
8	DepartmentGroup_1	0.155609	1.168369	0.218	0.605974
9	DepartmentGroup_2	0.18579	1.20417	0.074	0.299553
10	DepartmentGroup_3	-0.34404	0.708903	0	0.094473
11	salary_1	0.616453	1.852347	0	0.487766
12	salary_2	0.168977	1.184093	0	0.429762
13	salary_3	-0.78807	0.454723	0	0.082472

Receiver Operating Characteristic (ROC) Curve

Area Under Curve = 0.75

Accuracy	=	75% (0.7497)
Misclassification	=	25% (0.2503)
Sensitivity	=	76% (0.7662)
Specificity	=	73% (0.7333)