**Project Name: Attrition Prediction**

**Project Goals**

Determine active employees that are high risk of attrition

**Description**

Build a statistical model which gives us the risk score (probability of employee leaving) for employees by capturing importing factors attributing to attrition using Human Resource data for current and past employee.

**Input**

* Active and Inactive Employee (Total (2980) Current (1596) and Past (1384) Employees) from 2015 and 2016 years
* Vertical - 'AR Follow up'
* Job Role - Team Member, Desk Head, Team Leader
* Attributes
  + Experience in AGS
  + Employee Age
  + Gender
  + Marital Status
  + Work Location
  + Job Role
  + Experience Type
  + Prod Avg During Notice
  + Course
  + Last30DaysLeaveCount
  + Total Extra Hours Worked
  + Function
  + Shift
  + Transport Mode
  + Engagement Index

**Assumptions**

* Considered Work related attributes only
* Considered attributes (where missing data/Not Applicable was less than 20%) with imputation
* Location attributes will not be significant to tell about attrition as dynamics of business is changed significantly within last 2 years (Chennai to Hyderabad)
* Education Courses grouped -
  + BA/ BCom/ BPharm
  + HSC
  + BCA/ BBA
  + MA/ MCom
  + BE/ BTech
  + MBA
  + BSc
  + MCA
  + CS/CA (inter)
  + ME/ MTech
  + Diploma
  + MSc/ MPharm/ MPhil
  + SSLC

**Findings**

* Last 30 days leave count is the best predictor which contribute highest to the analysis (average for Current employee is 2.16 days while for employee left is 10.18 days)
* People are leaving in early in their career (Average AGS experience of past employee is 7.91 months while current employee is 16.10 months)
* Employee age of people are not significantly different (Average age for past employee 24.61 years while current employee is 24.95 years)
* Bachelor have more probabilities of leaving as (46% of Unmarried people left while 37.5% of Married people left)
* Gender is not a major contributor as almost equal percentage of people left from both gender (45.89% Male left while 47.44% female left)
* When other conditions are same compared to Chennai Hyderabad employees have higher odds of leaving, while Vellore employee have lower odds

**Important Factors**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Level | Effect on Attrition | Importance |
| Last30DaysLeaveCount |  | + | \*\*\* |
| Experience in AGS |  | - | \*\*\* |
| Engagement Index | Red | + | \*\*\* |
| Shift | 05:30PM-02:30AM | + | \*\*\* |
| Shift | 06:00PM-03:00AM | - | \*\* |
| Marital Status | Unmarried | + | \*\* |
| Transport Mode | Cab | - | \* |
| Shift | 04:00PM-01:00AM | + | \* |
| Function | Voice | + | \* |
| Work Location | Hyderabad | - | \* |
| Work Location | Vellore | + | \* |
| Transport Mode | Two Wheeler | - | \* |

**Model Results**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Current Employee probabilities | Employee Leaving probabilities | Accuracy % |
| Train | 0.1709 | 0.8028 | 87.74 |
| Test | 0.1514 | 0.8330 | 90.23 |
| All | 0.1717 | 0.8042 | 87.85 |