HR ANALYTICS CASE STUDY

SUBMISSION

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Abstract

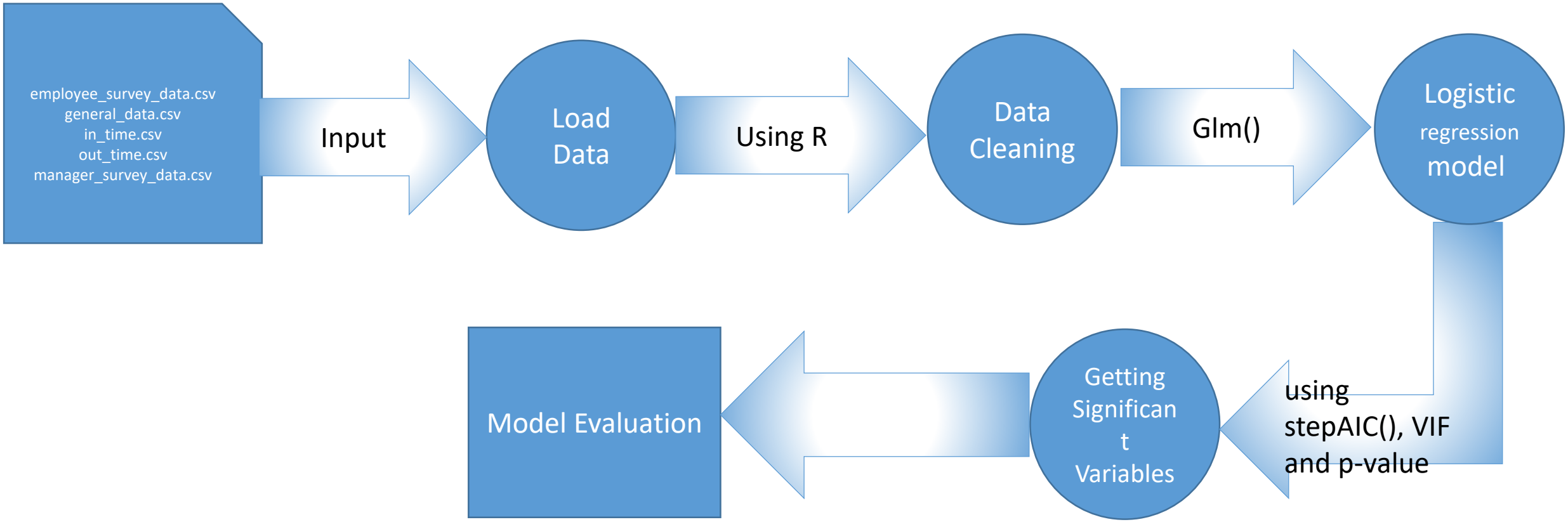
Project:

XYZ Company wants to reduce the attrition rate

Business Objective:

Automate the process of predicting employee's attrition

Problem Solving Methodology



Analysis

The insignificant variables are

- Education Field
- Business Travel Rarely
- Years at company
- Married Employees
- percentage salary hike
- Environment satisfaction very high
- Job involvement very high

Analysis

Employers need to concentrate on

- Work Life Balance
- Job Role
- Low Environment Satisfaction
- Job Involvement
- Years Since Last Promotion
- Total Working Years
- Age
- Number of Companies worked in
- Department

Analysis- Summary of the final model

```
Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                     -1.23607    0.26082  -4.739 2.15e-06 ***
Age                             -0.26931    0.06436  -4.184 2.86e-05 ***
NumCompaniesWorked               0.32307    0.04742   6.813 9.57e-12 ***
TotalWorkingYears               -0.54629    0.08671  -6.300 2.98e-10 ***
TrainingTimesLastYear           -0.18046    0.04619  -3.907 9.36e-05 ***
YearsSinceLastPromotion          0.51250    0.06196   8.272  < 2e-16 ***
YearsWithCurrManager            -0.52123    0.07128  -7.313 2.61e-13 ***
BusinessTravel.xTravel_Frequently  0.87544    0.10536   8.309  < 2e-16 ***
Department.xResearch...Development -0.96638    0.18628  -5.188 2.13e-07 ***
Department.xSales               -1.06438    0.19611  -5.428 5.71e-08 ***
Education.xDoctor               -0.60765    0.27441  -2.214 0.026803 *
JobLevel.x5                     -0.49925    0.24078  -2.073 0.038128 *
JobRole.xLaboratory.Technician   0.30595    0.14391   2.126 0.033504 *
JobRole.xManufacturing.Director -0.38537    0.19152  -2.012 0.044206 *
JobRole.xResearch.Director       0.71207    0.19892   3.580 0.000344 ***
JobRole.xResearch.Scientist      0.38238    0.13628   2.806 0.005017 **
JobRole.xSales.Executive         0.43717    0.13473   3.245 0.001175 **
MaritalStatus.xSingle            0.93611    0.09297  10.069  < 2e-16 ***
EnvironmentSatisfaction.xLow     0.88637    0.10426   8.501  < 2e-16 ***
JobSatisfaction.xLow             0.78119    0.10639   7.343 2.09e-13 ***
WorkLifeBalance.xBest           -0.99452    0.21027  -4.730 2.25e-06 ***
WorkLifeBalance.xBetter         -1.18703    0.17021  -6.974 3.09e-12 ***
WorkLifeBalance.xGood           -0.88084    0.18366  -4.796 1.62e-06 ***
WorkLifeBalance.xNo.response    -1.60653    0.59061  -2.720 0.006526 **
JobInvolvement.xLow              0.52143    0.18277   2.853 0.004331 **
JobInvolvement.xMedium           0.29202    0.10932   2.671 0.007555 **
JobInvolvement.xVery.High        0.31540    0.15265   2.066 0.038810 *
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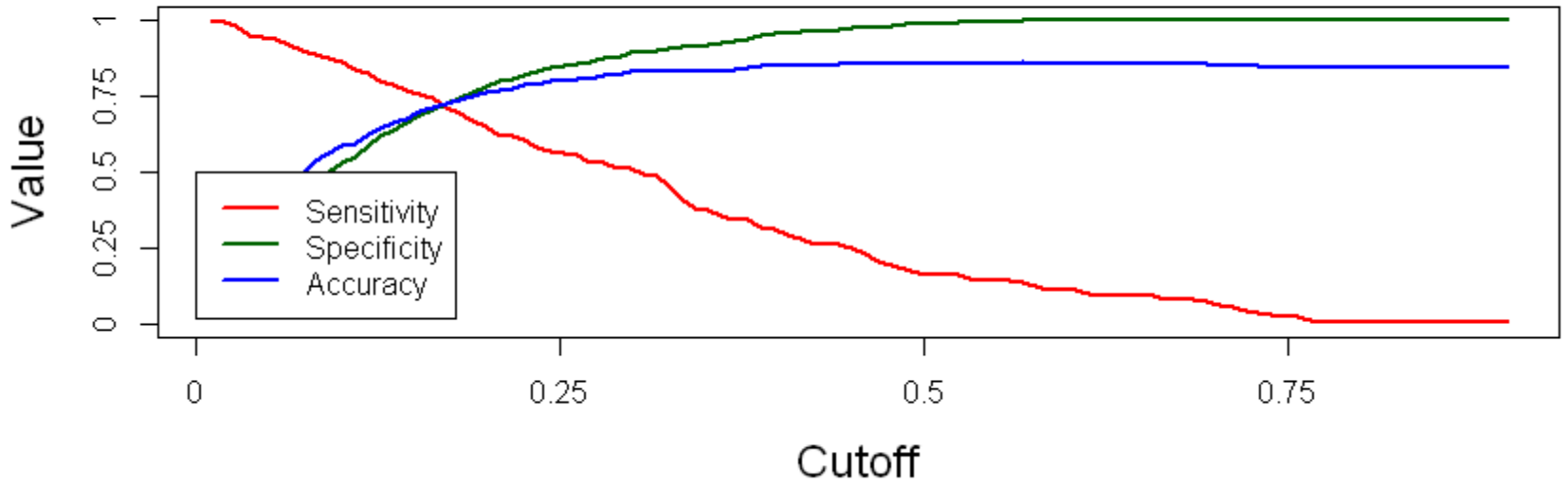
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 3877.6  on 4395  degrees of freedom
Residual deviance: 3186.4  on 4369  degrees of freedom
AIC: 3240.4

Number of Fisher Scoring iterations: 5
```

Sensitivity and Specificity Trend



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> spec Specificity 0.7226739
```

Results

- Accuracy of the model is 72%
- Sensitivity is 71 %
- Specificity is 72 %
- KS Statistics is 43.5% which is more than 40%, which signifies that the model is good.
- By Lift Chart we can say that 75% Attrition can be handled by taking care of 40% of employees

Conclusion

In order to lower down the attrition rate the company must address the

- Work Life balance
- Job Role
- Job Involvement
- Should give promotions more frequently