LITERATURE SURVEY

INTRODUCTION

Amongst the significant issues that corporate leaders have to deal with within an organization is the decline in proficient employees. This decline is primarily attributed to extreme work pressure, dissatisfaction at work, and ignored mental health issues such as depression, anxiety, etc. This is known as Employee Attrition or Churn Rate. Given the amount of stress employed people go through, focus on the state of mind has gained much-needed traction. Our model aims to predict the employee attrition rate and the employees' emotional assessment in an organization.

USE CASE

The purpose of this study is to investigate how a machine learning model can be applied to large human resource (HR) data sets to be able to predict employee attrition and to investigate practitioners openness to use such models for decision making within an organization. That is, this study will aim to analyze the possibility to predict employee attrition based on personnel HR data sets and what effects practitioners think that being able to predict employee attrition could have on organizational performance.

The study also strengthen knowledge about how practitioners perceive that employee attrition could affect the performance of an organization and therefore also the competitive advantage. This could give many interesting results. For example if an organization would be able to predict employee attrition, actions could be made to prevent it or to minimize the damage it could make.

EXISTING SOLUTIONS

Authors

Khare, D. Kaloya, C. K. Choudhary and G. Gupta

Title

"Employee attrition risk assessment using logistic regression analysis".

Abstract

This study utilized the logistic regression methods to stop employee attrition. In this the researchers gather demographic data of divided as well as present employees. This information made useful to produce risk equation, and make a cluster of the high risk employees. For this to be implemented the organization provide attention on that cluster of employees to stop them from attrition.

Authors

Saradhi and G.K. Palshikar

Title

"Employee churn prediction"

Abstract

Employee attrition directly relates to the customer attrition but not similar to customer attrition. For this they study and compared some major Machine Learning methodologies to stop employee attrition. In this they carried out several methods for creating and comparing predictive employee attrition models. This work is helpful for building best employee prediction model

Authors

Burez and D. Van den Poel

Title

“Handling class imbalance in customer attrition prediction”.

Abstract

In this research they explored that how to handle class inequity in attrition identification. For this study they use most accurate assessment metrics. That is AUC, lift. AUC and lift prove to be good assessment metrics to calculate accuracy. Result describe that tend to enhance prediction accuracy.

Conclusions

The success and prosperity of an organization is hidden in its committed and dedicated employees. The analysis of the selected variable and their impact on employee retention will help organizations to implement and practice such factors to hold back its talent for a longer period of time. It was indicated in this research that all the chosen variables have a positive influence on employee retention. Hence it’s a blend of factors that helps in employee retention. Organizations must strive to implement practices related to retention of employees.

Attrition dataset is used in this work to train and evaluate machine learning models; namely Decision Tree, Random Forest Regressor, Logistic Regressor, Adaboost Model, and Gradient Boosting Classifier models. The ultimate goal is to accurately detect attrition to help any company to improve different retention strategies on crucial employees and boost those employee satisfactions.

References

1.C.-P. Wei and I.-T. Chiu, “Turning telecommunications call details to attrition prediction: a data mining approach,” Expert systems with applications, vol. 23, no. 2, pp. 103–112, 2002

2. V. V. Saradhi and G. K. Palshikar, “Employee attrition prediction,” Expert Systems with Applications, vol. 38, no. 3, pp. 1999–2006, 2011.

3. W. Verbeke, K. Dejaeger, D. Martens, J. Hur, and B. Vaesens,”New insights into a churn prediction in the telecommunication sector. An profit driven datamining approach,” European journal of operational research, vol. 218, no. 1, pp. 211-229, 2012