IBM Employee Attrition Analysis

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This utilized Random Forest and K-means Clustering to select important features that had obvious impact on the employee attrition. Firstly, according to Random Forest results, monthlyincome, age, the number of companies worked are the main reasons why people choose to resign. Then older people, high job level, high job satisfaction,high monthly income, more number of companies worked, these kinds of people are not likely to go based on the clustering result of K-means Clustering.

This study found that females' attrition was 0.659 times than that of males, married and divorced people were 0.427 and 0.304 times than people who were single, respectively. Besides, the attrition of people who traveled frequently was 2.4 times higher than that of people who rarely traveled. Finally, there are other interesting findings in our study:in terms of number of companies worked, people who worked in 2 - 4 companies are less likely to leave, the female attrition rate is less than male after working for six companies , and people who earned Doctor's Degree are almost always having the lowest attrition rate.

2.Attrition Analysis in a Leading Sales Organisation in India
Mamta Mohapatra ,International Management Institute, New Delhi ,Amisha Gupta ,Birlasoft, New Delhi, Nikita Lamba Genpact, New Delhi, India

The paper highlights the importance for sales organizations to realise their attrition rates and identify factors leading to it. The sales employees directly interact with the customers on daily basis. For more satisfied customers, removing job dissatisfiers is considered essential. Thereafter, the results of the survey are discussed. The survey identifies some variables like politics, role ambiguity and supervisor related issues that play a major role in influencing the attrition rate in a sales company. The impact of these variables for employees in different locations (facing different problems), different tenure range and grades is discussed. However, there are a number of limitations to this study. The impact of these variables across genders, educational background, experience range and performance levels can be measured. After an in depth analysis, the results can be generalized in the context of sales industry in India. This data can be helpful for the organisations which are striving to identify the influencers in employee attrition amongst their sales people. It can help the companies design better retention strategies, thereby, reducing attrition costs.

3.Employee Attrition Prediction Using Machine Learning Algorithms
Lok Sundar Ganthi, Yaswanthi Nallapaneni, Deepalakshmi Perumalsamy & Krishnakumar Mahalingam Conference paper, 23rd November 2021.

This paper used machine learning approaches to forecast to prevent the aforementioned scenarios. With the aid of certain relevant data, workers who want to quit the organization can be exploited. Finding the characteristics that motivate workers to leave their job. Utilizing the categorization algorithms, namely Decision, to forecast employee attrition rate extreme gradient, tree, Random forest, K-Nearest Neighbors, and neural networks. This paper tried boosting and Ada-Boosting. Additionally, this inference paper implemented regularisation for each algorithm to determine the appropriate criteria to forecast the attrition rate of

employees taking 35 feature HR-data set from the Kaggle website, which includes 34 of them
This attrition feature, includes Yes/No answers in both independent and one dependent feature. In this paper, and are going through different steps to finally obtain an accuracy of 88% with good precision and recall values.

4.Singh, Moninder, et al. "An analytics approach for proactively combating voluntary attrition of employees." 2012 IEEE 12th International Conference on Data Mining Workshops. IEEE, 2012

This paper discusses a proactive approach to lowering employee attrition. This is particularly crucial for businesses with sizable service divisions because the unexpected departure of key members can result in significant losses in terms of lost productivity, missed deadlines, and hiring expenses for replacements. The proactive compensation increases given to at-risk employees is the main retention strategy examined in this paper. In order to make the best use of any limited funds that may be available for this purpose, the paper approach uses data mining like clustering to identify employees at risk of attrition and weighs the cost of attrition/replacement of an employee against the cost of retaining that employee. This allows the action to be targeted toward employees with the highest potential returns on investment. The retention action was carried out in two phases. The first phase involved around 7500 employees in all but one of the business areas considered. the second phase was carried out a couple of months later and involved roughly 12000 employees from the previously left out business area. The total net benefit estimated by the company's HR department is approximately 150% during the 2012 calendar year. This estimate is based on the assumption of a certain average ’success’ attrition rate amongst the targeted employees, based on a limited retention action that had been carried out in a prior year.