**Literature Review:**

Raja et al (2016)[18], implemented a study to understand the critical reasons or factors that may lead to employees’ attrition. The study was run over employees working in the Information Technology field. The study referred to the existence of a crisis in human capital management and pointed out the urgency of introducing a reform to handle the crisis and ensure sustain the high performing employees for a long time. Their results revealed that employees are seeking more than just monetary compensation. Some of the factors found that matters for the employees is the relationship with the supervisor, job description, and career development or opportunities for growth. This does not negate the fact that having competitive or reasonable salaries was not important for the employees under study, but it reflects the existence of other factors that would lead them to consider seeking jobs in other organizations. The study found that employees who were paid high salaries relative to their peers, seek jobs in other organizations that had better career development options. Moreover, the type of the position and the type of domain expertise two of the significant variables.

Nagadevara et al (2008)[19], examined the impact of withdrawal behavior (such as being late, absenteeism, lack of engagement and motivation toward the job) on attrition. The study was run on the software industry in India. The study was based on using five data mining techniques which are Artificial Neural Network (ANN), Logistic Regression, Regression Trees, Classification Trees (C5.0), and discriminant analysis. The results showed a relationship between withdrawal behavior among the employees and the attrition rate. The models indicated that absenteeism, lateness, job content, demographics and experience are strong predictors of turnover. In addition, it was found that the employees’ expectations regarding the job increase when the sector or field is growing rapidly and there is a continuous increase in demand.

A.D et al (2013)[10], in their study described attrition based on a study using Decision Trees. The classification of the employees into classes was based on demographic and job related data. Their results show that salary and job length were strong factors for predicting the employee attrition. The employees who have job stagnation for a long time, with no reasonable income increase are more likely to leave. Furthermore, the employees who have low job ranks, were confident in having low or slight income increase. So, they were more inclined to pursue new opportunities in another workplace. Those findings support the study done by Glassdoor [9] as the same results were reached in the other study. One limitation of this study is the small data set used for the analysis.

Zhao et al (2018)[20], implement supervised machine learning study to predict employees turnover within an organization. Two data sets were used, the first one was based on data collected from a regional bank in the United States, while the second data set was simulated data from IBM. The first data set was composed of 14 thousand records. Both real and simulated data sets were used to reflected organizations with different sizes. Ten models were implemented which are Decision Tree, Radom Forest Method, Gradient Boosting Trees Method, Extreme Gradient Boosting Method, Logistic Regression, Support Vector Machine, Neural Networks, Linear Discriminant Analysis, Naïve Bayes Method, and K-nearest Neighbor. The gradient boosting trees method returned the highest results across the different models, while Neural Network was the second best model in terms of performance. The top five features that helped predict employee attrition are Last Raise, Job Tenure, Age, Compensation, and Area of Specialization.

Boushey et al(2012)[17], stated that an employees’ turnover costs the organization around 20 percent of the employees’ salary to find a replacement for them. This value could be higher in case of searching for a replacement for high-paid employees. They found that some policies may reduce employees’ retention and retain the high-value employees, such as paid family leave, and workplace flexibility.

**More References not included in the main document on github:**

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