LITERATURE SURVEY

1.Machine Learning Approach for Employee Attrition Analysis

Dr. R. S. Kamath | Dr. S. S. Jamsandekar | Dr. P. G. Naik ,Published in International Journal of Trend in Scientific Research and Development (ijtsrd), (March 2019)

Talent management involves a lot of managerial decisions to allocate right people with the right skills employed at appropriate location and time. Authors report machine learning solution for Human Resource (HR) attrition analysis and forecast. The data for this investigation is retrieved from Kaggle, a Data Science and Machine Learning platform. Present study exhibits performance estimation of various classification algorithms and compares the classification accuracy. The performance of the model is evaluated in terms of Error Matrix and Pseudo R Square estimate of error rate. Performance accuracy revealed that Random Forest model can be effectively used for classification. This analysis concludes that employee attrition depends more on employees' satisfaction level as compared to other attributes.

Merits:

- It brings to fore the cause of employee disengagement.
- Enables HR managers develop long-term strategies to reduce attrition
- Competitive measures to enhance company brand image
- Develops and shapes drills that benefit both the management and the employees
- Enhanced work culture

Demerits:

- Decreased overall performance
- Daily task management
- Increased cost
- Lack of knowledgeable employees:
- Create a Negative image.

2.From Big Data to Deep Data to support people analytics for employee attrition prediction, Nesrine Ben Yahia, Hlel Jihen, Ricardo Colomo-Palacio(2021)

- In the era of data science and big data analytics, people analytics help organizations and their human resources (HR) managers to reduce attrition by changing the way of attracting and retaining talent. In this context, employee attrition presents a critical problem and a big risk for organizations as it affects not only their productivity but also their planning continuity. .

Merits:

- Employee attrition presents a critical problem and a big risk for organizations as it affects not only their productivity but also their planning continuity. In this context, the salient contributions of this research are as follows. Firstly, we propose a people analytics approach to predict employee attrition that shifts from a big data to a deep data context by focusing on data quality instead of its quantity. In fact, this deep data-driven approach is based on a mixed method to construct a relevant employee attrition model in order to identify key employee features influencing his/her attrition.

Demerits:

- **Losing** engaged and hard-working staff.
- Rehiring **time** and **expenses**.
- Indicating existing staffs' **dissatisfaction** and **unhappiness**.
- **Pressurising** remaining staff.
- **Delaying** other business plans and developments.

3. **Investigation of early career teacher attrition(ECT) and the impact of induction programs in Western Australia, Janine E.Wyatt, MichaelO'Neill (2021)**

This work focuses on establishing the ECT attrition rate and profiling ECTs who are more likely to leave teaching. When investigating ECT attrition it would be beneficial to know if attrition rates change over time, and about subsets of the teaching workforce .A binomial logistic regression was chosen as the dependent variable was dichotomous (stay or left) and it would describe the data and explain the relationship between the dependent binary variable and the independent variables.

Merits:

- For frequently changing attrition rates it is beneficial to know the attrition rates.
- This study explores that how ECT university preparation and employment induction experiences, help an employee to stay in the profession.

Demerits:

- Since, the data of Western Australia is considered, it cant be supported from attrition rate of entire Australia.

4. EMPLOYEE ATTRITION PREDICTION USING DEEP NEURAL NETWORK, Salah Al-Darraji, Dhafer G. Honi , Francesca Fallucchi, Ayad I. Abdulsada, Romeo Giuliano and Husam A. Abdulmalik,(3 November 2021)

The proposed work utilizes the deep learning technique along with some preprocessing steps to improve the prediction of employee attrition. Extensive experiments have been conducted to show the practical value of our work. The prediction accuracy using the original dataset is about 91%, whereas it is about 94% using a synthetic dataset.

Merits:

- This paper proposed the deep learning technique along with some preprocessing

  steps to improve the prediction of employee attrition.
- To get realistic results, we derived a balanced version from the original.
- Several factors are analyzed to reveal employee attrition intercorrelation and to demonstrate the dominant ones.

Demerits:

- It requires very large amount data in order to perform better than other techniques.

5. PREDICTION OF EMPLOYEE ATTRITION USING DATAMINING,

R. Shiva Shankar; J. Rajanikanth; V.V. Sivaramaraju; K.V.S.S.R. Murthy(06-07 July 2018)

Employee Attrition is a big issue for the organizations specially when trained, technical and key employees leave for a better opportunity from the organization. This results in financial loss to replace a trained employee. Therefore, we use the current and past employee data to analyze the common reasons for employee attrition or attrition. For the prevention of employee attrition, we applied a well known classification methods, that is, Decision tree, Logistic Regression, SVM, KNN, Random Forest, Naive bayes methods on the human resource data. For this we implement feature selection method on the data and analysis the results to prevent employee attrition. This is helpful to companies to predict employee attrition, and also helpful to their economic growth by reducing their human resource cost.

Merits:

- By using tentative data study and data extraction methods, they depict the attrition probability for each one employee and provide them score to build the retention techniques.

Demerits:

- A trained and experienced employee is difficult to substitute.
- It is cost effective