**EMPLOYEE PERFORMANCE ANALYSIS PROJECT**

**PROJECT SUMMARY AND RECOMMENDATIONS**

**Results of Department wise employee performance analysis:**

As obvious from the plotted bar chart, the Development department has the highest average employee performance followed by Data science department. The rest of the departments has more or less the same employee performance

**Results of Employee comparison:**

* From the plotted bar graphs, the following conclusions can be made:
* Higher salary hike has resulted in better employee performance
* Employees with more experience in the company exhibit comparitively poor performance than their good performance counterparts. This may be due to lower satisfaction level of the experienced employees in their current role. This statement is supported by the 'employee environment satisfaction' bar graph Indicating low level of satisfaction in poor performing employees.
* ‘Years since last promotion’ is indirectly proportional to the employee performance.

**Results of multicollinearity analysis:**

Majority of the factors exhibit low correlation level.

Moderate correlations(0.5 to 0.7) are observed between:

- Employee job level & Age

- Total work experience & Age

- Employee job level & Experience at this company

- Employee department & Employee job role

- Total work experience & Experience at this company

- Years since last promotion & Experience in current role

- Years since last promotion & experience in this company

High correlations(0.7 to 0.9) are observed between:

- Total work experience & Employee job level

- Years with current manager & Experience at this company

- Experience in current role & Experience at this company

- Experience in current role & Years with current manager

Since there are no strong/very high correlations(0.9-1.0) between any of the features and the number of features are not too high to considerably increase the computational complexity, feature reduction can be avoided.

**Results of imbalance check:**

The target variable values provided in the dataset are imbalanced and is recommended to be equalized to avoid bias in the model.

**Model performance evaluation results:**

From the output obtained, it is clear that the XGBClassifier(extreme grandient boosting classification) is the most effective machine learning model for the given task.

**RECOMMENDATIONS**

In order to improve the employee performance, the following points can be considered by the authorities:

* Salary increment level can be optimized and made equal for all the employees
* Employees can be provided with more incentives and improved working environment in order to elevate their job satisfaction levels
* Frequency of promotions to employees can be increased.