**RESULTS AND DISCUSSIONS**

* In this section we will analyse the accuracy of our Decision Tree models with supplement discussion on Gradient boosting and Random Forest methods as well.
* Firstly, start with Decision Tree prediction has obtained an accuracy of 79.57% which is a significant accuracy and an error of 20.43 % through which we can analyse that out of 213 employees 9 can leave the company.

A picture containing graphical user interface

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* The **Decision** tree has **predicted** various reasons for Attrition of employees like **Job role** being most important of them, **Job** **Satisfaction**, **Total** **working** **years** and **Income** (all types).
* Here is the **comparison** between the **Attrition** (actual data) and **Predicted** Attrition by attaching **Colour** **Manager** and **Pie/Donut** chart Node.

**ATTRITION OF EMPLOYEES**

Chart, pie chart

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**PREDICTED ATTRITION OF EMPLOYEES**

Chart, pie chart

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* Now we will see the results of **Random** **Forest** learner and predictor nodes where we see the accuracy has increased to **83.23%** which is a **good** accuracy and an error of **16.76%** through which we can analyse that out of 912 employees 51 can leave the company. Its has shown **better accuracy** than Decision Tree models.

Graphical user interface, text, application, table

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* Finally, we will compare all the previous predictions with **Gradient** **Boosted** **Tree** learner and Predictor its usually a good predictor by **reducing** **iterations**. We can see it has **excellent** **accuracy** of **100** **%** with and **Cohen’s kappa (k)** of **1%** which it simply accurate and it **outperforms** all other model predictions.

Graphical user interface, application, table, Word

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* A **Final** Flow Chart of overall **Knime Analysis** is attached for further clarification of nodes attached.

Diagram

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**ANALYSIS OF TABLEAU VISUALISATIONS**

With the following **Eight** visualizations we have observed there are various reasons behind attrition rates of employees as we have compared few variables in Methodology section. Now we will analyse the visualizations. Starting from visualization of Attrition WRT **working years** It has been found that Employees who have worked for **less** than **2.5 years** are more likely to **leave** the company. In analysis of Attrition WRT to **departments** and education it was found that **job** roles involving **Research** & Development, **Sales** and **Marketing** have the **least** **Attrition** rates. As per visualisation regarding Attrition as per job roles only it was found that **Female** **Manager** **attrition** rates are **highest** among all. One more analysis was observed that **Distance** from home contributes a major factor behind **Attrition** as the distance from home increases the **cost-of-living** expenses also increases hence the **Attrition** also **increases** for all the Male and Female employees **irrespective** of **Marital** **status**. As per **stock options** **Sales Executive and Laboratory Technician** have the **highest** attrition rates which means the Stocks alone can’t reduce the attrition rates.

Graphical user interface

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Chart, bar chart

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**CONCLUSION**

Overall, it has been concluded that Attrition of employees is a **living reality** for every organization and as a Human Resource professional it’s the responsibility of Human Resource Management to **hire, look at finances of employees, analyse** the **attrition rates** and the **reasons behind it**. As analysing the Attrition rate of employees did depend on lots of **factors** as per our analysis such as **Job Role**, **Income** (all types), **Job** **satisfaction**, **Total** **working** years out of which **Job** **role** was the **most** **important** predictor out of which **Lab** **Technician** being the role which has one of the highest Attrition rates. **Similar** analyses were seen while analysing **Tableau** visualizations also.

These **Findings** can help an organization in many ways such as finding the **reasons** behind **attrition** behind a **specific** **job** **role**, how it needs **improvement**, distributing **finances** based on the prediction’s models, Creating extra **incentives** for difficult job roles.

As for any organization Employees are its **Asset**. So, it’s the **responsibility** of **Human** **Resource** professional to investigate the **functioning** of this matter diligently.