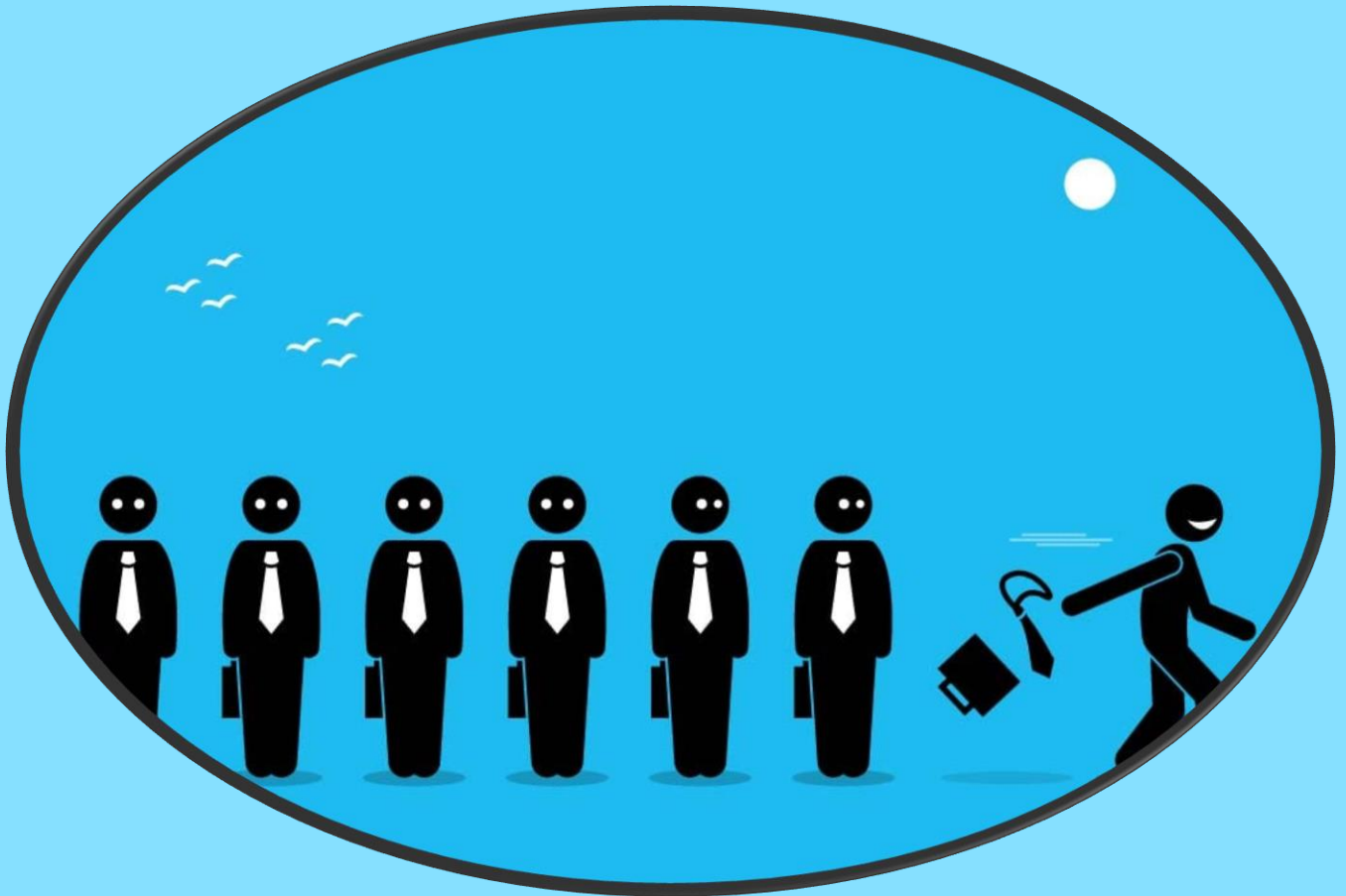


# EMPLOYEE ATTRITION



**Done by**

**Siva Kumar Ravi**



# PROJECT DETAILS

<b>Project Title</b>	<b>Employee Attrition</b>
<b>Technology</b>	<b>Analysis Data Science</b>
<b>Domain</b>	<b>Human Resource</b>
<b>Project Difficulty Level</b>	<b>Intermediate</b>
<b>Tools used</b>	<b>MS-POWER BI</b>





# Problem Statement

XYZ company which was established a few years back is facing around a 15% attrition rate for a couple of years. And it's majorly affecting the company in many aspects. In order to understand why employees are leaving the company and reduce the attrition rate XYZ company has approached an HR analytics consultancy for analyzing the data they have. You are playing the HR analyst role in this project and building a dashboard which can help the organization in making data-driven decisions.



# MAIN KPIs

- **Total Workforce:** The total number of employees in the organization.
- **Overall Attrition Rate:** The percentage of employees who have left the organization.
- **Number of Attritions:** The total number of employees who have left the organization.
- **Attrition by Department:** The percentage of employees in Department who have left the organization.
- **Attrition by Job Role:** The percentage of employees by their job role who have left the organization.
- **Attrition by Gender:** The percentage of employees by their Gender who have left the organization.
- **Work Life Balance Satisfaction:** Employees feel their work allows for a healthy balance between professional and personal life, and it is often measured through employee surveys.





# Architecture Implementation

## Raw Data Collection

**Source:** The dataset is provided from a reliable source, such as Unified Mentor Project Description Document.

**Data Acquisition:** Data is imported into Power BI from various formats (e.g., CSV, Excel, database).

**Data Transformation:** Before building any visuals or models, it's crucial to perform data Transformation to ensure the data's quality. This process includes:

**a) Handling Null/Missing Values:** Identify and fill or remove missing values.

**b) Handling Skewed Data:** Transform skewed data to ensure a normal distribution if required.

**c) Outliers Detection and Removal:** Detect and remove outliers to prevent them from skewing the analysis.

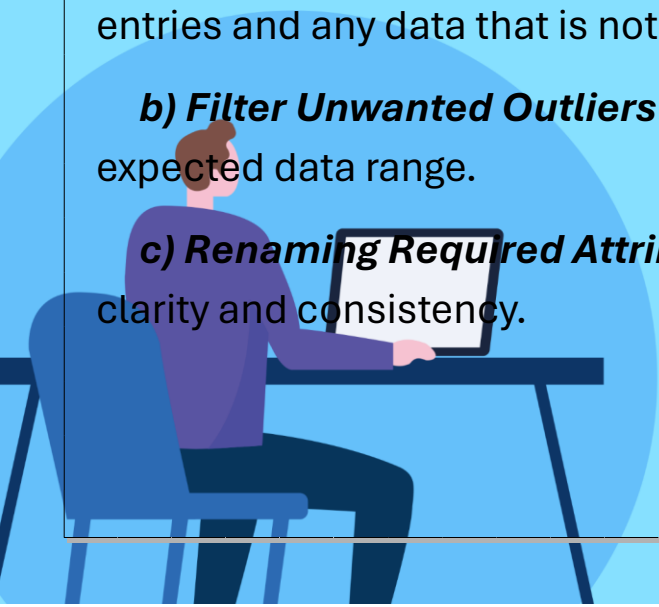
## Data Cleaning

Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset. This includes:

**a) Remove Duplicate or Irrelevant Observations:** Eliminate duplicate entries and any data that is not relevant to the analysis.

**b) Filter Unwanted Outliers:** Exclude outliers that do not fit within the expected data range.

**c) Renaming Required Attributes:** Rename columns and attributes for clarity and consistency.





## Exploratory Data Analysis (EDA)

Exploratory Data Analysis involves performing initial investigations on data to discover patterns, spot anomalies, and test hypotheses using summary statistics and graphical representations. This includes:

**Descriptive Statistics:** Summary statistics such as mean, median, and standard deviation.

**Graphical Representations:** Visualizations such as histograms, bar charts, line graphs, scatter plots, and box plots to explore the data.

## Reporting

**Dashboard Creation:** Building interactive dashboards with key metrics and KPIs.

**Visual Reports:** Creating visual reports that are easy to understand and interpret.

**Self-Explanatory Reports:** Ensuring that all reports are intuitive and provide insights at a glance.





## Total Workforce

**Definition:** The total number of employees in the organization.

**Value:** 4410 employees

## Average Age

**Definition:** The average age of employees in the organization.

**Value:** 36.92 years

## Overall Attrition Rate

**Definition:** The percentage of employees who have left the organization.

**Formula:**

$$\text{Attrition Rate} = \left( \frac{\text{Number of Employees Who Left}}{\text{Total Workforce}} \right) \times 100$$

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$100 \text{Attrition Rate} = (\text{Total Workforce} - \text{Number of Employees Who Left}) \times 100$

**Value:** 16.12%

## Number of Attritions

**Definition:** The total number of employees who have left the organization.

**Value:** 711 employees

## Active Workforce

**Definition:** The number of currently employed individuals.

**Value:** 3699 employees

## Average Years in Company

**Definition:** The average tenure of employees in the organization.

**Value:** 7.01 years

## Attrition by Department

**HR and HR Attrition:** 23.17% (57 out of 246)

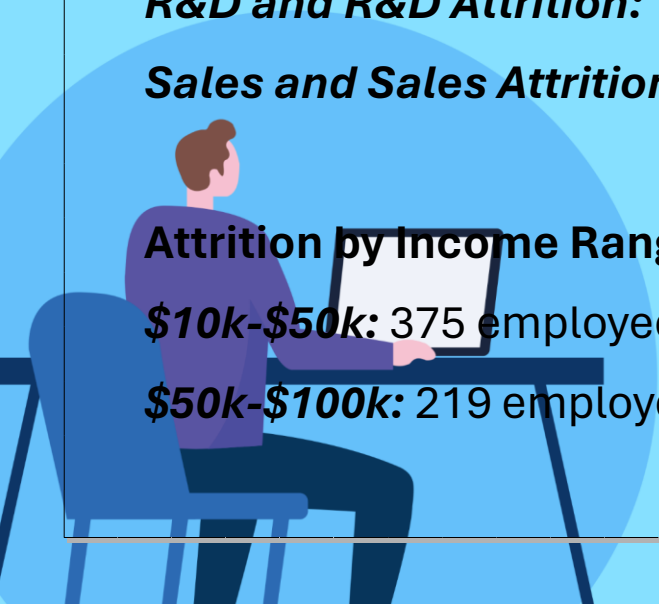
**R&D and R&D Attrition:** 13.58% (453 out of 3336)

**Sales and Sales Attrition:** 13.06% (201 out of 1539)

## Attrition by Income Range

**\$10k-\$50k:** 375 employees

**\$50k-\$100k:** 219 employees







**\$100k-\$150k:** 57 employees

**\$150k-\$200k:** 60 employees

### **Attrition by Education Field**

**Life Sciences:** 303 employees

**Medical:** 225 employees

**Marketing:** 75 employees

**Technical Degree:** 45 employees

**Human Resources:** 33 employees

**Other:** 30 employees

### **Attrition by Job Role**

**Human Resources:** 21 employees

**Sales Representative:** 36 employees

**Manager:** 42 employees

**Manufacturing Director:** 48 employees

**Healthcare Representative:** 57 employees

**Research Director:** 57 employees

**Laboratory Technician:** 126 employees

**Research Scientist:** 36 employees

**Sales Executive:** 165 employees

### **Attrition by Gender**

**Female Attrition:** 270 out of 2034 (13.28%)

**Male Attrition:** 441 out of 2376 (18.56%)





## Attrition by Years at Company

***Less than 1 year:*** 48 employees

***1-3 years:*** 258 employees

***3-5 years:*** 174 employees

***5-10 years:*** 117 employees

***10-20 years:*** 87 employees

***20+ years:*** 27 employees

## Work Life Balance Satisfaction

***Satisfactory:*** 2698 employees (61.18%)

***Overwhelming:*** 454 employees (10.29%)

***Challenging:*** 1019 employees (23.11%)

## Salary Hike by Age

***Sum of Percent Salary Hike by Age Range:*** Visual representation showing varying salary hikes, with peaks at ages 30, 35, and 40.





# COCLUSION

The employee attrition dashboard reveals key insights:

1. **Attrition Rate:** The organization has a 16.12% attrition rate with 711 employees leaving, indicating a moderate turnover that needs attention.
2. **Departmental Variances:** HR has a higher attrition rate (23.17%) compared to R&D (13.58%) and Sales (13.06%), suggesting a need for targeted retention efforts in HR.
3. **Income Impact:** Most attrition occurs in the \$10k-\$50k income range (375 employees), highlighting a potential need for better compensation strategies for lower-paid staff.
4. **Education and Roles:** High attrition in life sciences, medical fields, and roles like Sales Executives and Laboratory Technicians points to specific areas requiring retention focus.
5. **Tenure-Based Attrition:** Employees with 1-3 years of tenure show the highest attrition, indicating a need for improved onboarding and early career support.
6. **Gender Differences:** Male employees have a higher attrition rate (18.56%) compared to females (13.28%), suggesting a need to understand and address the reasons behind this.
7. **Work-Life Balance:** While 61.18% find work-life balance satisfactory, 23.11% find it challenging and 10.29% overwhelming, indicating room for improvement in this area.
8. **Average Age and Tenure:** With an average age of 36.92 years and a tenure of 7.01 years, the workforce is relatively experienced, necessitating continued engagement and career development opportunities.

Addressing these areas can help reduce attrition and enhance employee satisfaction and retention.



THANK YOU

