Human Resources Project

1. Introduction:

The purpose of this report is to evaluate the HR performance of a company in a period of 10 years from 2012 to 2021. Data was collected from the company's HR management system representing information about employees and data gathered over the years from annual survey. Analysis methodology will be diagnostic and prescriptive using Microsoft Power Bi.

2. Business Objectives:

The primary business objectives are:
   a. **Improve Employee Retention**: Analyse employee attrition to identify trends and factors contributing to employee turnover.
   b. **Enhance Employee Performance**: Monitor employee performance ratings and satisfaction to identify high-performing employees and areas for development.
   c. **Boost Employee Satisfaction**: Measure employee satisfaction, work-life balance, and engagement to improve the work environment.
   d. **Support Employee Development**: Assess the impact of training opportunities and promotion cycles on employee growth and performance.

3. Target Audience:

The HR report will be tailored for key stakeholders within the organization, including:

   a. **HR Management**: To monitor employee performance, satisfaction, and attrition trends to implement strategies for retention.
   b. **Executive Leadership**: For an overview of workforce trends, talent acquisition, and employee growth potential.
   c. **Department Heads/Managers**: To track department-specific performance, employee development, and work-life balance.
   d. **Learning & Development Team**: To analyze the effectiveness of training programs and career progression.

4. KPIs (Key Performance Indicators) to Measure Performance:

Objective 1: Improve Employee Retention

- **Attrition Rate**: Percentage of employees leaving the company after certain number of years and distribution of attrition over years.
- **Average Tenure**: Average years employees have spent at the company.
- **Location vs. Attrition**: Analyse how commute distance and state correlates with employee attrition.
- **Attrition by Department**: Breakdown of attrition rates by department to identify critical areas.
- **Attrition by Role**: Breakdown of attrition rates by job role to identify critical areas.
- **Education vs. Attrition:** Analyse how the education level and education field correlates with employee attrition.
- **Salary vs. Attrition:** Analyse how the salary correlates with employee attrition.
- **Gender and Martial Status vs. Attrition:** Analyse how the gender and martial status correlates with employee attrition.
- **Work Life Balance vs. Attrition**: Analyse how the work life balance correlates with employee attrition.
- **Manager Rating vs**. **Attrition:** Analyse how manager rating correlates with employee attrition.
- **Satisfaction vs**. **Attrition:** Analyse how satisfaction level correlates with employee attrition.
- **Ethnicity vs. Attrition:** find any relationship between ethnicity and attrition.
- **Business Travel & Over Time vs. Attrition:** Analyse how business travel and over time correlates with attrition.

Objective 2: Enhance Employee Performance

- **Average Performance Rating**: Average performance scores across years, education fields.
- **Manager Rating vs. Self-Rating**: Compare manager ratings and self-ratings to understand alignment and discrepancies.
- **Training Impact on Performance**: Number of training opportunities taken and how they influence performance rating.
- **Performance across years of experience inside the company**

Objective 3: Boost Employee Satisfaction

- **Work-Life Balance Satisfaction**: Employee satisfaction with work-life balance based on a satisfaction survey.
- **Environment Satisfaction**: Satisfaction with the work environment in each department.
- **Overall Satisfaction Level**: Aggregate satisfaction scores from the satisfaction table.
- **Satisfaction vs. Overtime**: Analyse the correlation between overtime work and satisfaction levels to identify burnout risks.
- **Satisfaction vs. Travel**: Analyse the correlation between travel rate and satisfaction levels to identify burnout risks.
- **Manager Relationship Satisfaction:** Measures employee satisfaction specifically regarding their relationship with their direct managers.
- **Satisfaction vs. Job Role:** Analyse the correlation between job role and satisfaction levels to identify burnout risks.

- **Satisfaction vs. Rating over Time:** Satisfaction change based on rating change over years.
- **Satisfaction vs. Salary:** Analyse the correlation between salary and satisfaction levels to identify burnout risks.
- **Satisfaction vs. Gender:** Analyse the correlation between gender and satisfaction levels to identify burnout risks.
- **Satisfaction vs. Years at Company:** Analyse the correlation between years employee at the company and satisfaction levels.
- **Satisfaction vs. Location:** Analyse the correlation between distance from home impact satisfaction levels.
- **Satisfaction vs. Training:** Analyse the correlation between training taken from available training opportunities and its impact on satisfaction levels.
- **Promotion and Job Rotation Frequency:** Analyse the correlation between the promotion frequency and satisfaction level.

Objective 4: Support Employee Development

- **Training Participation Rate**: Percentage of training taken in the same year over years.
- **Time Since Last Promotion**: Average number of years since last promotion for employees in departments.
- **Education Level vs. Promotion**: Analyze the relationship between education level and performance ratings to assess development potential.
- **Gender percentage over the company**.

5. Executive Summary:

This report analyses the HR performance metrics of a company for about 10 years. Key finding indicates:

a. **Improve Employee Retention**:

The analysis indicates that the company has several areas to address to improve employee retention:

- Early-year attrition
- Regional issues in IL
- Issues within the Technology department
- Retention of employees with non-technical backgrounds
- Compensation and benefits for lower-paid employees
- Retention of single employees

By addressing these areas, the company can improve its overall employee retention and reduce turnover costs.

b. **Enhance Employee Performance**:

The analysis provides insights into employee performance and areas for improvement:

- **Salary:** Ensure fair compensation to motivate employees.
- **Training:** Increase training opportunities to enhance skills and performance.
- **Promotions:** Implement fair promotion policies to recognize and reward high performance.
- **Work-life balance:** Offer flexible work arrangements to reduce stress and improve productivity.
- **Job roles:** Design roles with autonomy and challenges to engage employees and stimulate creativity.
- **Performance:** Review and refine performance evaluation processes to ensure they are fair, transparent, and aligned with organizational goals.
- **Recognition:** Implement employee recognition programs to acknowledge and reward outstanding contributions.
- **Company culture:** Foster a positive and supportive company culture that values employee well-being and engagement.

By addressing these areas, the company can enhance employee performance, engagement, and retention, ultimately leading to improved organizational outcomes.

c. **Boost Employee Satisfaction**:

The analysis provides additional insights into employee satisfaction and potential areas for improvement:

- **Work-life balance:** Address issues for dissatisfied employees to improve overall satisfaction.
- **Job role satisfaction:** Consider factors like autonomy and technical challenges when designing roles, especially managerial ones.
- **Employee engagement:** Implement strategies to maintain or improve employee engagement over time.
- **Promotion and job rotation:** Explore how to optimize role changes for positive impact on job satisfaction.

By addressing these areas, the company can enhance employee satisfaction, engagement, and retention.

d. **Support Employee Development**:

The analysis provides insights into employee growth and development:

- **Promotions:** Track promotions, time since last promotion, and the impact of education level and training opportunities.
- **Training:** Opportunities of training taken in the same year over years increase in 2014 and then were ups and downs till 2021 then sever decline in 2022 occurred.
- **Departments:** There are specific departments that has the least time to promote like sales and HR which may need average 3 years to promote.
- **Training and promotions:** There is a weak relationship between training opportunities taken and average years of promotion.
- **Education fields:** Some education fields have lowest average of years to promote like marketing, Human Resources, Economics, Business Studies, and Information Systems.

By addressing these areas, the company can enhance employee satisfaction, engagement, and retention, ultimately leading to improved organizational performance.

6. Data Cleaning and Transformation:

Cleaning	Rationale
Education Level, Rating Level & Satisfied Level	
No Cleaning or Transformation Required only rename of columns	● Each file contains five rows of data with score and relevant descriptive level of three items; education, rating and satisfied. ● Renaming of columns to align with the columns in other data files.
Employee	
Renamed Column	Improve the look of the data
Replace Values	Marketing in Department column has two values as one of them contain extra space so it was identified as different category, so replace values functions used to remove the extra space
Create a column named "Role Change after Promotion"	The difference between role change and protomotion
Create relationship between Education in Employee table and Education Level ID in Education Level table	Cardinality: many to one Cross filter direction: single
Performance Rating	
Renamed Column	Improve the look of the data
Create a column named "Job Satisfaction Level" using **IF** function	To convert the Job Satisfaction score to level to avoid conflict by relationship of many columns in Performance Rating table to one column in Satisfied Level table
Create a column named "Environment Satisfaction Level" using **IF** function	To convert the Environment Satisfaction score to level to avoid conflict by relationship of many columns in Performance Rating table to one column in Satisfied Level table
Create a column named "Relationship Satisfaction Level" using **IF** function	To convert the Relationship Satisfaction score to level to avoid conflict by relationship of many columns in Performance Rating table to one column in Satisfied Level table
Create a column named "Overall Satisfaction"	Calculating the average score of the three satisfaction columns
Create a column named "Overall Rating"	Calculating the average score of the two rating columns
Create a column named "Training Percent"	Calculate the percent of training opportunities taken compared with training opportunities available

Create relationship between Overall Satisfaction in Performance Rating table and Satisfaction Level ID in Satisfied Level table	Cardinality: many to one Cross filter direction: single
Create relationship between Manager Rating in Performance Rating table and Rating Level ID in Satisfied Level table	Cardinality: many to one Cross filter direction: single
Create relationship between Self Rating in Performance Rating table and Rating Level ID in Satisfied Level table	Cardinality: many to one Cross filter direction: single
Calendar	
Create a calendar table using **CALENDAR** and **DATE** Functions	To create a relationship between calendar table and dates column in data files
Create relationship between Date in Calendar table and Hire Date id in Employee table	Cardinality: many to one Cross filter direction: single
Create relationship between Date in Calendar table and Review Date id in Performance Rating table	Cardinality: many to one Cross filter direction: single

7. Detailed Analysis:

a. Employee Retention Dashboard:

- **Attrition Rate:** Percentage of employees leaving the company after certain number of years and distribution of attrition over years.
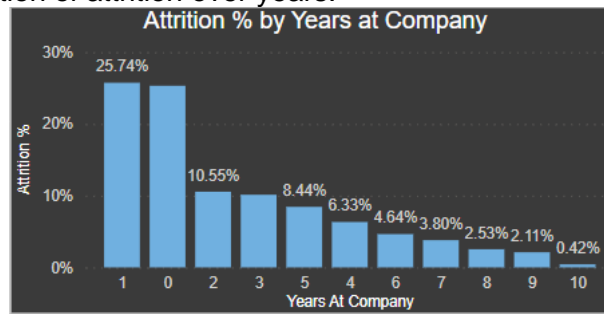
The chart shows the attrition rate based on the number of years they have been employed.
- o **Highest attrition:** The highest attrition rate occurs in the first year of employment, with 25.74% of employees leaving.
- o **Decreasing attrition:** As employees stay longer, the attrition rate generally decreases. This suggests that employees who have been with the company for longer are more likely to stay.
- o **Notable exceptions:** There are a few exceptions to the general trend of decreasing attrition. For example, the attrition rate increases slightly between year 2 and year 3, and again between year 7 and year 8.
- o **Low attrition after 9 years:** After 9 years of employment, the attrition rate is very low, with only 0.42% of employees leaving.

Overall, the chart indicates that the company has a relatively high attrition rate in the early years of employment, but this rate decreases significantly as employees gain more tenure. This suggests that the company may need to focus on improving employee retention in the first few years of employment.
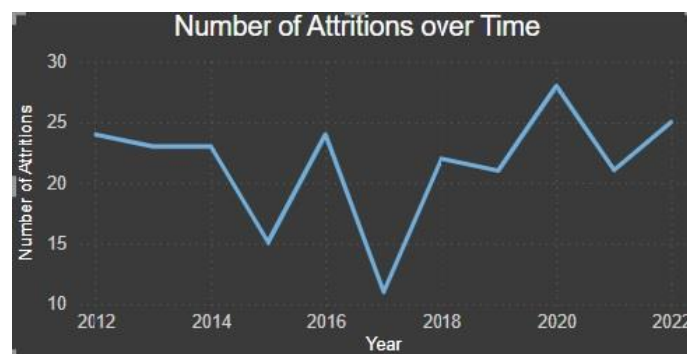
The line chart shows the trend of "Number of Attritions" over the years 2012 to 2022.
- o **Overall Trend:** The general trend is relatively stable, with fluctuations. The number of attritions hovers around 20-25 throughout the period, with minor deviations.

Specific Insights:
- o **2012-2014:** A slight downward trend is observed.
- o **2014-2016:** A significant increase of around 10 units is seen.
- o **2016-2018:** A gradual decrease with a trough in 2018.
- o **2018-2020:** A sharp increase of around 15 units.
- o **2020-2022:** A downward trend with a slight recovery in 2022.

- **Average Tenure**: Average years employees have spent at the company.

It shows the average number of years employees stay at the company, which is 4.56 years. This information can be useful for understanding employee retention and turnover rates within the organization

- **Location vs. Attrition:** Analyse how state correlates with employee attrition.
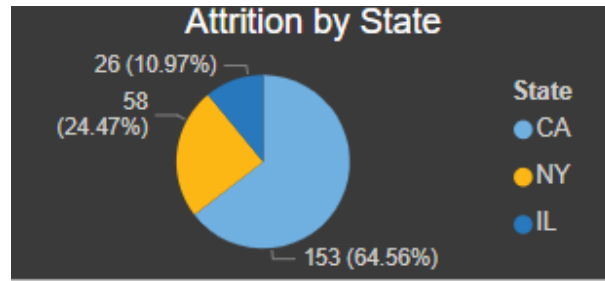
The chart shows the attrition rate for each state.
- o **Highest attrition:** The state of IL has the highest attrition rate, with 64.56% of employees leaving.
- o **Lowest attrition:** The state of NY has the lowest attrition rate, with 10.97% of employees leaving.
- o **CA attrition:** The state of CA has an attrition rate of 24.47%.

Overall, the chart indicates that the state of IL has a significantly higher attrition rate than the other states. This suggests that there may be issues in the IL region that are leading to high employee turnover. Further analysis would be needed to identify the specific factors contributing to this high attrition rate.

- **Attrition by Department**: Breakdown of attrition rates by department to identify critical areas.
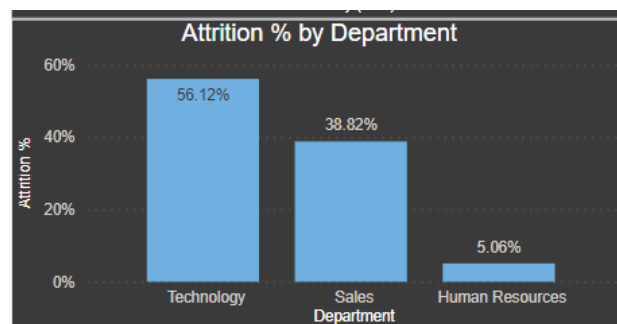
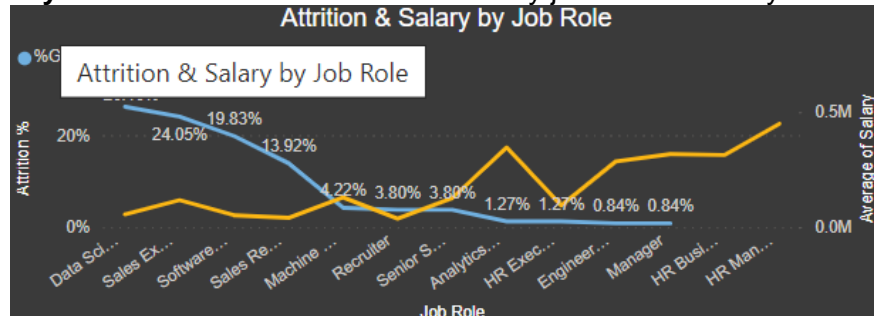
The chart shows the attrition rate for each department.
Here are some key observations:
- o **Highest attrition:** The Technology department has the highest attrition rate, with 56.12% of employees leaving.
- o **Lowest attrition:** The Human Resources department has the lowest attrition rate, with only 5.06% of employees leaving.

- **Sales department:** The Sales department has an attrition rate of 38.82%, which is significantly lower than the Technology department but higher than the Human Resources department.

Overall, the chart indicates that the Technology department has a significantly higher attrition rate than the other departments. This suggests that there may be issues in the Technology department that are leading to high employee turnover. Further analysis would be needed to identify the specific factors contributing to this high attrition rate.

- **Attrition by Role**: Breakdown of attrition rates by job role to identify critical areas.

Attrition & Salary by Job Role

The chart shows the attrition rate and average salary for different job roles within a company.

Attrition Rate:
- **Highest attrition:** Data Scientists have the highest attrition rate at 24.05%, followed by Sales Executives at 19.83%.
- **Lowest attrition:** HR Business Partners have the lowest attrition rate at 0.84%, followed by HR Managers at 0.84%.
- **General trend:** There is no clear trend in the attrition rate across job roles. Some roles with high salaries have low attrition rates (e.g., HR Business Partners), while others with lower salaries have high attrition rates (e.g., Data Scientists).

Average Salary:
- **Highest salary:** Sales Executives have the highest average salary at 0.5 million.
- **Lowest salary:** Recruiter, Senior Software Engineer, and HR Executive all have the lowest average salary at 0.0 million.
- **General trend:** There is a general trend of higher salaries for roles with higher levels of responsibility and expertise.

Relationship between Attrition and Salary:
- **No clear correlation:** There is no clear correlation between attrition rate and average salary. Some roles with high salaries have high attrition rates (e.g., Data Scientists), while others have low attrition rates (e.g., HR Business Partners).

Overall, the chart indicates that attrition rates vary significantly across different job roles within the company, and there is no clear relationship between attrition rate and average salary. Further analysis would be needed to identify the specific factors contributing to high attrition rates in certain roles.

- **Education vs. Attrition:** Analyse how the education level and education field correlates with employee attrition.
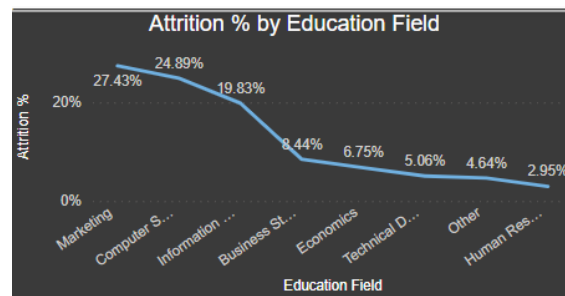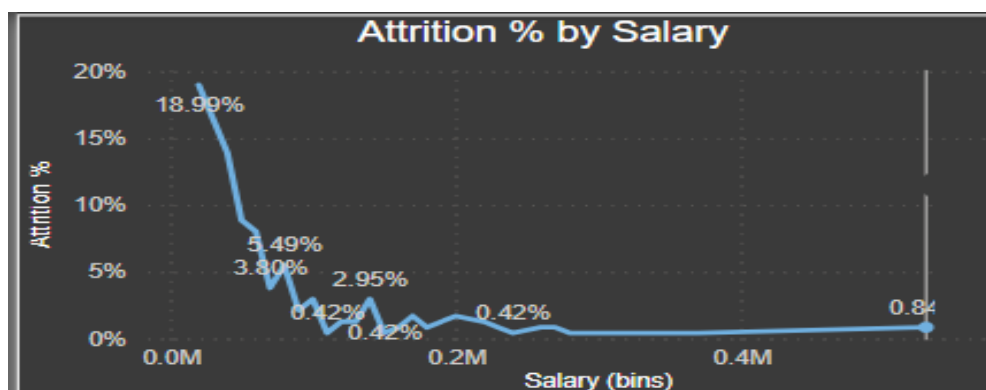

The chart shows the attrition rate based on their education field.
- o **Highest attrition:** Employees with a Marketing background have the highest attrition rate at 27.43%.
- o **Lowest attrition:** Employees with a Human Resources background have the lowest attrition rate at 2.95%.
- o **General trend:** There is a general trend of decreasing attrition as the education field becomes more technical. Employees with degrees in Computer Science, Information Systems, Business Studies, and Economics have significantly lower attrition rates than those with degrees in Marketing.

Overall, the chart indicates that the company has a higher attrition rate among employees with non-technical backgrounds. This suggests that the company may need to focus on improving employee satisfaction and retention among employees with degrees in Marketing and other non-technical fields.

- **Salary vs. Attrition:** Analyse how the salary correlates with employee attrition.

The chart shows the attrition rate based on their salary.
- o **Highest attrition:** Employees in the lowest salary bin (0-0.1M) have the highest attrition rate at 18.99%.
- o **Lowest attrition:** Employees in the highest salary bin (0.4M-0.5M) have the lowest attrition rate at 0.8%.
- o **General trend:** There is a general trend of decreasing attrition as salary increases. Employees with higher salaries are more likely to stay with the company than those with lower salaries.

Overall, the chart indicates that the company has a higher attrition rate among employees with lower salaries. This suggests that the company may need to focus on improving compensation and benefits for employees in the lower salary ranges to improve retention.

- **Marital Status vs. Attrition:** Analyse how the marital status correlates with employee attrition.
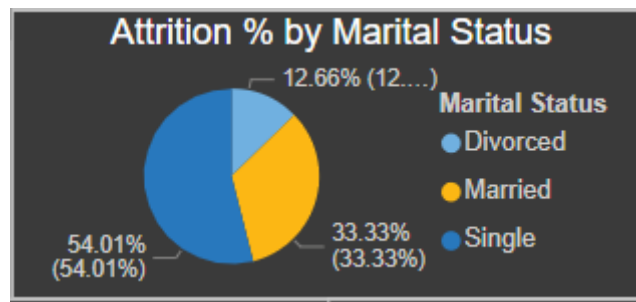
The chart shows the attrition rate (the percentage of employees who leave the company) based on their marital status.
- o **Highest attrition:** Single employees have the highest attrition rate, with 54.01% of them leaving the company.
- o **Lowest attrition:** Divorced employees have the lowest attrition rate, with 12.66% leaving the company.
- o **Married employees:** Married employees have an attrition rate of 33.33%.

Overall, the chart indicates that single employees are more likely to leave the company than married or divorced employees. This suggests that the company may need to focus on improving employee satisfaction and retention among single employees.

- **Other KPIs that gave no clear insights:**

- ▪ **Attrition by Work Life Balance:**
  - - Employees with a work-life balance rating of 2 (likely indicating moderate satisfaction) have the highest attrition rate. This suggests that improving work-life balance could significantly reduce turnover.

- ▪ **Count of Attrition by Gender:**
  - - Female employees have a higher attrition rate than male employees. This indicates a potential gender gap in employee satisfaction or retention.

- **Attrition by Distance from Home:**
  - There seems to be a slight trend towards higher attrition for employees who live closer to work. However, the differences are not statistically significant, suggesting that distance from home may not be a major factor in attrition.

- **Count of Attrition by Job Satisfaction Level:**
  - Employees who are dissatisfied or neutral with their job satisfaction have significantly higher attrition rates. This emphasizes the importance of employee satisfaction in retention.

- **Average of Manager Rating by Attrition:**
  - Employees who are leaving have a slightly lower average manager rating than those who are staying. This suggests that manager performance and employee-manager relationships may play a role in attrition.

- **Attrition Percent by Ethnicity:**
  - While there are some variations, the differences in attrition rates based on ethnicity are not statistically significant. This suggests that ethnicity may not be a major factor in attrition.

- **Count of Attrition by Business Travel:**
  - Employees who frequently travel for work have a slightly higher attrition rate. This could indicate that frequent travel may contribute to job dissatisfaction or work-life balance issues.

- **Count of Attrition by Over Time:**
  - There is no significant difference in attrition rates based on whether employees work overtime or not.

b. Performance Monitoring Dashboard:

▪ **Salary vs Education Field**
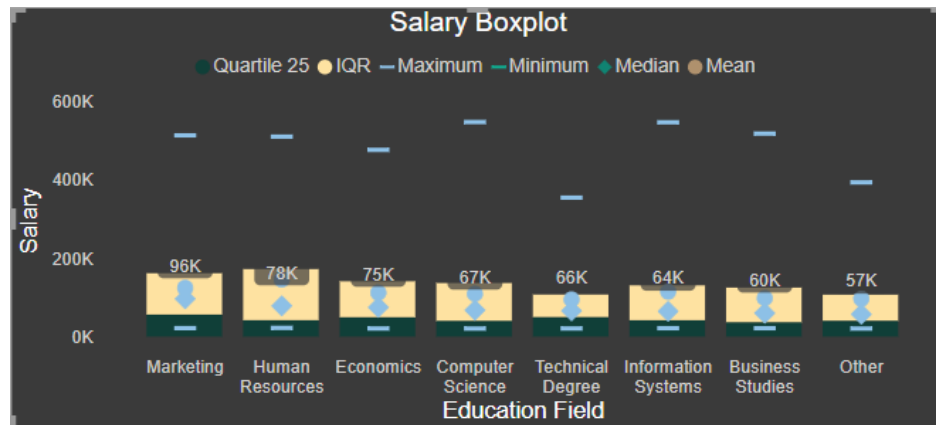
The boxplot visually represents the distribution of salaries across different education fields

- o **Marketing:** The box is relatively short, indicating a smaller IQR and a more concentrated salary range. The median is closer to the bottom, suggesting a right-skewed distribution.
- o **Human Resources:** Similar to Marketing, the box is relatively short, but the median is closer to the top, indicating a left-skewed distribution.
- o **Economics:** The box is slightly longer than Marketing and Human Resources, indicating a wider IQR. The median is closer to the top, suggesting a left-skewed distribution.
- o **Computer Science:** The box is the longest, indicating the widest IQR and the largest salary range. The median is closer to the top, suggesting a left-skewed distribution.
- o **Technical Degree:** The box is relatively short, with a median closer to the bottom, suggesting a right-skewed distribution.
- o **Information Systems:** The box is slightly longer than Technical Degree, with a median closer to the top, indicating a left-skewed distribution.
- o **Business Studies:** The box is the shortest, indicating a very concentrated salary range. The median is closer to the bottom, suggesting a right-skewed distribution.
- o **Other:** The box is relatively short, with a median closer to the top, indicating a left-skewed distribution.

- **Training Opportunities Taken divided by Training Opportunities Within Year by Review year:**

Training Opportunities Taken divided by Training Opportunities Within Year by Review Year
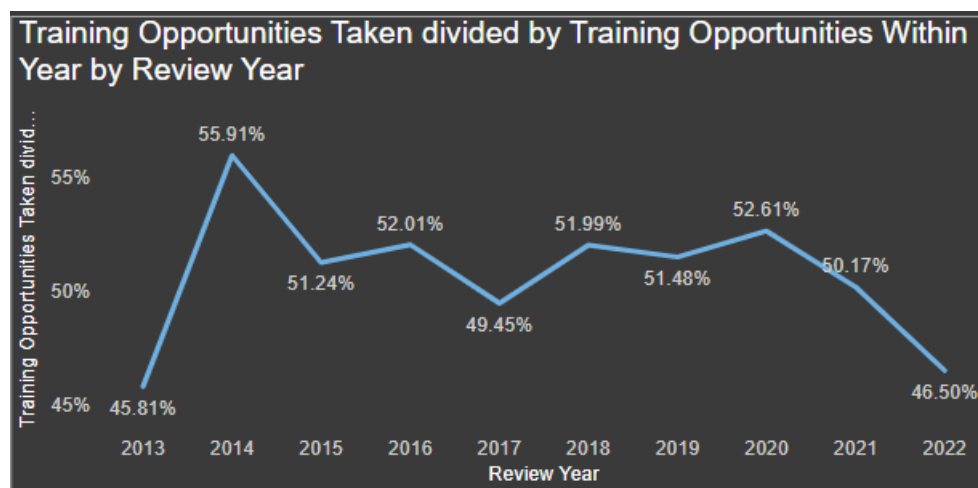
The line chart illustrates the trend of "Training Opportunities Taken divided by Training Opportunities Within Year" over the years 2013 to 2022. The x-axis represents the review year, and the y-axis represents the percentage of training opportunities taken within each year.

- **2013-2014:** A sharp increase of around 10 percentage points is observed between these years.
- **2014-2017:** A relatively stable period with a slight downward trend.
- **2017-2020:** A gradual upward trend with a peak in 2020.
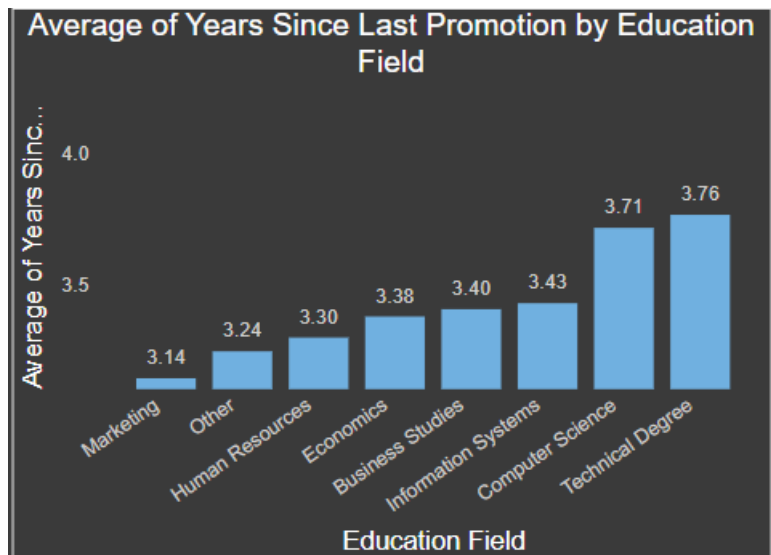- **2020-2022:** A slight downward trend.

- **Count of Employees by Gendar:**

Count of Employee ID by Gender
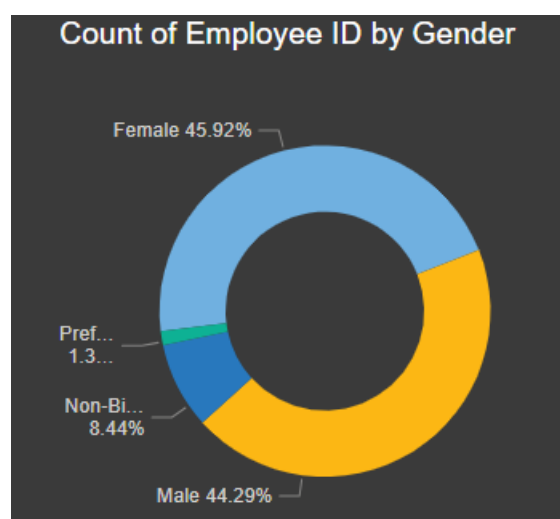
The chart shows the distribution of employees by gendar.
- Female: 45.92%
- Male: 44.29%
- Non-Binary: 8.44%
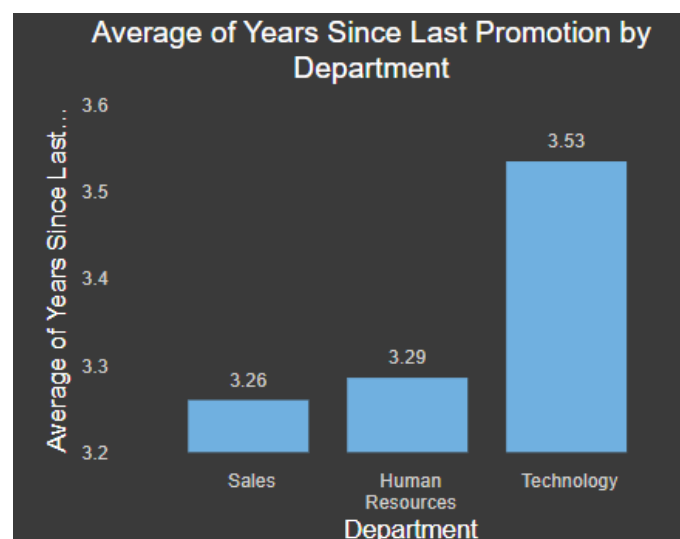- Prefer Not to Say: 1.35%

- **Average of Years by Education Field:**

The chart shows the average number of years since the last promotion for employees in different education fields.
  - **Technical Degree:** Employees with a Technical Degree have the highest average number of years since their last promotion, at 3.76 years.
  - **Computer Science:** Employees with a Computer Science degree have the second-highest average number of years since their last promotion, at 3.71 years.
  - **Other:** Employees in the "Other" category have the lowest average number of years since their last promotion, at 3.14 years.

- **Average of Years by Department:**

The chart shows the average number of years since the last promotion for employees in different departments.
  - **Technology:** Employees in the Technology department have the highest average number of years since their last promotion, at 3.53 years.
  - **Sales:** Employees in the Sales department have the lowest average number of years since their last promotion, at 3.26 years.

- **Performance over Time:**
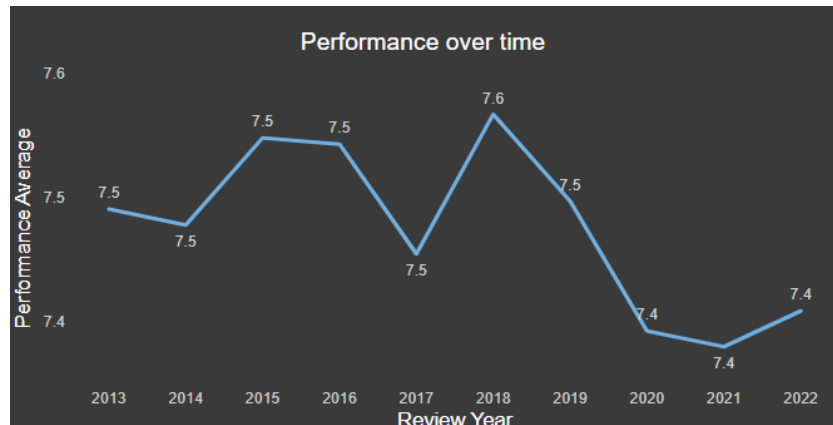
The chart shows the trend of "Performance Average" over the years 2013 to 2022. The x-axis represents the review year, and the y-axis represents the performance average.
- **Overall Trend:** The general trend is relatively stable, with slight fluctuations. The performance average hovers around 7.5 throughout the period, with minor deviations.
- **Peak and Trough:** The highest point (peak) is observed in 2018, where the performance average reaches approximately 7.6. The lowest point (trough) is seen in 2020, where the average dips to around 7.4.
- **Year-over-Year Fluctuations:** The chart exhibits year-over-year fluctuations. For instance, there's a slight increase from 2013 to 2015, followed by a decrease in 2016.

Specific Insights:
- **2013-2015:** A relatively stable period with a slight upward trend.
- **2015-2018:** A gradual increase with a peak in 2018.
- **2018-2022:** A downward trend with a slight recovery in 2022.

- **Performance Average by Training Opportunities:**
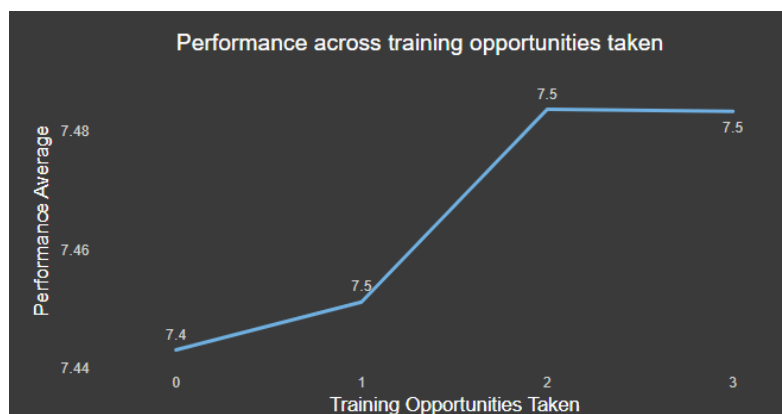
The chart shows the relationship between "Performance" and "Training Opportunities Taken." The x-axis represents the number of training opportunities taken, and the y-axis represents the performance level.
Positive Correlation: There appears to be a positive correlation between performance and the number of training opportunities taken. As the number of training opportunities increases, the performance level tends to rise.

Specific Points:

- Individuals with 0 training opportunities taken have an average performance of around 7.44.
- Those with 1 training opportunity taken have an average performance of approximately 7.5.
- Individuals with 2 or 3 training opportunities taken exhibit a similar average performance level of around 7.5.
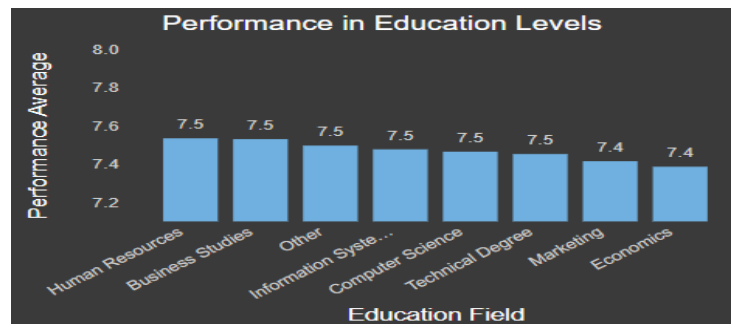
- **Performance Average by Years:**
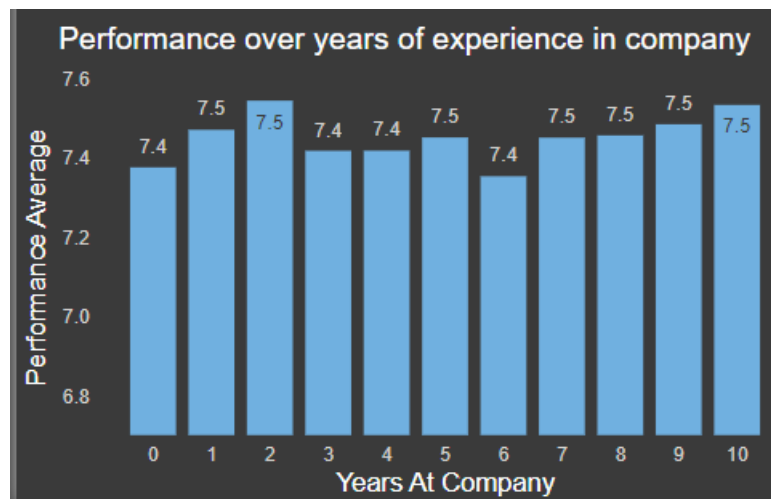
The chart shows the relationship between "Performance Average" and "Years at Company." The x-axis represents the number of years an employee has been with the company, and the y-axis represents their performance average.

- **Slight Positive Trend:** There appears to be a very slight positive trend between performance and years at the company. This suggests that, on average, employees tend to perform slightly better as they gain more experience within the organization.
- **Early Years:** In the initial years (0-3 years), there's a slight increase in performance. This might indicate that employees become more familiar with their roles and responsibilities during this period.
- **Mid-Career Plateau:** Between 3 and 8 years of experience, the performance average remains relatively stable, suggesting a plateau. This could be attributed to factors like job satisfaction, career progression, or organizational culture.
- **Later Years:** Beyond 8 years, the performance average slightly increases again. This might be due to increased expertise, leadership roles, or greater organizational influence.

▪ **Performance in Education Levels:**

The chart shows the average performance of employees in different education fields.
- **Human Resources:** Employees with a Human Resources degree have the highest average performance, at 7.5.
- **Business Studies, Other, Information Systems, Computer Science, Technical Degree, Marketing, and Economics:** Employees in these fields have similar average performance levels, ranging from 7.4 to 7.5.

▪ **Rating Difference by Years:**
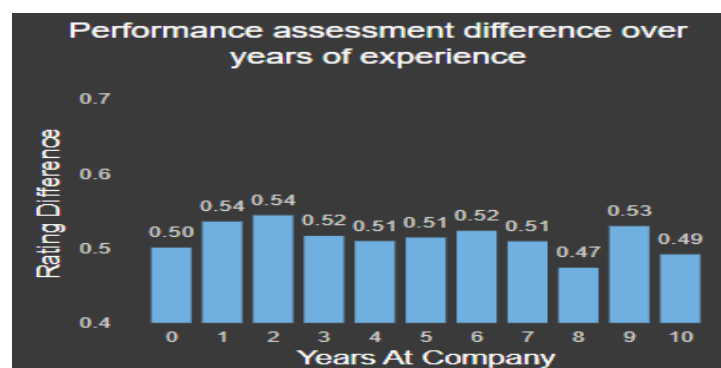
The chart shows the relationship between "Rating Difference" and "Years at Company." The x-axis represents the number of years an employee has been with the company, and the y-axis represents the difference in their performance rating over time.
- **General Trend:** There appears to be a slight downward trend in rating difference as employees gain more experience. This suggests that, on average, the difference between an employee's initial performance rating and their subsequent ratings tends to decrease over time.
- **Early Years:** In the initial years (0-2 years), the rating difference is relatively high, indicating a notable change in performance during this period. This might be attributed to factors like learning new skills, adapting to the company culture, or adjusting to the job role.
- **Mid-Career Stability:** Between 3 and 8 years of experience, the rating difference remains relatively stable, suggesting a period of consistent performance. This could be due to factors such as mastery of job responsibilities, career progression, or organizational stability.
- **Later Years:** Beyond 8 years, the rating difference shows a slight increase. This might indicate that employees in later career stages face new challenges or opportunities that require adaptation and potentially lead to changes in performance.

c. Satisfaction Insights Dashboard:

- **Work-Life Balance Satisfaction**: Employee satisfaction with work-life balance based on a satisfaction survey.
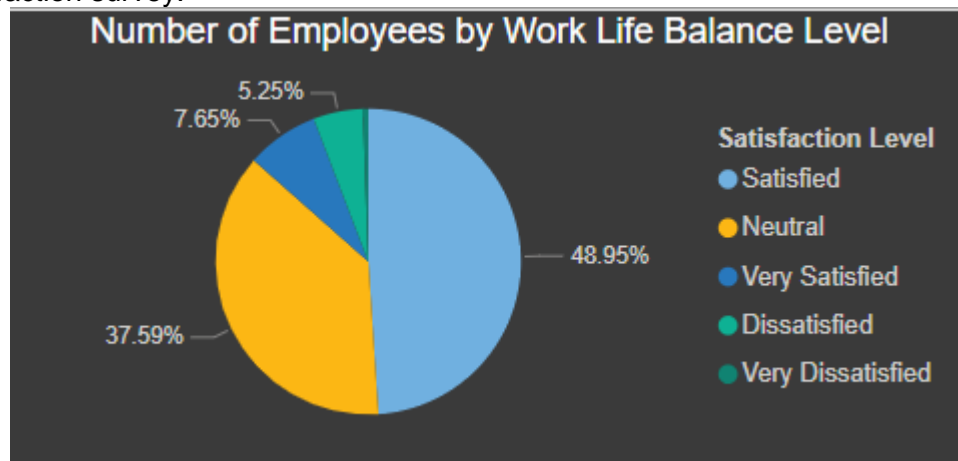
The chart shows the number of employees at a company categorized by their satisfaction level with work-life balance.

Here are the key findings:

- o **Satisfied:** The largest group of employees (48.95%) is satisfied with their work-life balance.
- o **Neutral:** The second-largest group (37.59%) is neutral, indicating they neither strongly agree nor disagree with their work-life balance.
- o **Very Satisfied:** A smaller group (7.65%) is very satisfied with their work-life balance.
- o **Dissatisfied:** Only a small percentage (5.25%) are dissatisfied with their work-life balance.
- o **Very dissatisfied:** The smallest group (0.57%) is very dissatisfied with their work-life balance.

Overall, the chart suggests that a majority of employees are satisfied or neutral with their work-life balance. However, there is still a significant portion of employees who are very satisfied or dissatisfied, indicating that there is room for improvement in this area.

- **Overall Satisfaction Level:** Aggregate satisfaction scores from the satisfaction table.

The provided image shows the average overall satisfaction rating, which is **3.58**. This information can be useful for understanding employee morale and engagement within the organization

- **Satisfaction vs. Job Role:** Analyse the correlation between job role and satisfaction levels to identify burnout risks.
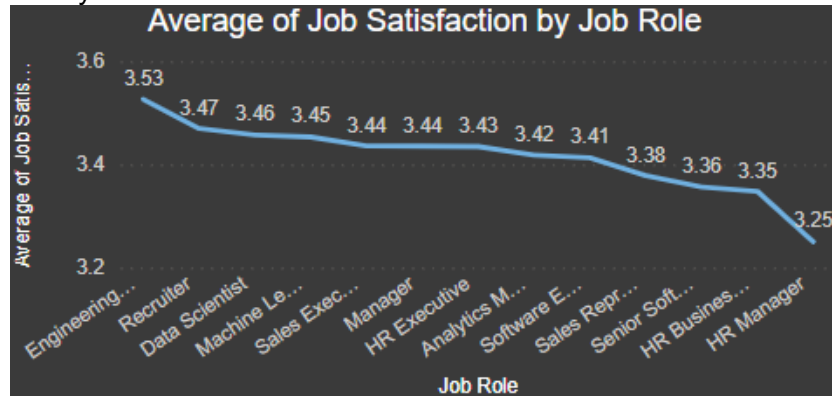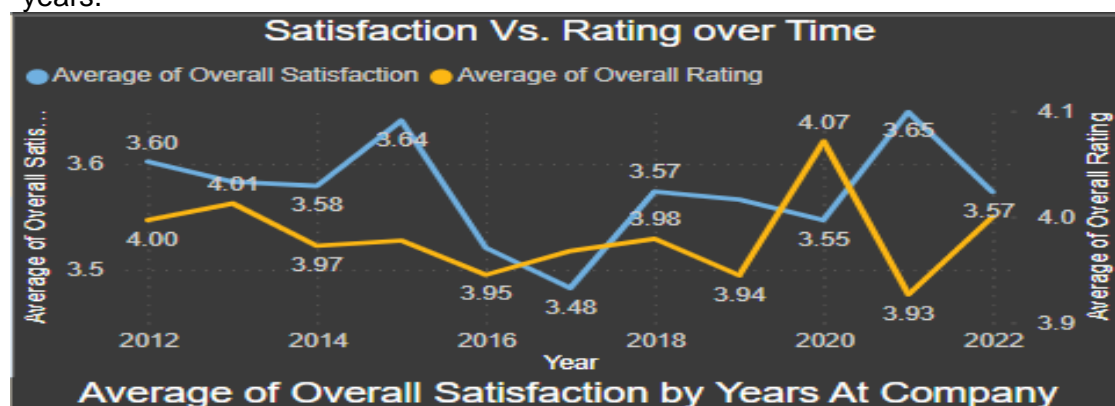

The chart shows the average job satisfaction rating for different job roles within a company. Here are some key observations:
- o **Highest job satisfaction:** The Engineering role has the highest average job satisfaction rating at 3.53.
- o **Lowest job satisfaction:** The HR Manager role has the lowest average job satisfaction rating at 3.25.
- o **General trend:** There is a general trend of decreasing job satisfaction as job roles become more managerial or administrative. Roles such as Engineering, Recruiter, Data Scientist, and Machine Learning Engineer tend to have higher satisfaction ratings than roles such as Manager, HR Executive, and HR Manager.

Overall, the chart indicates that technical and individual contributor roles tend to have higher job satisfaction than managerial and administrative roles. This suggests that factors such as autonomy, problem-solving, and technical challenges may be more important for job satisfaction in these roles.

- **Satisfaction vs. Rating over Time:** Satisfaction change based on rating change over years.

The chart shows the average overall satisfaction and rating over time.
Here are some key observations:

Overall Satisfaction:
- o **Trend:** The average overall satisfaction has fluctuated over the years. It started at 3.60 in 2012, decreased to 3.58 in 2014, then increased to 3.64 in 2015 before decreasing again to 3.57 in 2022.
- o **Highest satisfaction:** The highest average overall satisfaction was recorded in 2015 at 3.64.
- o **Lowest satisfaction:** The lowest average overall satisfaction was recorded in 2014 at 3.55.
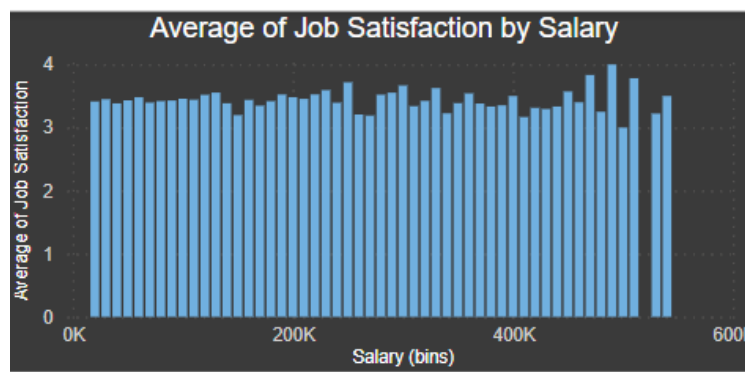
Overall Rating:
- o **Trend:** The average overall rating has also fluctuated over the years, but with a more consistent pattern. It started at 4.00 in 2012, decreased to 3.95 in 2016, then increased to 4.07 in 2020 before decreasing again to 3.93 in 2021.
- o **Highest rating:** The highest average overall rating was recorded in 2020 at 4.07.
- o **Lowest rating:** The lowest average overall rating was recorded in 2016, 2019 & 2021 at 3.93.

Comparison:
- o **Correlation:** There seems to be a general correlation between satisfaction and rating. When satisfaction increases, the rating tends to increase as well, and vice versa. However, this correlation is not perfect, as there are instances where satisfaction and rating move in opposite directions.
- o **2020:** In 2020, there is a notable increase in both satisfaction and rating. This may indicate a positive event or change that occurred in the company during that year.

Overall, the chart indicates that both satisfaction and rating have fluctuated over time. While there is a general correlation between the two, there are also instances where they move independently. Further analysis would be needed to identify the specific factors driving these fluctuations.

- **Satisfaction vs. Salary:** Analyse the correlation between salary and satisfaction levels to identify burnout risks.

The chart shows the average job satisfaction rating for employees across different salary bins.
Here are some key observations:
- o **Overall job satisfaction:** The average job satisfaction rating across all salary bins is relatively high, hovering around 3.5 on a scale of 1 to 4.

- o **Salary impact:** While there are some fluctuations, there doesn't seem to be a strong correlation between salary and job satisfaction. Employees in lower salary bins have reported average satisfaction levels similar to those in higher salary bins.
- o **Outliers:** There are a few outliers, such as a lower satisfaction rating around the 100K salary bin and a slightly higher rating around the 300K salary bin. However, these are relatively minor deviations from the overall trend.

Overall, the chart indicates that job satisfaction is generally high among employees regardless of their salary level. This suggests that factors other than salary, such as work-life balance, company culture, and opportunities for growth, may be more significant determinants of employee satisfaction.

- ● **Satisfaction vs. Years at Company:** Analyse the correlation between years employee at the company and satisfaction levels.
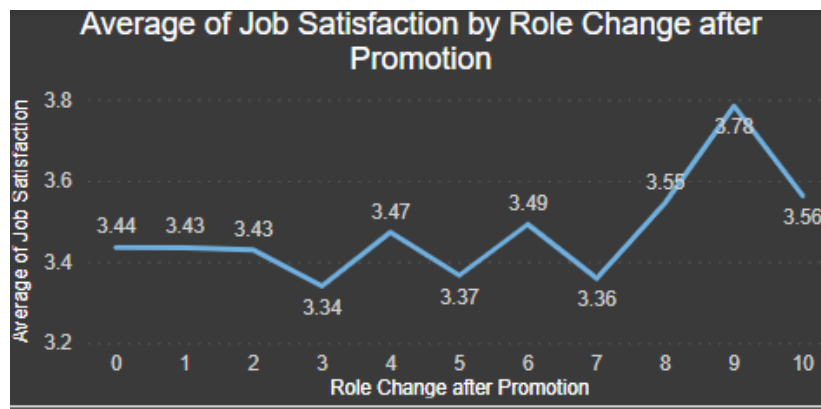

The chart shows the average overall satisfaction rating for employees based on the number of years they have been with the company.
Here are some key observations:
- o **Initial satisfaction:** Employees in their first year at the company have the highest average overall satisfaction rating at 3.65.
- o **Decreasing satisfaction:** As employees stay longer, the average overall satisfaction rating generally decreases. This suggests that employees may become less satisfied with the company over time.
- o **Notable exceptions:** There are a few exceptions to the general trend of decreasing satisfaction. For example, the satisfaction rating increases slightly between year 2 and year 3, and again between year 7 and year 8.
- o **Lowest satisfaction:** The lowest average overall satisfaction rating occurs between year 5 and year 6.

Overall, the chart indicates that the company has a relatively high level of employee satisfaction in the early years of employment, but this satisfaction level decreases over time. This suggests that the company may need to focus on improving employee engagement and retention in the later years of employment.

- **Promotion and Job Rotation Frequency:** Analyse the correlation between the promotion frequency and satisfaction level.


The chart shows the average job satisfaction rating for employees who have undergone role changes after promotions.

Here are some key observations:

- o **Initial satisfaction:** Employees who have not undergone a role change after promotion (0) have an average job satisfaction rating of 3.44.
- o **Fluctuating satisfaction:** As the number of role changes after promotion increases, the average job satisfaction rating fluctuates. It initially increases to 3.47 after one role change, then decreases to 3.34 after two role changes, and then increases again to 3.56 after nine role changes.
- o **Highest satisfaction:** Employees who have undergone nine role changes after promotion have the highest average job satisfaction rating at 3.56.

Overall, the chart indicates that while role changes after promotion can have a positive impact on job satisfaction, the relationship is not linear. The impact of role changes on job satisfaction may vary depending on individual factors such as personality, career goals, and the nature of the role changes.

- **Other KPIs that gave no clear insights:**
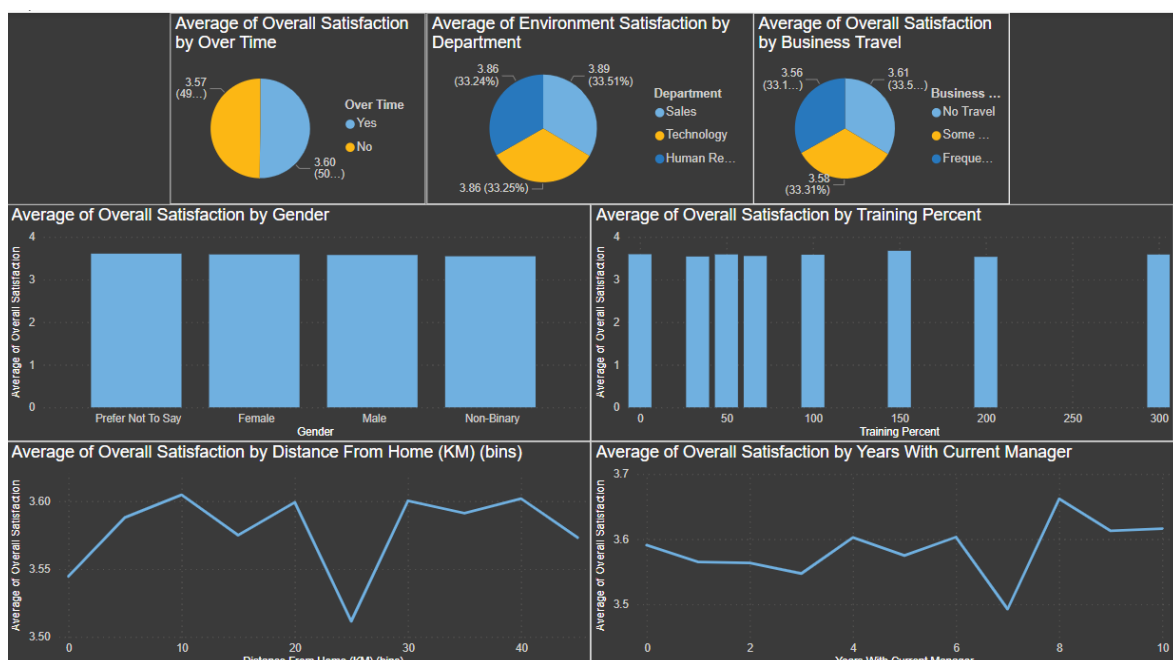
- **Overall Satisfaction:**
  - The average overall satisfaction is 3.57 out of 5, which is generally positive but not exceptional.
  - There are slight variations in satisfaction levels across different categories, but the overall trend is relatively consistent.
- **Department Satisfaction:**
  - The Sales department has the highest average satisfaction (3.89), followed by Technology and Human Resources.
  - Business Travel has a mixed impact on satisfaction. While those with frequent travel have a slightly higher average (3.61), those with no travel have the highest (3.66).
- **Gender Satisfaction:**
  - There are no significant differences in satisfaction levels based on gender.
- **Training Percentage Satisfaction:**
  - There is a general trend of higher satisfaction with an increasing training percentage, although the correlation is not perfectly linear.
- **Distance from Home Satisfaction:**
  - Satisfaction levels show a slight decrease as distance from home increases, suggesting that proximity to work may be a minor factor in employee satisfaction.
- **Years with Current Manager Satisfaction:**
  - There is a slight upward trend in satisfaction as employees spend more time with their current manager, indicating that positive relationships with managers can contribute to higher satisfaction.
- **Environmental Satisfaction:**
  - The average environmental satisfaction is 3.86, which is significantly higher than the overall satisfaction, suggesting that employees are generally satisfied with their work environment.

d. Employee Development Dashboard:

- Track promotions, time since last promotion, and the impact of education level and training opportunities on employee growth.
- Opportunities of training taken in the same year over years increase in 2014 and then were ups and downs till 2021 then sever decline in 2022 occurred.
- There are specific departments that has the least time to promote like sales and HR which may need average 3 years to promote
- There is a weak relationship between training opportunities taken and average years of promotion.
- Some education fields has lowest average of years to promote like marketing, Human Resources, Economics, Business Studies, and Information Systems.

Created by:

1- Maysara Mohamed (Leader)
2- Marwa Emara
3- Abd El Rahman Nabil
4- Samah Eissa
5- Enas Osama

1- Maysara Mohamed (Leader)
2- Marwa Emara
3- Abd El Rahman Nabil
4- Samah Eissa
5- Enas Osama