

MeriSkill Virtual Internship

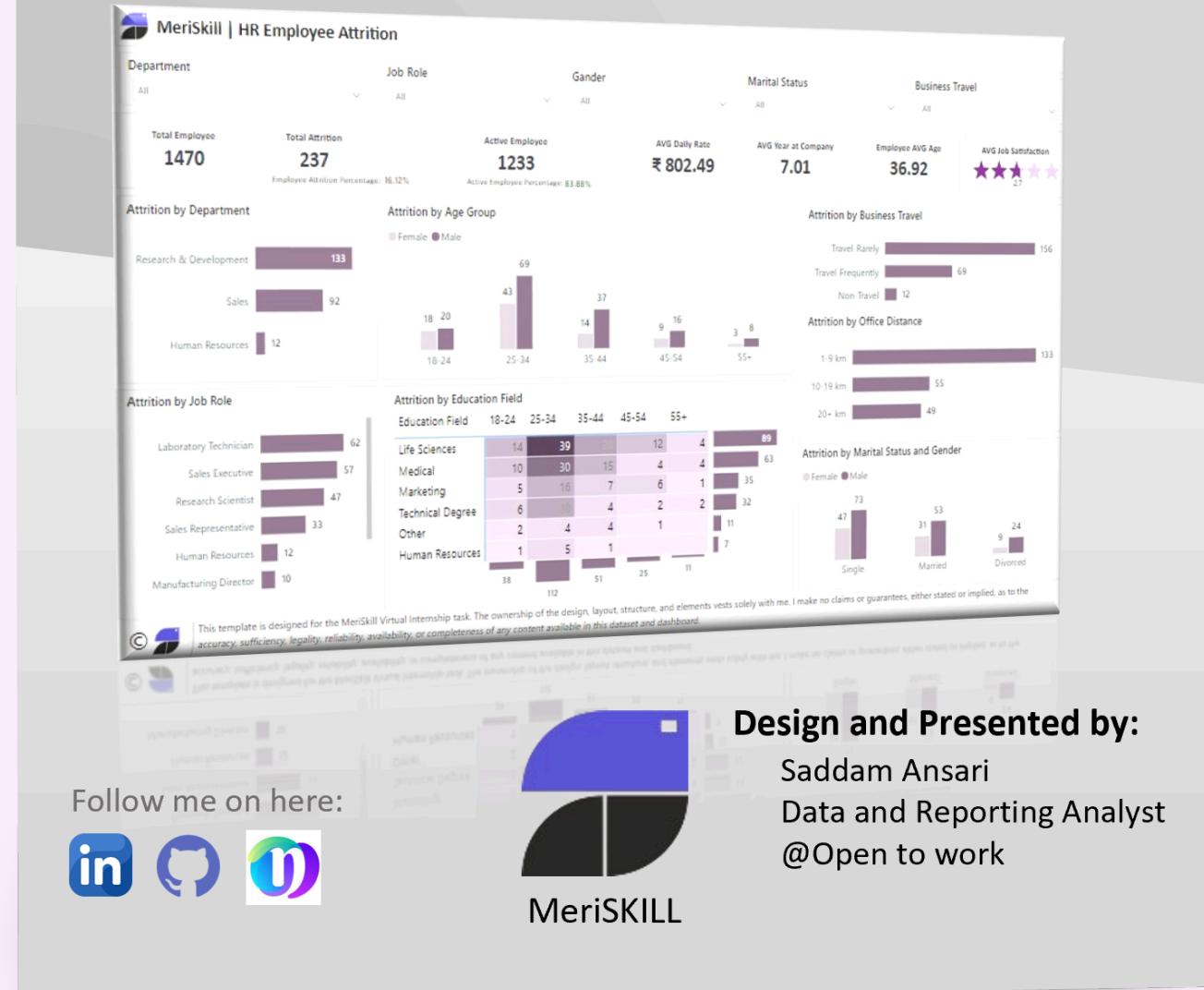
Task One

JULY 31-JUNE 05/2024

HR Attrition Analysis

Delving into the world of human resources, with a keen eye on data analysis to optimize talent management and organizational performance.

The best way to Present



Intro

Objective

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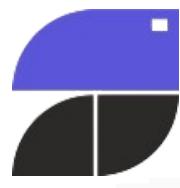
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Dashboard



Presented by- Saddam Ansari



About

The primary objective of this project is to leverage Power BI to analyze HR attrition data, providing actionable insights to optimize talent management and improve organizational performance. By identifying key factors contributing to employee attrition, we aim to empower HR departments with data-driven strategies to enhance employee retention and satisfaction.

A1. About Dataset:

For this HR Attrition Analysis project, an Excel sheet containing data on 1,471 employees was provided. The dataset includes various attributes related to employee demographics, job roles, and satisfaction levels. Key columns in the dataset are:

- | | | | |
|---------------------------|----------------------|----------------------------|---------------------------|
| • Age | • Gender | • OverTime | • YearsSinceLastPromotion |
| • Attrition | • HourlyRate | • PercentSalaryHike | • YearsWithCurrManager |
| • BusinessTravel | • JobInvolvement | • PerformanceRating | |
| • DailyRate | • JobLevel | • RelationshipSatisfaction | |
| • Department | • JobRole | • StandardHours | |
| • DistanceFromHome | • JobSatisfaction | • StockOptionLevel | |
| • Education | • MaritalStatus | • TotalWorkingYears | |
| • EducationField | • MonthlyIncome | • TrainingTimesLastYear | |
| • EmployeeCount | • MonthlyRate | • WorkLifeBalance | |
| • EmployeeNumber | • NumCompaniesWorked | • YearsAtCompany | |
| • EnvironmentSatisfaction | • Over18 | • YearsInCurrentRole | |

A2. Tools Used for this Project

In this HR Attrition Analysis project, I utilized a combination of powerful tools to ensure a comprehensive and visually appealing analysis:

1. **Power BI:** As always, I leveraged Power BI for data visualization and analysis. Its robust capabilities allowed me to create interactive and insightful dashboards that highlight key trends and patterns in employee attrition.
2. **Excel:** Excel was instrumental in data preparation. I used it for data profiling, cleaning, and transformation to ensure that the dataset was ready for detailed analysis in Power BI.
3. **PowerPoint:** Some of the graphics and visual elements were created using PowerPoint, which helped in crafting a clear and professional presentation of the findings.
4. **Canva:** Canva was used for designing certain elements, enhancing the overall aesthetic appeal of the presentation and dashboards.
5. **ChatGPT:** ChatGPT assisted in generating content and refining the narrative for the project documentation, ensuring clarity and coherence in the presentation of insights.

Why This Project is Important?

Employee attrition is a critical concern for any organization, as high turnover rates can lead to increased recruitment costs, loss of institutional knowledge, and decreased employee morale. Understanding the factors that contribute to employee attrition allows organizations to develop targeted strategies to retain valuable talent and foster a more stable and productive workforce.

This project is significant because it:

1. Identifies Key Attrition Drivers:

By analyzing various factors such as age, business travel, department, distance from home, job role, and more, this project uncovers the primary drivers of employee attrition. This helps HR departments focus on the most impactful areas to improve retention.

2. Provides Data-Driven Insights:

Utilizing data analysis tools like Power BI and Excel, the project offers a data-driven approach to understanding employee turnover. This helps in making informed decisions backed by concrete evidence rather than assumptions.

3. Enhances Organizational Performance:

By addressing the root causes of attrition, organizations can improve employee satisfaction and engagement, leading to higher productivity and better overall performance.

4. Supports Strategic Planning:

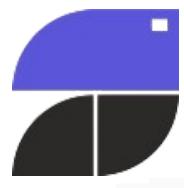
The insights gained from this analysis aid in strategic HR planning, helping organizations to develop effective policies and initiatives to reduce attrition rates and retain top talent.

5. Fosters a Positive Work Environment:

Understanding and addressing the reasons behind employee attrition contribute to creating a more positive and supportive work environment, where employees feel valued and motivated to stay.

In summary, this HR Attrition Analysis project is crucial for any organization looking to enhance its talent management strategies, reduce turnover costs, and build a more committed and satisfied workforce.





Insights

To provide a comprehensive and insightful analysis, I have structured the insights into various key topics. This approach ensures clarity and makes it easier to understand the different aspects of employee demographics and attrition trends. By breaking down the data into specific categories, we can uncover valuable patterns and trends that can inform HR strategies and improve organizational performance. The following insights are based on thorough analysis and visualization:

1. Total Employee Count and Attrition:

q1. How many employees are currently in the organization?

1233 83.88%

Active Employee

To address the question of how many employees are currently in the organization, a detailed analysis was conducted. The data reveals that there are 1,233 active employees, which constitutes 83.88% of the total workforce.

q2. What is the total number of employees who have left the organization (attrition)?

237

Total Attrition

The organization currently has a total of 1,471 employees. Out of these, 237 employees have left the organization, indicating an attrition rate. This means that 237 individuals have decided to leave the organization for various reasons, which is a significant number.

q3. What percentage of the total workforce has experienced attrition?

16.12%

% attrition

To understand the extent of employee attrition within the organization, we calculated the percentage of the total workforce that has experienced attrition. Our analysis revealed that 16.2% of the employees have left the organization.

2. Age Distribution Insights:

q1. What is the average age of employees in the organization?

36.92

AVG Employee Age

The average age of employees in our organization is 36.92 years. This metric provides a snapshot of the workforce's age demographics, offering insights into the experience and maturity levels present within the company.

q2. How does age distribution vary across different departments?

Department	18-24	25-34	35-44	45-54	55+	Total
Human Resources	3	22	25	9	4	63
Research & Development	67	348	342	157	47	961
Sales	27	184	138	79	18	446
Total	97	554	505	245	69	1470

To analyze how age distribution varies across different departments, I utilized a matrix visualization, displayed as a heat map. This method effectively highlights the concentration of employees within various age groups and departments, making it easy to identify trends and patterns.

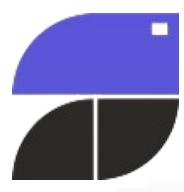
From the analysis, it is evident that the Research and Development department has the highest number of employees, with a total of 961 individuals. Within this department, the age groups 25-34 and 35-44 are particularly prominent. Specifically, there are 348 employees in the 25-34 age range and 342 employees in the 35-44 age range. This indicates a significant presence of mid-career professionals in the Research and Development department, which might be reflective of the skills and experience required for roles within this area.

q3. Is there a significant age group that shows higher attrition rates?

Department	18-24	25-34	35-44	45-54	55+	Total
Human Resources	2	8	2			12
Research & Development	22	65	29	8	9	133
Sales	14	39	20	17	2	92
Total	38	112	51	25	11	237

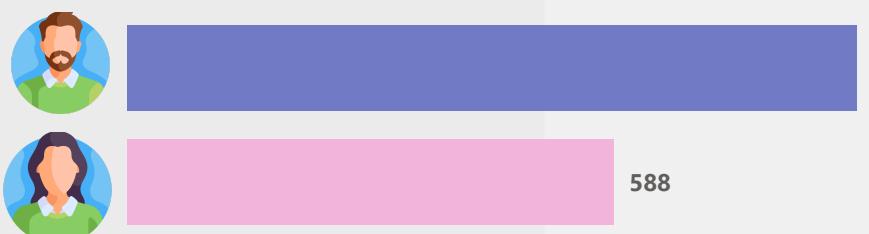
To determine if a specific age group shows higher attrition rates, I used a matrix heat map. The analysis revealed that the Research and Development department has the highest attrition among employees aged 25-34, with 65 employees leaving. Similarly, the Sales department shows 39 employees in the same age group leaving.





3. Gender Based Insights:

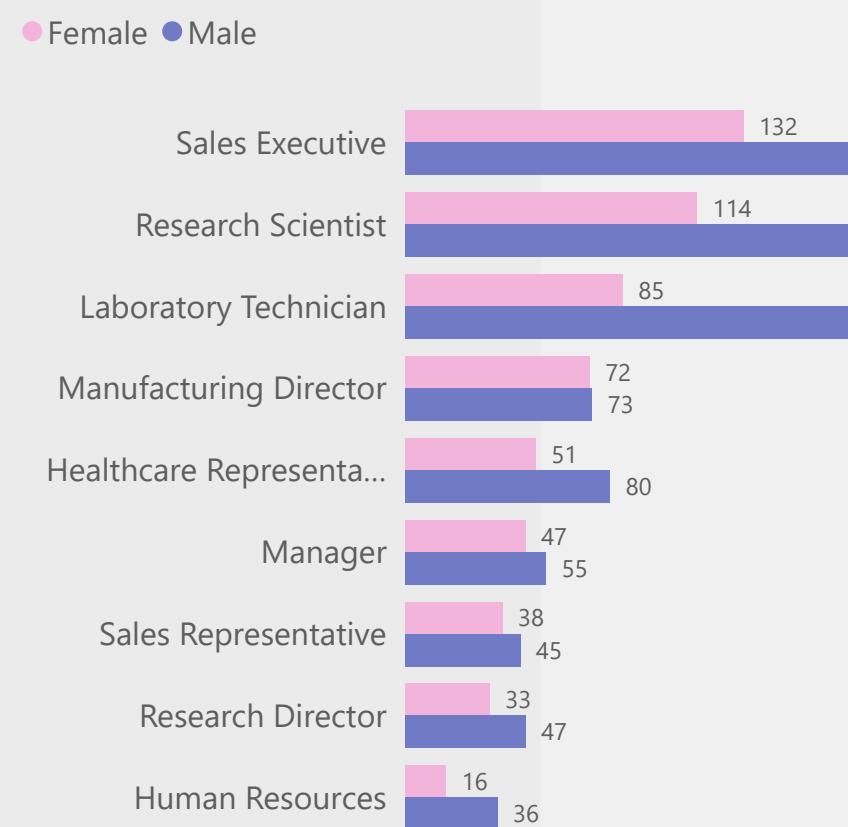
q1. What is the gender ratio in the organization?



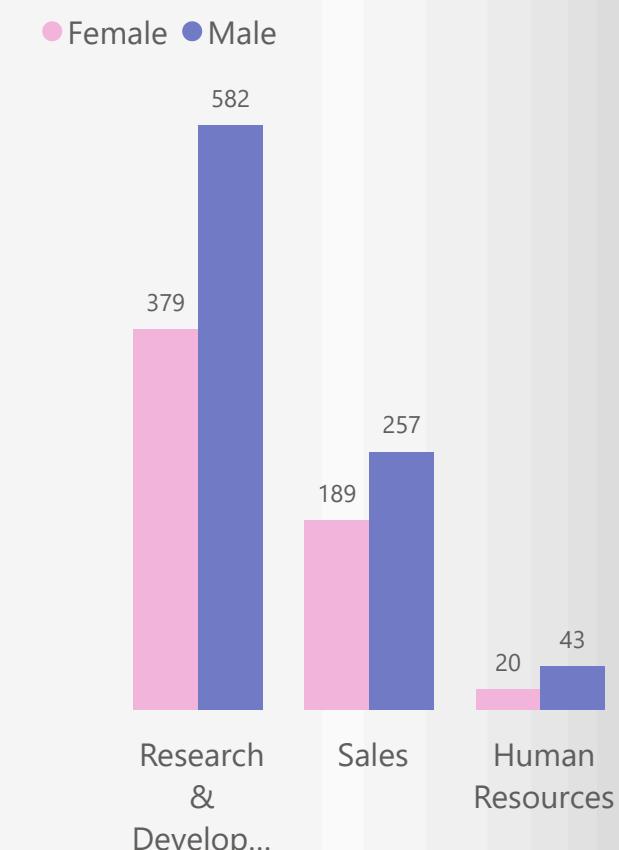
The organization comprises 882 male employees (60%) and 588 female employees (40%). This analysis highlights a higher representation of males,

q2. How does gender distribution vary across different job roles and departments?

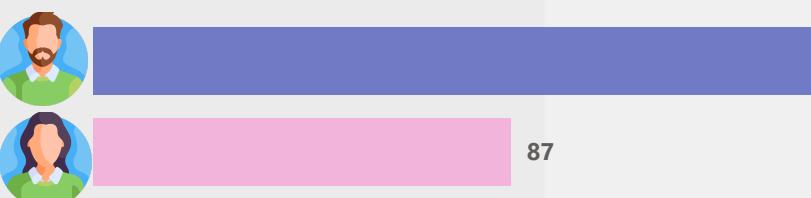
Total Employee by JobRole and Gender



Total Employee by Department and Gender



q3. Are there noticeable differences in attrition rates between male and female employees?

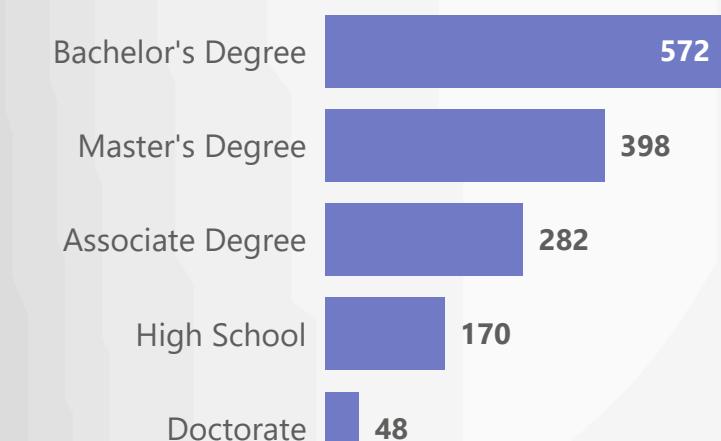


Our analysis shows a significant gender disparity in attrition rates. Out of 237 total attritions, 150 are male (63.29%) and 87 are female (36.71%). This indicates male employees are more likely to leave the organization than female employees.

2. Education and Field of Study Based Insights:

q1. What are the most common education levels among employees?

Total Employee by Education Level



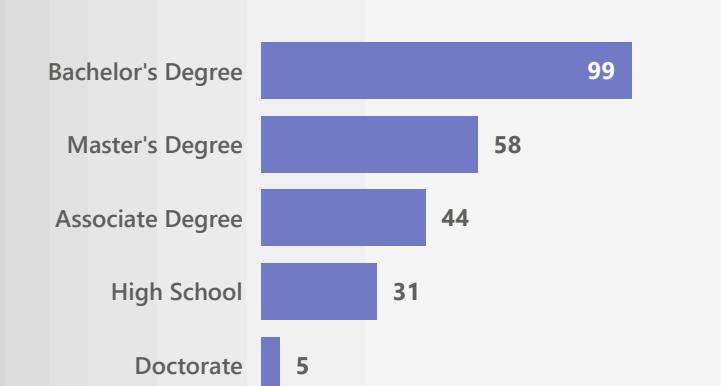
The average age of employees in our organization is 36.92 years. This metric provides a snapshot of the workforce's age demographics, offering insights into the experience and maturity levels present within the company.

q2. Which fields of study are most prevalent in different departments?

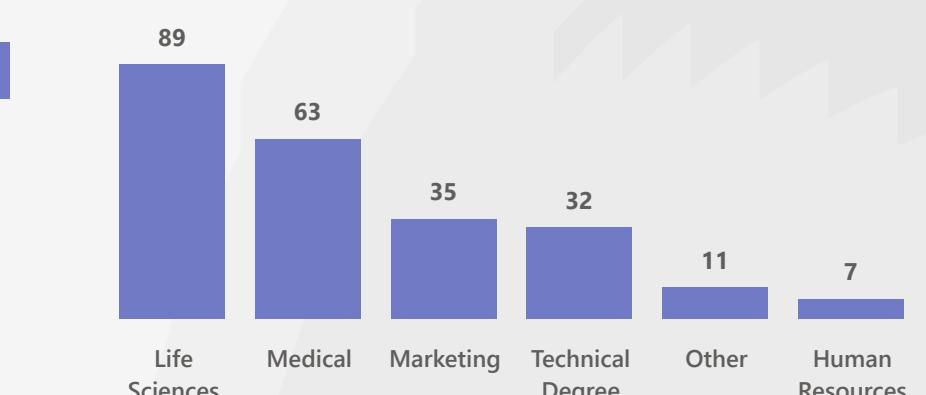
Department	Human Resources	Life Sciences	Marketing	Medical	Other	Technical Degree	Total
Human Resources	27	16		13	3	4	63
Research & Development		440		363	64	94	961
Sales		150	159	88	15	34	446
Total	27	606	159	464	82	132	1470

q3. Is there a correlation between education level/field of study and attrition rates?

Total Attrition by Education Level



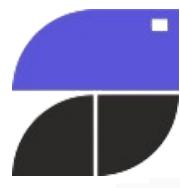
Total Attrition by Education Fields



Yes, there is a noticeable correlation. Employees with a bachelor's degree experience the highest attrition rate, with 99 cases recorded. This suggests that individuals with a bachelor's degree may be more likely to leave the organization for better opportunities.

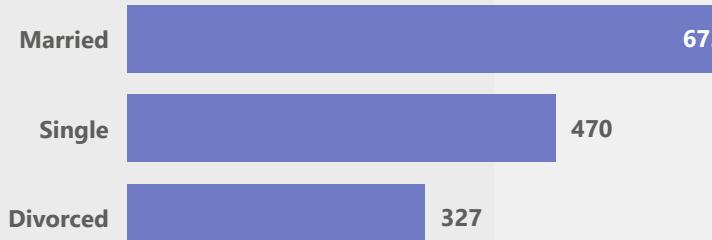
Similarly, employees with a background in Life Sciences also face high attrition rates. Understanding these trends can help develop targeted strategies to retain talent, addressing the specific needs and career aspirations of these groups.





5. Marital Status Based Insights:

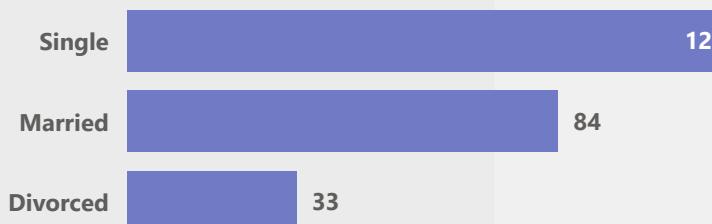
q1. What is the distribution of marital status among employees?



In our organization, 45.78% of employees are married (675), 31.97% are single (470), and 22.24% are divorced (327). This distribution highlights the diverse marital statuses within our workforce, necessitating tailored support and engagement strategies.

q2. How does marital status correlate with employee attrition?

Total Attrition by Marital Status



Our analysis shows that marital status significantly correlates with employee attrition. Single employees account for the highest attrition, with 120 out of 237 employees leaving, making up 50% of total attrition. Married employees follow with 84 attritions, or 35.44%, while divorced employees have the lowest attrition rate, with 33 leaving, representing 13.92% of the total.

q3. Are married employees more likely to stay compared to single employees?

In our organization, married employees, who make up 45.78% of the workforce, are less likely to leave compared to single employees. Single employees, who represent 31.97% of the workforce, have the highest attrition rate, with 50% of the total attrition. In contrast, married employees account for 35.44% of attrition, indicating a higher retention rate. Divorced employees, comprising 22.24% of the workforce, have the lowest attrition rate at 13.92%.

This suggests that married employees are more likely to stay with the organization compared to single employees.

6. Tenure and Experience Based Insights:

q1. What is the average length of service (tenure) of employees in the organization?

7.01

AVG Years at Company

The average employee tenure in the organization is 7.01 years. This indicates a relatively stable workforce with employees typically staying with the company for over seven years.

q2. How does tenure vary across different job role and departments?

AVG Years at Company by JobRole

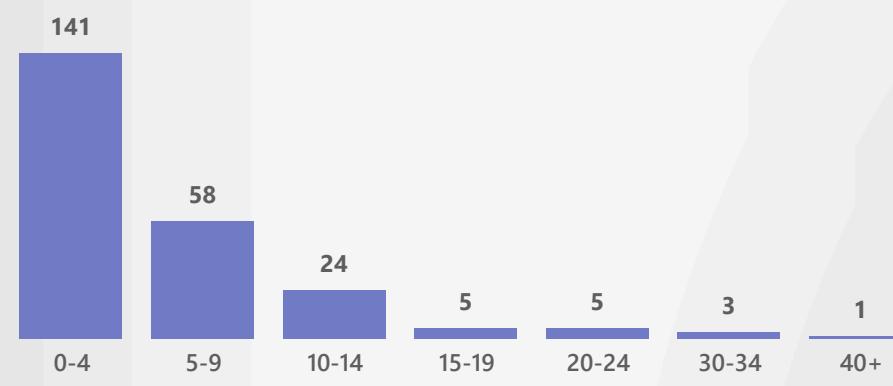


AVG Years at Company by Department



q3. Is there a particular tenure range where attrition is higher?

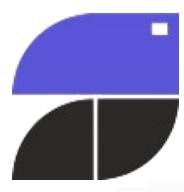
Total Attrition by Avg Years at company



The analysis reveals that the highest attrition occurs among employees with a tenure range of 0-4 years. Specifically, 141 employees in this tenure range have left the organization, accounting for 59% of the total attrition of 237.

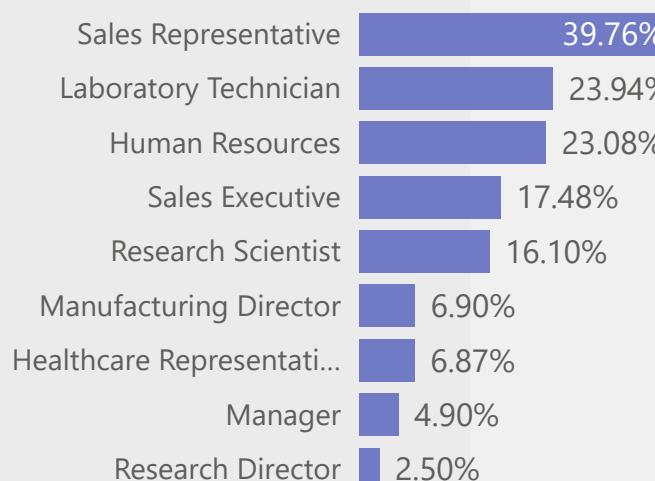
This significant percentage indicates a notable trend where newer employees, within their first few years, are more likely to leave.





7. Job Role and Department Based Insights:

q1. Which job roles have the highest and lowest attrition rates?



The analysis shows that Sales Representatives have the highest attrition rate at 39.76%, while Research Directors have the lowest at 2.50%. Hover over any bar on the interactive chart to see detailed insights on attrition rates for each job role.

q2. How does attrition vary across different departments?

Department	Total Employee	Total Attrition	Attrition Rate	Active Employee
Research & Development	961	133	13.84%	828
Sales	446	92	20.63%	354
Human Resources	63	12	19.05%	51
Total	1470	237	16.12%	1233

8. Work-Life Balance Based Insights:

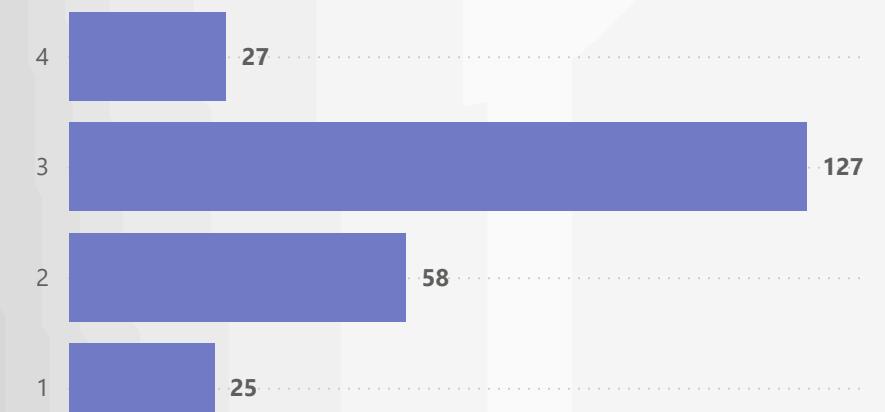
q1. How do employees rate their work-life balance?

2.76
AVG Work Life Balance

The analysis reveals that the average work-life balance rating among employees is 2.76 out of 5. This indicates that there is a moderate level of satisfaction with work-life balance within the organization. However, it also highlights that there is significant room for improvement.

q2. Is there a relationship between work-life balance ratings and attrition?

Total Attrition by Work Life Balance



Yes, the analysis shows that employees with a work-life balance rating of 3 out of 4 have the highest attrition, accounting for 53.59% (127 employees) of the total attrition. Those with a rating of 2 out of 4 have an attrition count of 58, followed by 1 out of 4 with 25, and 4 out of 4 with 27.

Note: A rating of 1 indicates poor work-life balance, while a rating of 4 indicates the best work-life balance.

q3. Do employees in certain departments or job roles report better work-life balance?

Average of WorkLifeBalance by JobRole

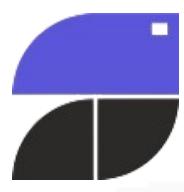


Average of WorkLifeBalance by Department



The analysis reveals minor but noteworthy differences in work-life balance ratings across job roles and departments. HR professionals have an average rating of 2.92, while Research Scientists have 2.68. At the department level, the HR department has the highest rating of 2.92, followed by Sales at 2.82, and R&D at 2.73. These small differences, though not substantial, still highlight areas for potential improvement in work-life balance within the organization.





9. Compensation and Benefits Based Insights:

q1. What is the average salary of employees across different departments?

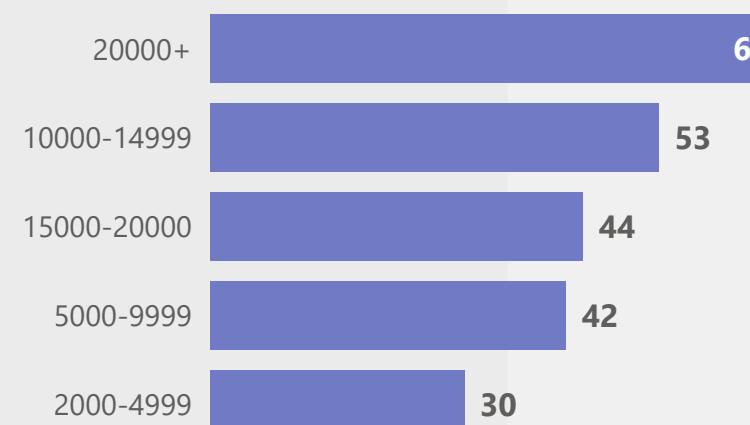
AVG Monthly Income by Department



The average salary across departments shows minor differences: Sales department employees earn an average of ₹14,490, while those in Research and Development average ₹14,285. The Human Resources department has the lowest average salary at ₹13,493. Although these variations are small, they highlight slight disparities in departmental compensation.

q2. How does compensation impact attrition rates?

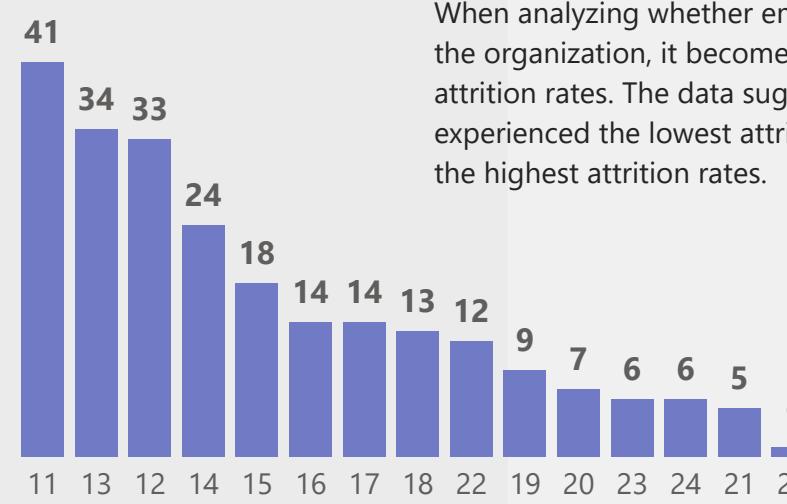
Total Attrition by Work Life Balance



Analyzing the average salary across departments reveals that departments with higher average salaries often experience higher attrition rates. This correlation suggests the importance of balancing competitive compensation with effective retention strategies to sustain talent retention in high-salary departments.

q2. Are employees with certain benefits more likely to stay with the organization?

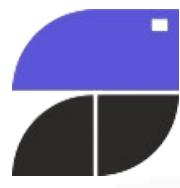
Total Attrition by Salary Hike



When analyzing whether employees with certain benefits are more likely to stay with the organization, it becomes evident that salary hikes play a crucial role in reducing attrition rates. The data suggests that employees who received a 25% salary hike experienced the lowest attrition, while those who received only an 11% hike showed the highest attrition rates.

This finding underscores the impact of competitive salary increases in enhancing employee retention. By offering substantial salary hikes, organizations can effectively mitigate attrition and foster greater employee loyalty and satisfaction.





Project Summary:

The HR Attrition Analysis project aims to utilize Power BI and data-driven insights to tackle employee turnover effectively. By exploring various factors contributing to attrition, the project offers actionable strategies to enhance talent management and organizational performance.

Why This Project is Important:

Employee attrition poses significant challenges, including increased costs and decreased morale. Understanding its drivers empowers organizations to implement targeted retention strategies and foster a stable workforce.

Key Insights for HR:

Age Distribution Insights:

- Average employee age is 36.92 years, reflecting the workforce's maturity and experience.
- Research & Development and Sales departments show significant mid-career presence (25-44 age groups).

Gender-Based Insights:

- Male employees (60%) outnumber females (40%), with higher attrition rates among males (63.29%).

Education and Field of Study Insights:

- Bachelor's degree holders exhibit the highest attrition rates, emphasizing the need for targeted retention efforts.
- Life Sciences and Technical fields see notable attrition, suggesting career mobility opportunities influence turnover.

Marital Status Insights:

- Single employees (31.97%) experience the highest attrition (50%), followed by married (35.44%) and divorced (13.92%) employees.
- Married employees show greater retention potential.

Tenure and Experience Insights:

- New hires (0-4 years) have the highest attrition (59%), indicating early career challenges or expectations misalignment.

Job Role and Department Insights:

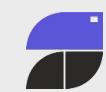
- Sales Representatives have the highest attrition rate (39.76%), while Research Directors have the lowest (2.50%).
- Variations in work-life balance ratings impact attrition, with moderate satisfaction levels across departments.

Compensation and Benefits Insights:

- Minor salary differences across departments influence attrition rates, highlighting the importance of competitive compensation strategies.
- Competitive salary hikes correlate with improved retention rates.

Commute and Distance Insights:

- Employees with shorter commutes (1-9 km) exhibit higher attrition rates (133), suggesting commute distance as a contributing factor.
- Commute distance alone does not solely determine attrition but impacts job satisfaction and retention.



Recommendations Based on Insights:

Targeted Mid-Career Development:

Develop specialized training and growth opportunities for mid-career employees in Research & Development and Sales departments to enhance job satisfaction and retention.

Gender-Sensitive HR Policies:

Implement gender-balanced policies and support networks to address higher attrition rates among male employees, ensuring equal opportunities and support.

Tailored Support for Bachelor's Degree Holders:

Create career advancement programs and mentorship opportunities tailored to bachelor's degree holders, focusing on career progression and professional development.

Support for Single Employees:

Introduce flexible work arrangements and wellness programs to support single employees in achieving work-life balance and enhancing job satisfaction.

Enhanced Onboarding for New Hires:

Strengthen onboarding processes with clear career paths and early engagement initiatives to improve retention among new employees, particularly within their first four years.

Work-Life Balance Initiatives:

Implement initiatives such as flexible scheduling and remote work options to improve work-life balance ratings across all departments, thereby reducing attrition.

Competitive Compensation Strategies:

Regularly review and adjust compensation packages to align with industry standards, particularly in departments experiencing higher attrition rates.

Performance-Based Salary Increases:

Introduce performance-based salary hikes and recognition programs to reward high achievers and foster loyalty among employees.

Supportive Commute Policies:

Offer transportation benefits or remote work options to mitigate the impact of commute distance on job satisfaction and retention.

Personalized Career Counseling: Provide personalized career counseling and advancement guidance to employees in Life Sciences and Technical fields to align their career goals with organizational opportunities.

Leadership Training for Managers: Invest in leadership and managerial training programs to equip managers with the skills to support and retain their teams effectively.

Diversity and Inclusion Initiatives:

Strengthen diversity and inclusion efforts to create a more inclusive workplace culture that values different perspectives and reduces turnover.



Department

All

Job Role

All

Gender

All

Marital Status

All

Business Travel

All

Total Employee

1470

Total Attrition

237Employee Attrition Percentage: **16.12%**

Active Employee

1233Active Employee Percentage: **83.88%**

AVG Daily Rate

₹ 802.49

AVG Year at Company

7.01

Employee AVG Age

36.92

AVG Job Satisfaction



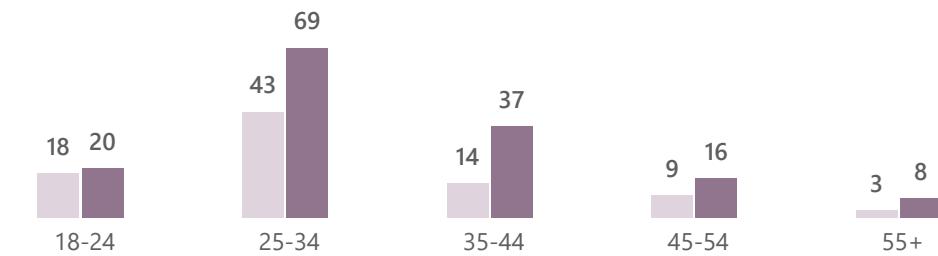
Attrition by Department



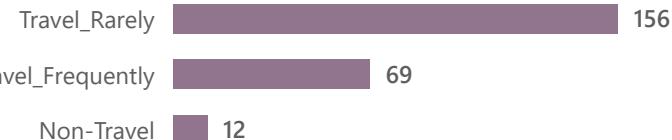
Attrition by Age Group

Female

Male



Attrition by Business Travel

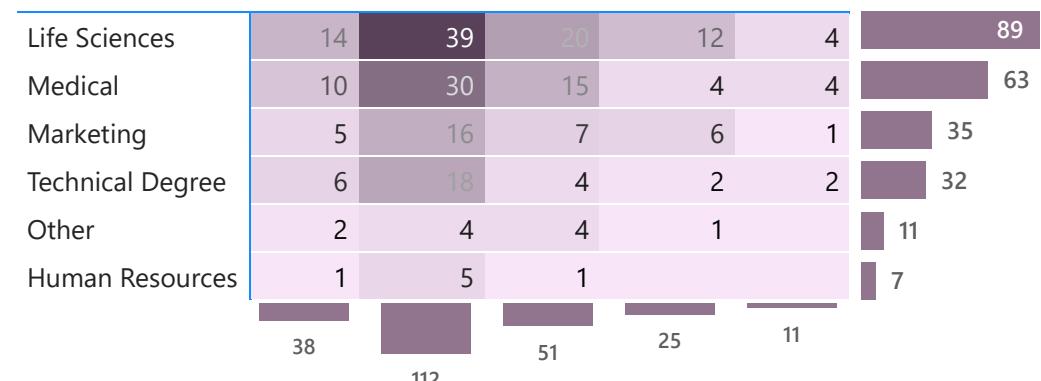


Attrition by Job Role



Attrition by Education Field

Education Field 18-24 25-34 35-44 45-54 55+



Attrition by Marital Status and Gender

Female

Male

