



Lovely Professional University

PowerSale's HR Data Analytics

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Acknowledgement

Acknowledging the contributions and support of those involved in the creation of the **"PowerSale's HR Data Analytics"** is essential.

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Tableau

Tableau is a powerful data visualization tool used for business intelligence, offering the following features:

- **Data Connectivity:** Connects to various data sources, including Excel, SQL, and cloud databases.
- **User-Friendly Interface:** Drag-and-drop functionality for creating visualizations without advanced technical skills.
- **Real-Time Data Analysis:** Supports live data connections for up-to-date insights.
- **Advanced Visualizations:** Provides a wide range of charts (e.g., bar, line, pie, maps) and custom visualizations.
- **Dashboards:** Combine multiple visualizations into interactive dashboards for deeper insights.
- **Collaboration and Sharing:** Share and collaborate on reports through Tableau Server or Tableau Online.
- **Cross-Industry Applications:** Used across sectors like finance, marketing, healthcare, and sales for data analysis and decision-making.

Tableau empowers users to turn complex data into visually appealing, easy-to-interpret insights.



Data Introduction

The dataset contains 43 fields and 1470 rows, providing employee-related information across various departments. Key fields include:

- Attrition: Whether an employee left the company (Yes/No).
- Business Travel: Frequency of business travel (e.g., Rarely, Frequently).
- Department: The department the employee works in.
- Job Role: The employee's job title (e.g., Manager, Developer).
- Gender: Employee gender.
- Age: Employee age.
- Job Satisfaction: Employee satisfaction with their job.
- Monthly Income: Employee's monthly salary.
- Years At Company: Number of years the employee has worked at the company.
- Performance Rating: Employee's performance score.

This dataset is useful for analyzing employee attrition, job satisfaction, and factors affecting retention and performance.

Introduction

Purpose:

The PowerSales Tableau Dashboard was developed with the primary goal of analyzing key employee metrics, particularly attrition and job satisfaction, to provide businesses with valuable insights. The dashboard aggregates and visualizes diverse employee-related data, enabling decision-makers to identify patterns, trends, and correlations that might otherwise remain hidden. By offering a comprehensive and easy-to-understand representation of this data, the dashboard empowers leaders to make informed decisions that can directly impact employee retention, morale, and overall organizational performance.

Background:

Employee attrition remains one of the most significant challenges facing businesses in today's competitive landscape. High attrition rates result in increased recruitment and training costs, the loss of institutional knowledge, and a negative impact on team productivity and morale. In addition, retaining top talent becomes more challenging as younger generations seek employers who provide both career growth opportunities and a healthy work-life balance. Understanding the root causes of attrition, such as job satisfaction, departmental challenges, and work-life balance, is critical for organizations looking to improve their retention strategies. The PowerSales Tableau Dashboard was designed to address these issues by offering a data-driven approach to employee management. Through interactive visualizations and dynamic filters, the dashboard allows for the identification of key at-risk employee groups, uncovering trends that can guide leadership in creating more effective employee retention programs and fostering a supportive work environment.

Intended Outcomes

1. Identify specific demographics and departments with the highest attrition rates, enabling targeted intervention strategies.
2. Provide a comprehensive, visual representation of job satisfaction trends and factors impacting employee well-being.
3. Empower HR and management teams with the ability to drill down into the data, filter by time periods, employee characteristics, and job roles, ensuring a tailored approach to each individual or team's needs.
4. Support the creation of actionable strategies based on data-driven insights, which can directly influence talent retention, employee engagement, and productivity.
5. Facilitate real-time analysis of key employee metrics, allowing organizations to stay ahead of potential retention issues before they escalate into larger problems.

Interactive Dashboard

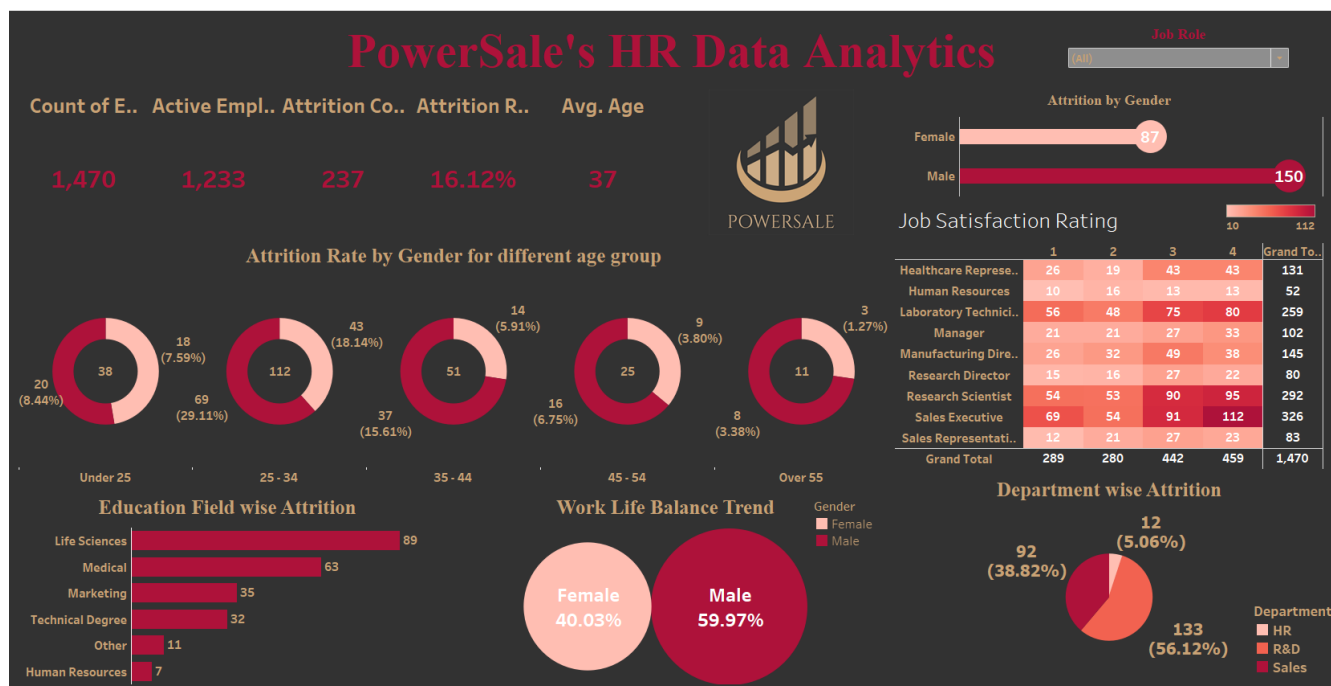
An interactive dashboard is like a digital control center for data. Imagine it as a smart tool that shows you important information about sales, customers, and trends in a way that's easy to understand and explore.

1. **Always Up-to-Date:** This dashboard keeps everything current, so you're never looking at old data. It refreshes automatically to show the latest numbers and trends.
2. **Easy to Use:** Think of it like a user-friendly map. You can easily find what you're looking for with clear labels and helpful hints. It's designed so that anyone can navigate it without getting lost.
3. **Filter and Dive Deeper:** Want to see sales from a specific month or compare different regions? You can filter the data instantly. It's like zooming in on a map to see more details.
4. **Clickable Charts:** The charts and graphs are like interactive stories. You can click on different parts to see more details or switch between views to get a better picture of what's going on.
5. **Play with the Numbers:** You're not just looking at pretty pictures; you can interact with the actual data. Want to see which products are selling the most or how different age groups are ordering? You can dig into the numbers right there on the dashboard.
6. **Works Everywhere:** It's like having your data on the go. Whether you're on a computer, tablet, or phone, the dashboard adjusts to fit your screen so you can access it anytime, anywhere.

In short, an interactive dashboard is like having a super-smart assistant that helps you make sense of a lot of data quickly and easily. It's all about making information accessible and actionable for everyone involved.

[Link to the Dashboard >>](#)

https://drive.google.com/file/d/1qmDzJd-brghmyini_veH2IYvnEfYOrS9y/view?usp=sharing

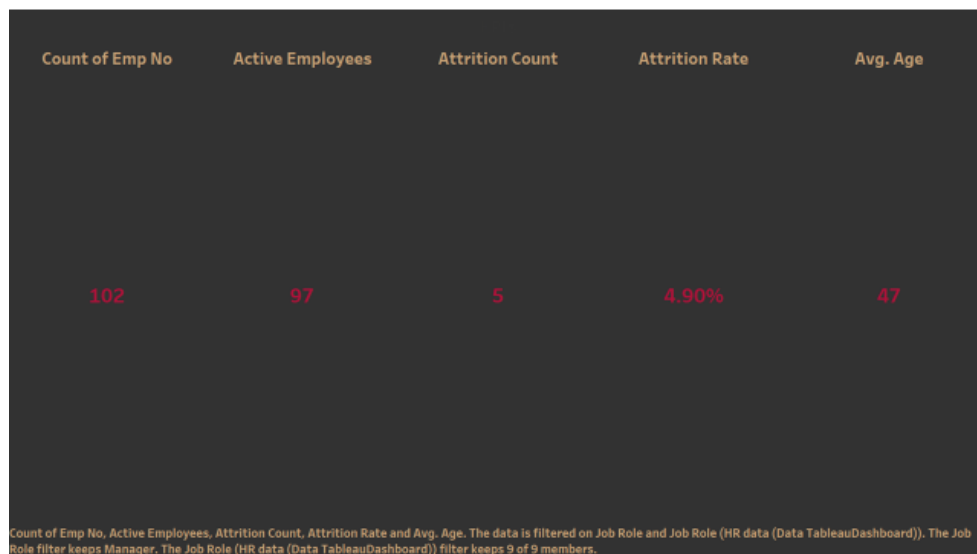


Dashboard Components

- **KPI's (Key Performance Indicators) :**

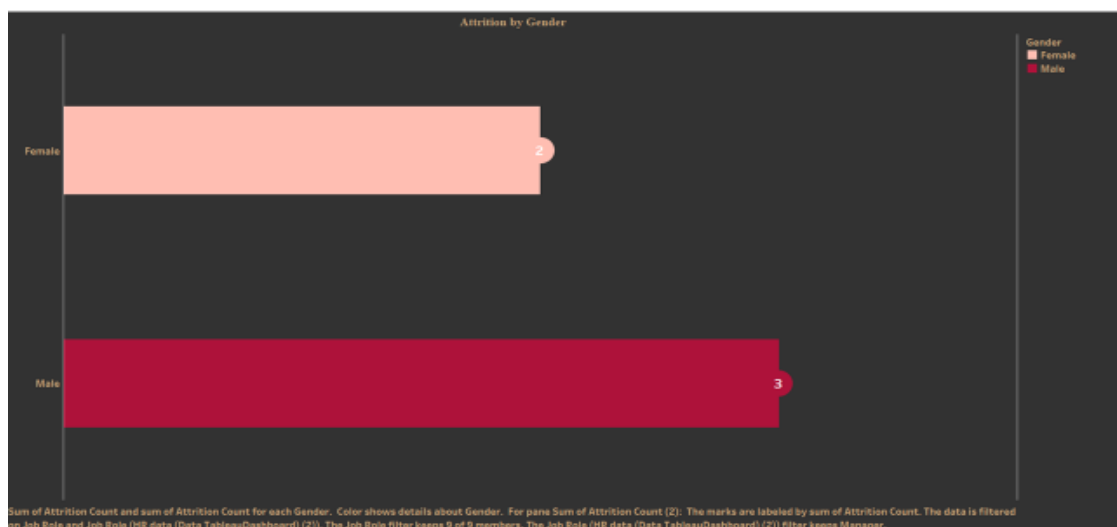
Purpose: Provides a snapshot of the most important metrics related to employee retention, such as the overall attrition rate and average job satisfaction.

Visual Type: Numeric indicators, with color coding to highlight areas that are above or below target thresholds.



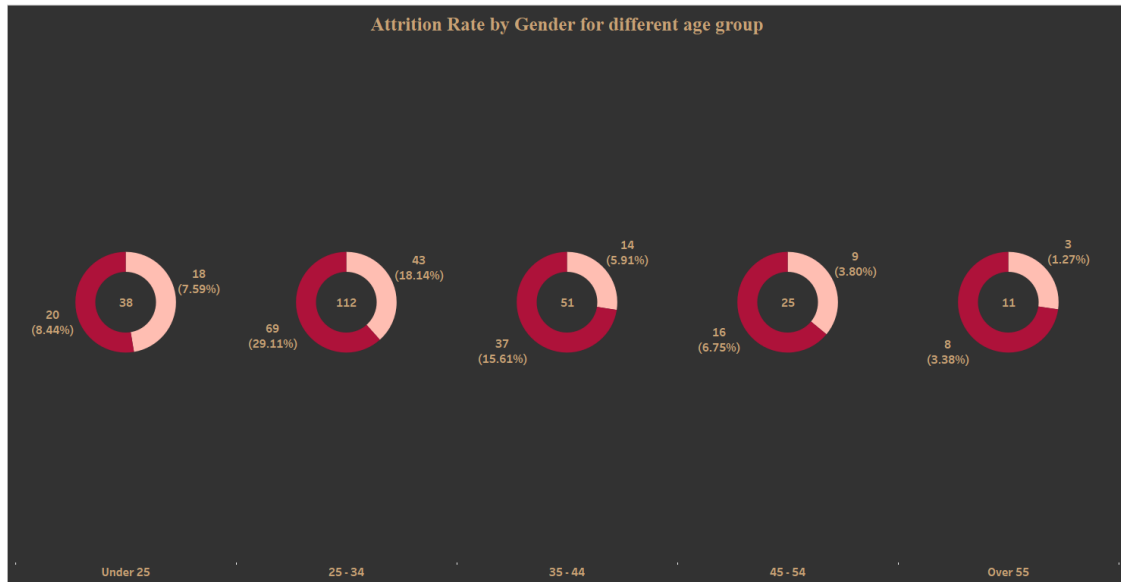
- **Attrition by Gender**

- **Purpose:** Focuses on comparing attrition rates for male and female employees, helping to reveal any gender-specific patterns or discrepancies in employee retention.
 - **Visual Type:** Side-by-side bar charts, enabling easy comparison between genders.



- **Attrition Rate by Gender for Different Age Groups**

- **Purpose:** This worksheet compares the attrition rates across different age groups and genders to help identify if there are specific demographics more prone to leaving the company.
- **Visual Type:** A combination of bar and line graphs for a clear view of how attrition varies across gender and age.



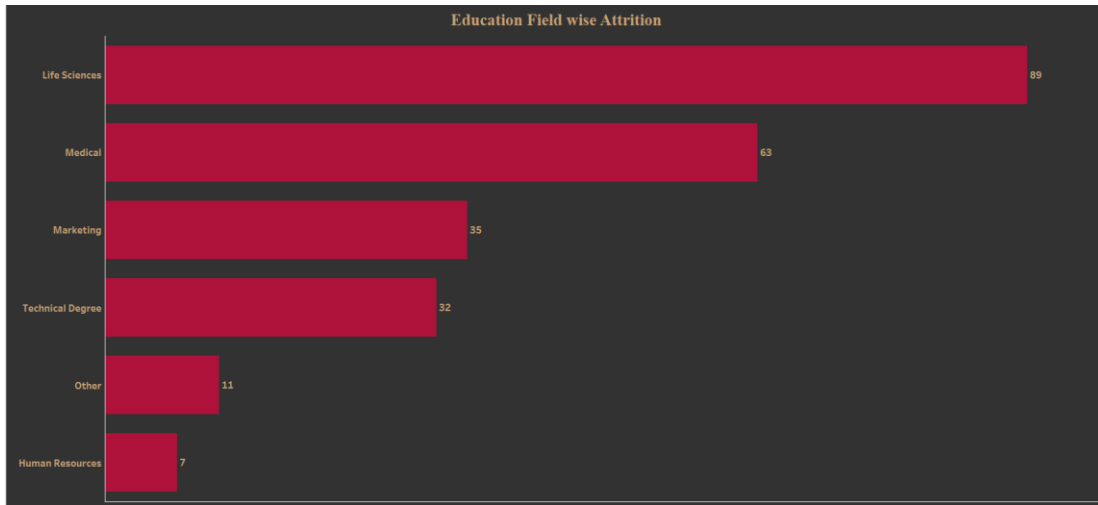
- **Job Satisfaction Rating**

- **Purpose:** Displays the overall job satisfaction ratings for employees, enabling HR to identify areas where improvement is needed.
- **Visual Type:** Heatmaps that present satisfaction ratings across departments, providing a quick and intuitive way to assess satisfaction levels.

	1	2	3	4	Grand Total
Healthcare Representative	26	19	43	43	131
Human Resources	10	16	13	13	52
Laboratory Technician	56	48	75	80	259
Manager	21	21	27	33	102
Manufacturing Director	26	32	49	38	145
Research Director	15	16	27	22	80
Research Scientist	54	53	90	95	292
Sales Executive	69	54	91	112	326
Sales Representative	12	21	27	23	83
Grand Total	289	280	442	459	1,470

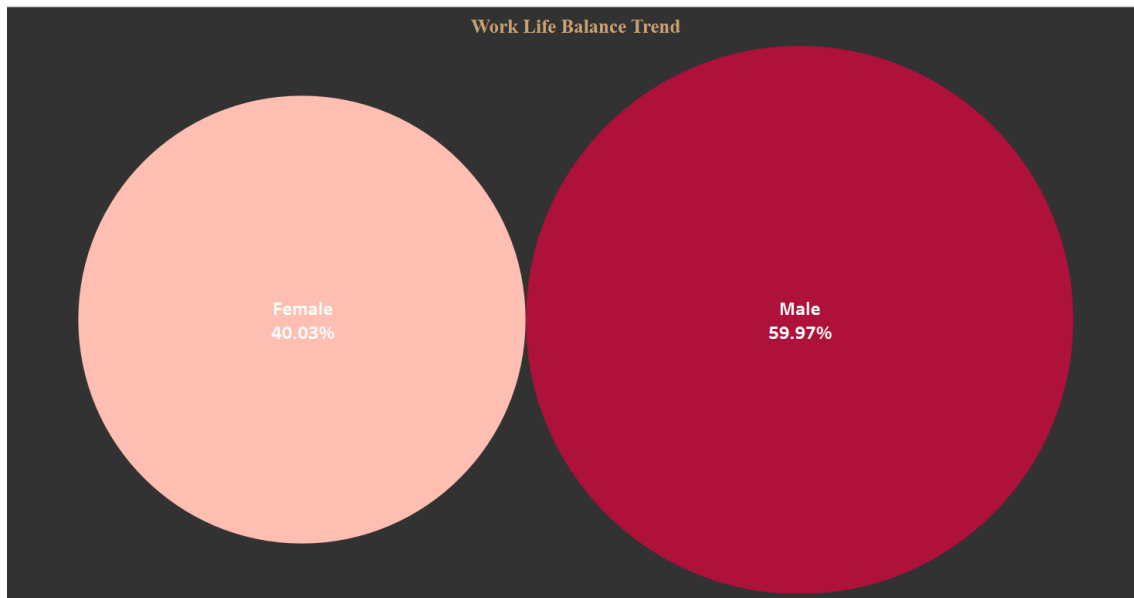
- **Education Field-Wise Attrition**

- **Purpose:** Analyzes how employee attrition correlates with their educational background, which may provide insights into potential mismatches in job roles or career progression opportunities.
- **Visual Type:** Stacked bar charts showing how attrition rates differ by education level.



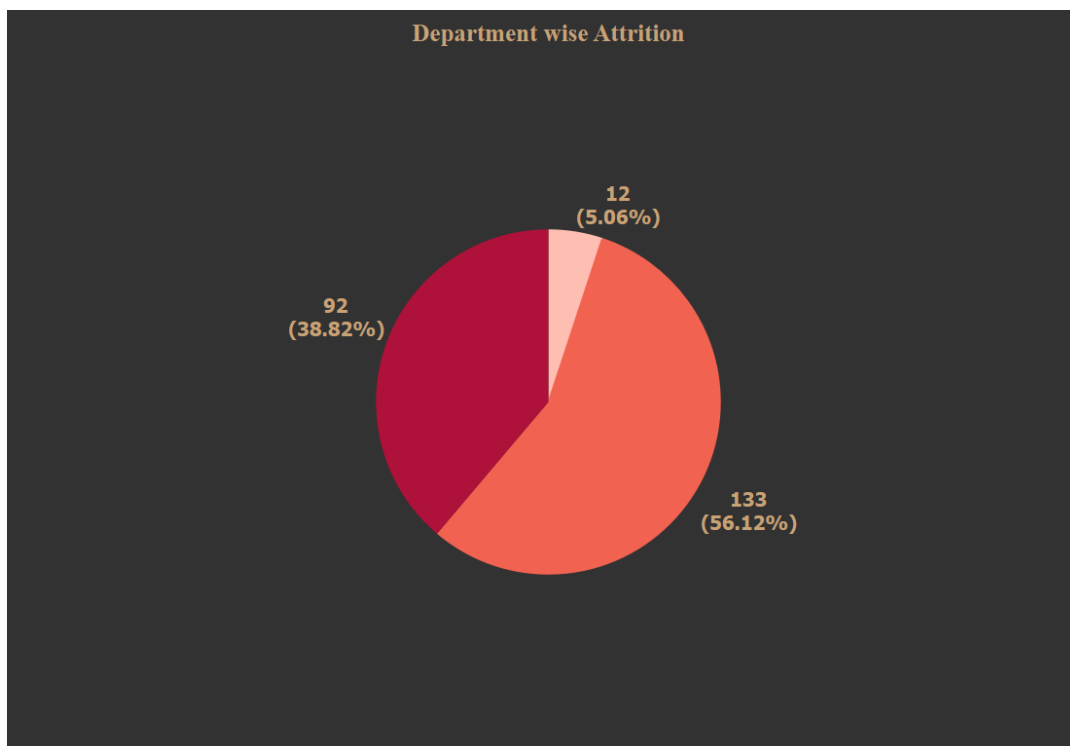
- **Work-Life Balance Trend**

- **Purpose:** Tracks the trend of work-life balance satisfaction over time, helping to understand how employee perception of work-life balance affects their decision to stay or leave.
- **Visual Type:** Line graph showing changes in work-life balance satisfaction over different periods.



- **Department-Wise Attrition**

- **Purpose:** Highlights which departments are experiencing higher attrition rates, providing insights into where retention strategies need to be focused most urgently.
- **Visual Type:** Tree map, allowing for a visual representation of attrition across different departments with size and color coding for quick identification of high-risk areas.



Visualizations

The dashboard leverages various visualization types to present employee data clearly and interactively:

1. **Bar Charts:** These are used to compare attrition rates across different categories like gender, age, or department. They offer a quick, straightforward comparison of data points.
2. **Line Graphs:** These are utilized to display trends over time, such as changes in work-life balance satisfaction and attrition rates over multiple periods.
3. **Tree Maps:** Used to display department-wise attrition, tree maps visually represent hierarchical data and show how much each department contributes to overall attrition.
4. **Heatmaps:** These provide a visual comparison of job satisfaction across various departments and demographics. They allow for quick identification of areas with low satisfaction levels.
5. **KPIs:** Numeric indicators display key metrics such as overall attrition rate and job satisfaction levels, with color-coded thresholds to highlight performance.
6. **Interactive Filters:** The dashboard includes interactive filters, allowing users to drill down into specific segments of the data (e.g., gender, age group, department) for more granular insights.

Each visualization is designed to be dynamic, providing users the ability to interact with the data and uncover deeper insights as needed.

Methodology

The development process for the PowerSales Tableau Dashboard followed these key steps:

1. Data Preparation:

- Data was cleaned and pre-processed to ensure consistency and accuracy, removing any discrepancies or outliers that could skew the results.
- Calculated fields were created to compute metrics such as attrition rate by department, average job satisfaction, and work-life balance scores.
- Data blending allowed for the integration of various datasets (employee demographics, job metrics, and attrition data) to provide a comprehensive view of the employee lifecycle.

2. Dashboard Design:

- The dashboard was designed with a focus on user experience, ensuring that it was intuitive and easy to navigate.
- Filters were incorporated into the design to allow HR teams to explore the data in multiple ways, such as by department, gender, or tenure.
- Visualizations were arranged logically, with key metrics placed at the top for quick access and detailed views in subsequent sections.

3. Validation:

- The dashboard underwent extensive testing using sample data to verify that it provided accurate insights and that all interactive elements worked correctly.
- Feedback from key stakeholders was gathered during the testing phase to ensure that the dashboard met the needs of HR and management teams.

Insights

The insights gathered from the dashboard reveal several key findings:

1. Attrition by Age Groups and Gender:

- Younger employees (aged 20–30) exhibit higher attrition rates, particularly among females, suggesting the need for targeted interventions such as improved work-life balance and career development opportunities for this demographic.

2. Department-Wise Trends:

- Departments such as Sales and IT have notably higher attrition rates compared to others, which could indicate issues with workload, management, or job satisfaction in these areas.

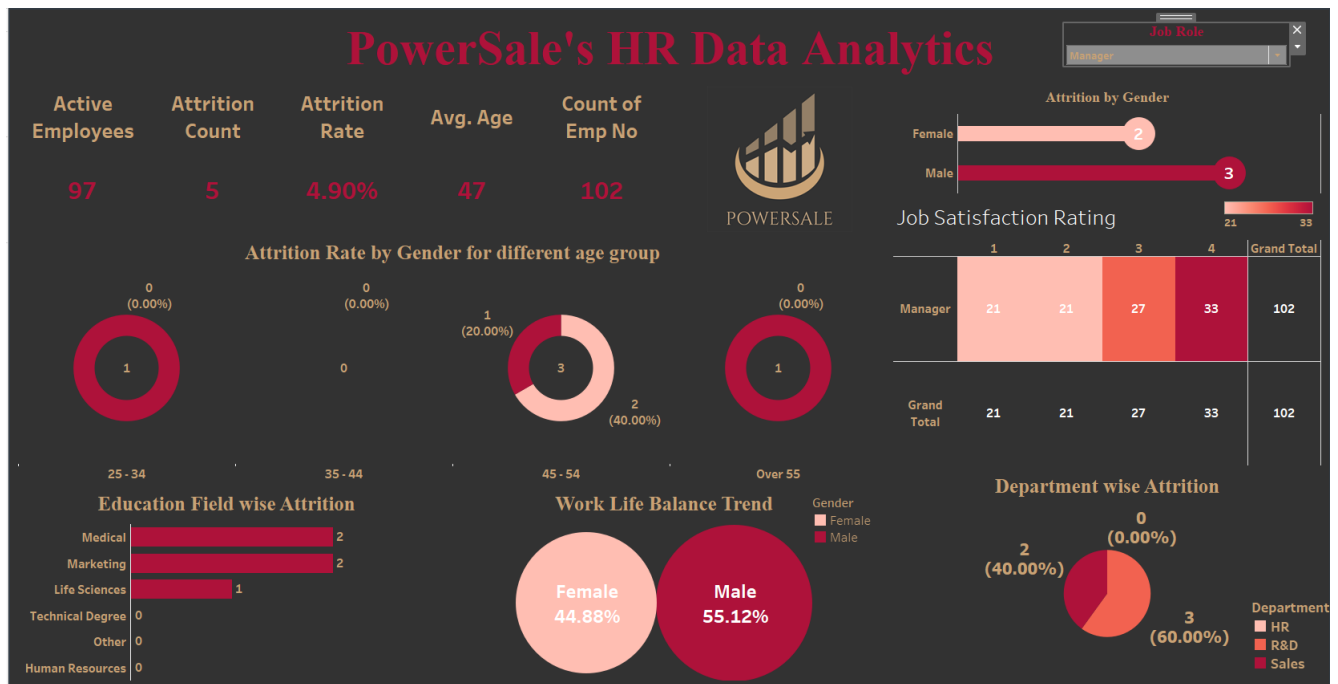
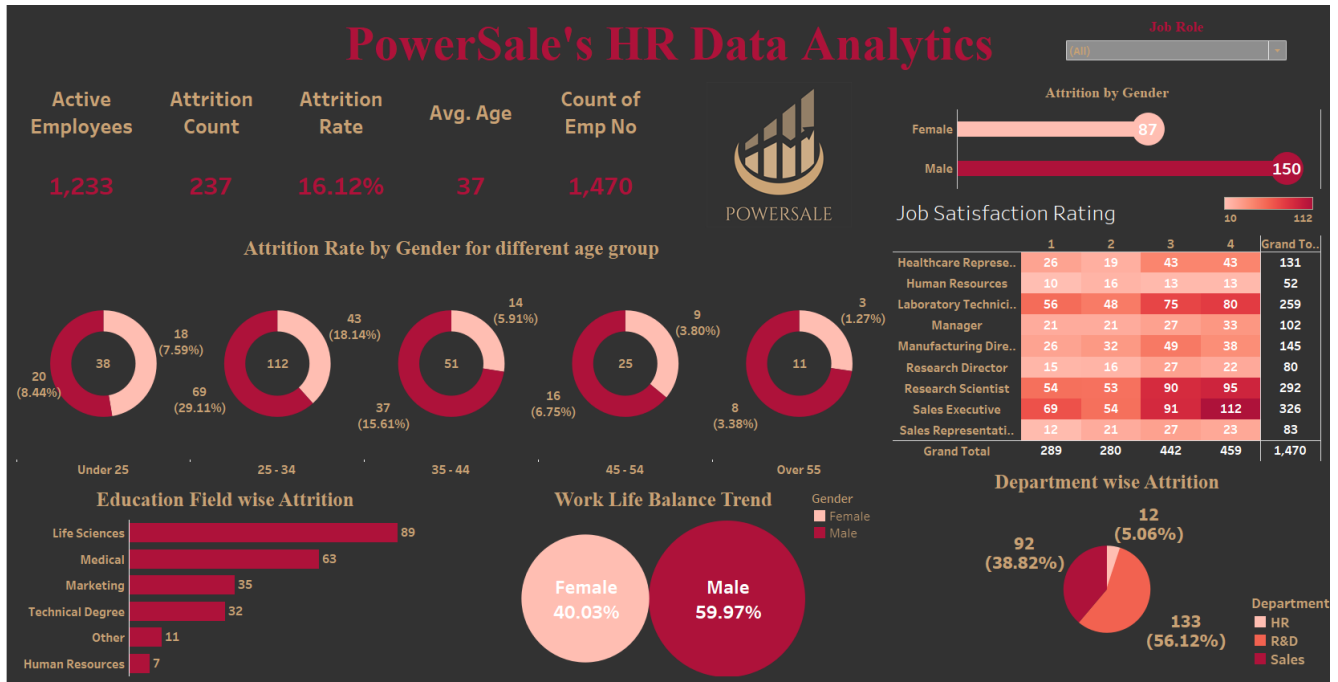
3. Job Satisfaction and Work-Life Balance:

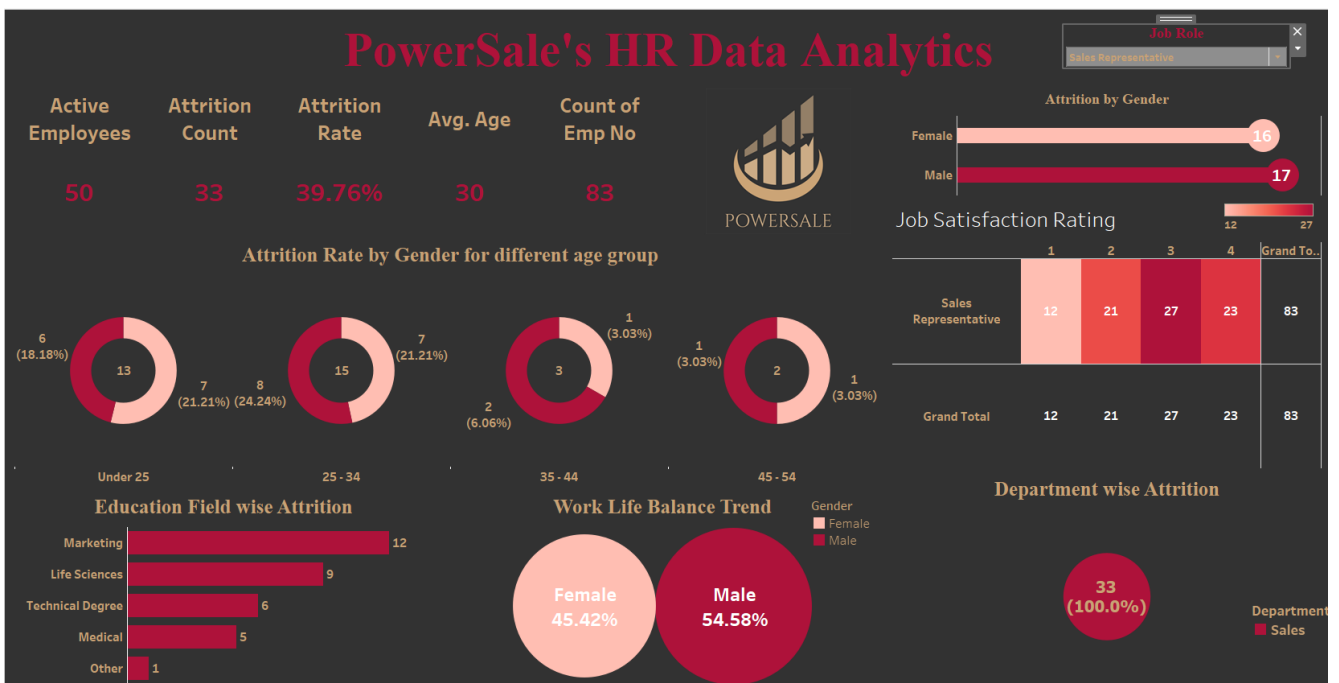
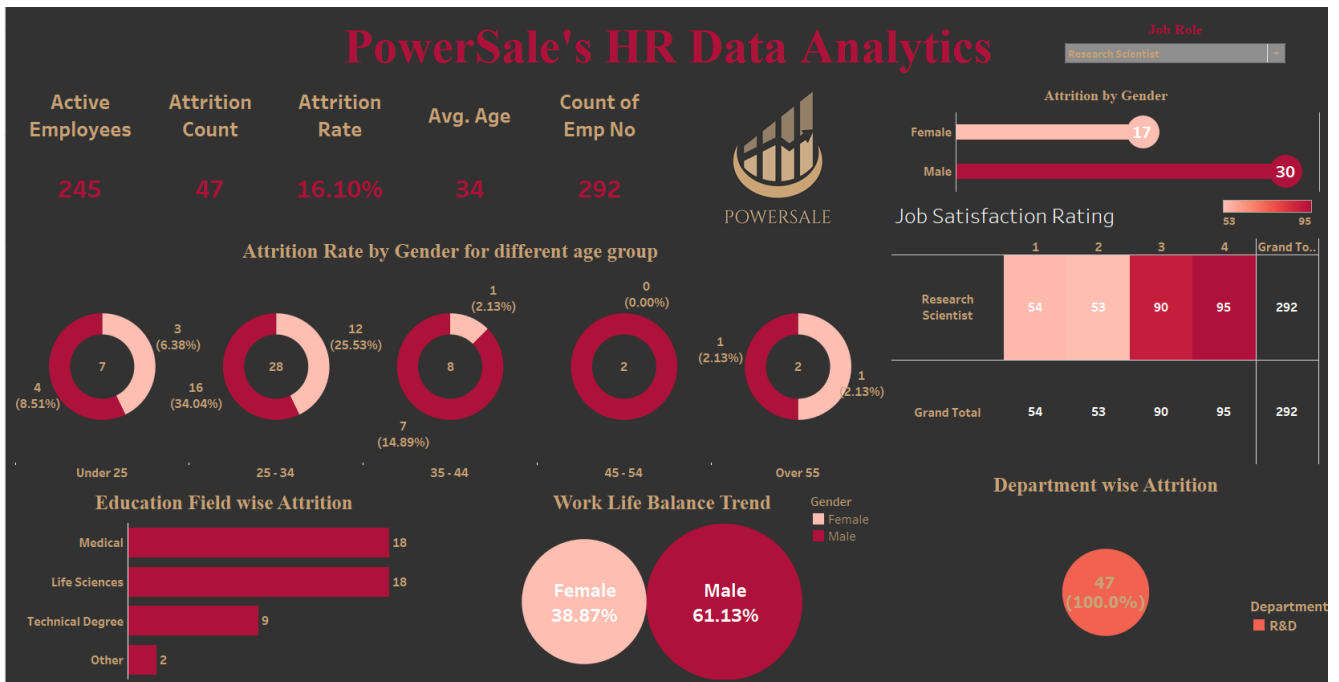
- A strong negative correlation was observed between low work-life balance ratings and higher attrition rates, particularly in high-pressure departments like Sales and IT.

4. Educational Background:

- Employees with technical qualifications (e.g., engineers and developers) showed higher attrition rates compared to those in managerial or non-technical roles, which may indicate dissatisfaction with career progression or role alignment.

Appendices





Conclusion

The PowerSales Tableau Dashboard offers a comprehensive, interactive platform for analyzing employee attrition, job satisfaction, and work-life balance. By providing actionable insights into these key metrics, the dashboard enables HR teams to take proactive steps to improve employee retention, create a more engaged workforce, and address any underlying issues that may lead to attrition. The visualizations and metrics presented serve as a powerful tool in shaping data-driven retention strategies that benefit both the organization and its employees.

References

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