



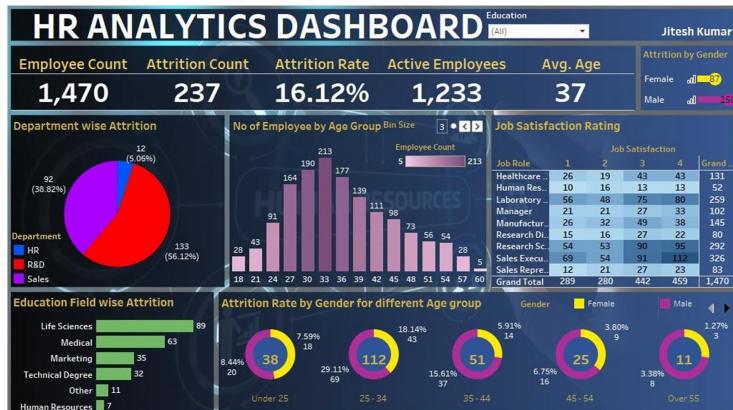
# Chandigarh University

## University Institute of Computing

### Business Analytics: 23CAH-701

### Project Report

### Project Title: HR Analytics Dashboard Using Tableau



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# CONTENTS

## HR Analytics Dashboard Using Tableau

<b>AIM .....</b>	<b>3</b>
<b>OBJECTIVES.....</b>	<b>3</b>
<b>1. INTRODUCTION .....</b>	<b>3</b>
1.1 Overview of Project .....	3
<b>2. PROJECT REQUIREMENTS .....</b>	<b>3</b>
2.1 Software and Tools .....	3
2.2 Hardware Requirements.....	3
2.3 Project Goals .....	4
<b>3. STEPS OF IMPLEMENTATION.....</b>	<b>4</b>
3.1 Data Preparation .....	4
3.2 Tableau Workbook Setup.....	4
3.3 Sheet Creation .....	4
3.4 Dashboard Design.....	4
3.5 Final Review & Testing .....	4
<b>4. DATA .....</b>	<b>5</b>
4.1 Employee Details Datasheet.....	5
4.2 Location Datasheet .....	5
<b>5. DATA OVERVIEW .....</b>	<b>6</b>
5.1 Key Fields in the Dataset .....	6
<b>6. TABLEAU SHEETS OVERVIEW.....</b>	<b>7</b>
6.1 KPI Overview.....	7
6.2 Department-Wise Attrition.....	7
6.3 Number of Employees by Age Group .....	8
6.4 Job Satisfaction Rating .....	8
6.5 Education Field-Wise Attrition .....	9
6.6 Attrition Rate by Gender and Age Group .....	9
6.7 Attrition by Gender .....	10
<b>7. DASHBOARD OVERVIEW.....</b>	<b>10</b>
<b>8. ANALYSIS AND KEY INSIGHTS .....</b>	<b>11</b>
8.1 Demographic Insights .....	11
8.2 Turnover Trends .....	11
8.3 Satisfaction Analysis.....	11
8.4 Productivity Insights .....	11
<b>9. CONCLUSION .....</b>	<b>12</b>
<b>10. LEARNING OUTCOMES.....</b>	<b>12</b>
<b>11. REFERENCES .....</b>	<b>12</b>

## Aim:

This project aims to analyze HR-related data to identify trends, employee satisfaction levels, workforce demographics, and overall productivity metrics. The goal is to provide insights for improving HR policies, increasing employee retention, and enhancing workforce planning and resource allocation.

## Objectives:

1. **Employee Demographics Analysis:** Classify employees by age, gender, department, and location to understand workforce composition.
2. **Turnover and Retention Rates:** Evaluate employee retention patterns, focusing on turnover rates across departments, roles, and locations.
3. **Employee Satisfaction:** Analyze feedback and satisfaction levels to assess HR policy effectiveness and identify improvement areas.
4. **Productivity Trends:** Examine key productivity indicators to identify performance trends and gaps.
5. **Geographic Analysis:** Use location data to identify areas with higher turnover or satisfaction rates and adapt regional strategies accordingly.
6. **Compensation Insights:** Investigate the impact of compensation on retention and performance across different departments and roles.
7. **Workforce Planning:** Provide actionable insights for talent acquisition, training, and workforce management to support strategic HR planning.

## 1. Introduction

This project uses Tableau to visualize HR data, focusing on employee demographics, satisfaction, turnover, and productivity trends. Using two datasets, **Employee Details** and **Department Data**, this dashboard offers a comprehensive view of workforce patterns and highlights areas for HR optimization. It also includes geographic data analysis to understand HR metrics across different locations.

## 2. Project Requirements

### 2.1 Software and Tools

- **Tableau Desktop:** For visualizations and dashboard creation.
- **Excel:** Source for employee details and department data.
- **Data Source Files:**
  - **Employee Details**
  - **Department Data** (including location, role, and department information)

## 2.2 Hardware Requirements

- Minimum: 4GB RAM, 500MB storage for optimal Tableau performance.

## 2.3 Project Goals

- Understand workforce demographics and turnover rates.
- Monitor employee satisfaction and productivity metrics.
- Support strategic HR planning and resource allocation.

## 3. Steps of Implementation

### 1). Data Preparation

- Collected employee data from HR sources.
- Cleaned and formatted data for consistency and removed any missing values.

### 2). Tableau Workbook Setup

- Imported datasets into Tableau and established data relationships.

### 3). Sheet Creation

- **Demographics Sheet:** Displays employee distribution by age, gender, department, and location.
- **Turnover Rate Sheet:** Shows turnover rates by department, role, and location.
- **Satisfaction Metrics:** Analyzes employee satisfaction scores and feedback.
- **Productivity Trends:** Tracks productivity indicators across departments and time.
- **Compensation Analysis:** Compares compensation data with turnover and performance.
- **Location Analysis:** Provides a geographical breakdown of HR metrics.
- **Department Overview:** Summary of employee distribution and performance by department.

### 4). Dashboard Design

- Integrated individual sheets into an interactive dashboard.
- Applied filters, actions, and navigation buttons for easy exploration.
- Ensured a user-friendly layout with clear labels, tooltips, and legends.

## 5). Final Review & Testing

- Validated dashboard accuracy, design consistency, and interactivity.

## 4. Data:

This project contains two Excel datasheets focused on employee demographics, productivity, and satisfaction.

1. **Employee Details Datasheet:** This dataset includes over fifty thousand records and twenty-one fields, capturing critical HR metrics.

### Column Names:

- **Employee ID:** Unique identifier for each employee.
- **Name:** Employee's name (anonymized for privacy).
- **Gender:** Gender of the employee.
- **Age:** Employee's age.
- **Department:** The department the employee works in.
- **Role:** Job title or role of the employee.
- **Location Code:** Code representing the employee's work location (links to Location datasheet).
- **Date of Hire:** Date when the employee was hired.
- **Employment Status:** Current status, such as "Active" or "Left."
- **Last Evaluation Date:** The most recent performance evaluation date.
- **Performance Score:** Score from the latest performance evaluation.
- **Annual Salary:** Employee's annual salary.
- **Benefits:** List of benefits availed by the employee.
- **Satisfaction Score:** Employee satisfaction rating.
- **Promotions:** Number of promotions received.
- **Tenure:** Length of time with the company.
- **Manager ID:** ID of the manager supervising the employee.
- **Training Hours:** Hours spent in training programs.
- **Absences:** Total days absent in the last year.
- **Exit Reason** (if applicable): Reason for leaving (for former employees).

2. **Location Datasheet:** This file contains geographic and office location data, with fifty-one rows.

### Column Names:

- **Serial Number:** Unique number for each location.
- **Location Code:** Code for each location (links with the Employee Details datasheet).
- **Location Name:** Name of the location (e.g., state, city, or office region).

# Data Overview

The datasets used in this project are:

The screenshot shows the Power BI desktop application. On the left, the 'Connections' pane is open, displaying a connection to 'HR Data (Microsoft Excel)'. Below it, the 'Sheets' pane shows a single sheet named 'HR data'. The main workspace displays the 'HR data' table, which has 43 fields and 1470 rows. The table preview shows columns like 'Name', 'Attrition', 'Business Travel', 'CF age band', 'CF attrition label', and 'Department'. The bottom of the screen shows various navigation and search bars.

- Employee Details Datasheet:** This primary dataset includes details such as employee demographics, job details, satisfaction scores, and performance metrics. It enables insights into turnover, employee engagement, and performance across departments.
- Location Datasheet:** Provides geographical information for mapping employee data by location.

## Key Fields in the Dataset Include:

- Employee ID:** Unique employee identifier.
- Date of Hire:** Provides insight into employee tenure.
- Department and Role:** Helps analyze trends by job function and department.
- Satisfaction and Performance Scores:** Key indicators for employee engagement and productivity.
- Location Code:** Used for mapping geographic patterns in employee metrics.

## 5. Tableau Sheets Overview

Each sheet in the HR Analytics Tableau dashboard provides specific insights into workforce demographics, turnover, satisfaction, and performance, supporting comprehensive HR analytics.

### 5.1 KPI Overview

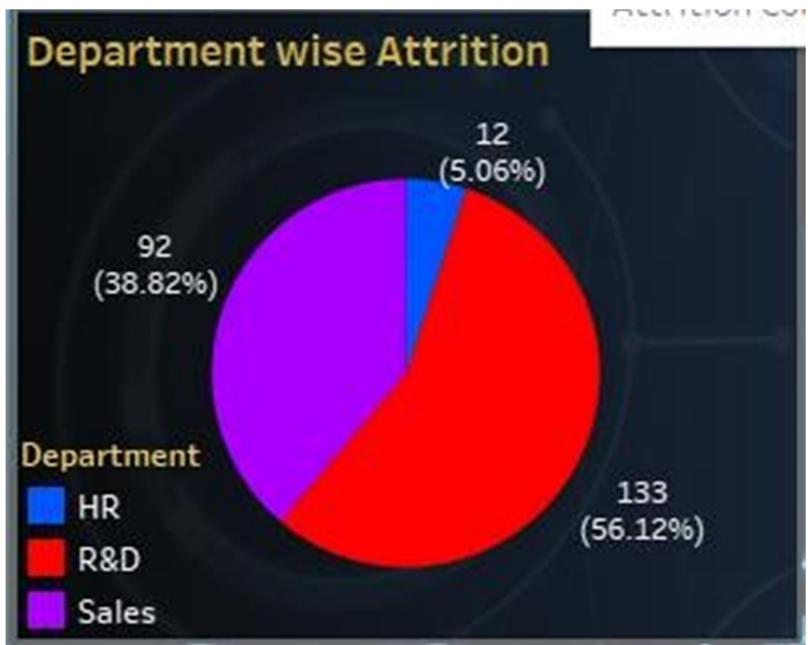
- Displays essential workforce demographics, including total employee count, composition by department, role, and location.
- Tracks turnover rate, average tenure, and overall job satisfaction to monitor organizational health.

KPI	Employee Count	Attrition Count	Attrition Rate	Active Employees	Avg. Age
	1,470	237	16.12%	1,233	37

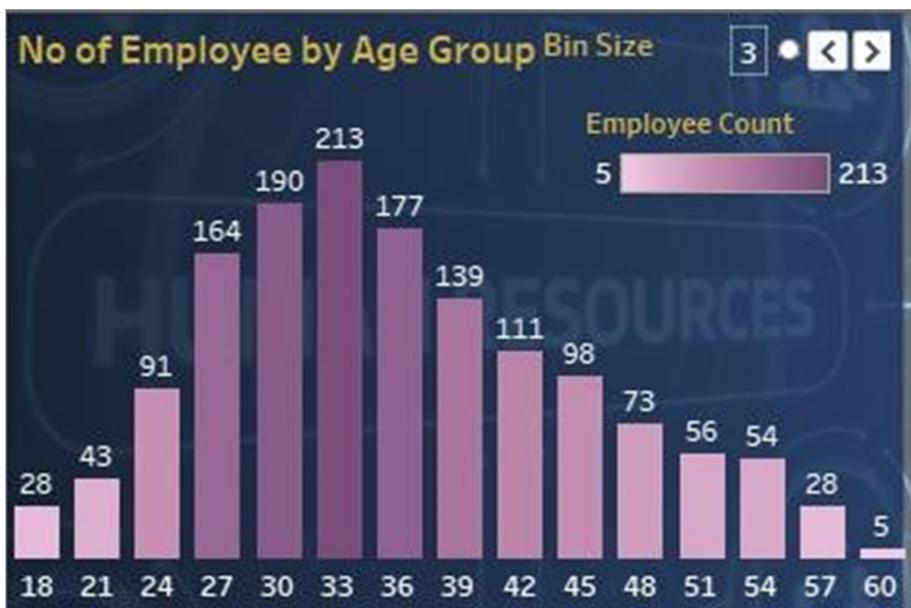
Employee Count	Attrition Count	Attrition Rate	Active Employees	Avg. Age
1,470	237	16.12%	1,233	37

### 5.2 Department-Wise Attrition



- Analyzes turnover trends across departments, identifying roles with high attrition rates and highlighting areas where retention efforts may be needed.

### 5.3 Number of Employees by Age Group



- Visualizes the distribution of employees across different age groups, helping to understand age diversity within the organization and tailor policies to specific age demographics.

### 5.4 Job Satisfaction Rating

Job Role	Job Satisfaction				Grand ..
	1	2	3	4	
Healthcare ..	26	19	43	43	131
Human Res..	10	16	13	13	52
Laboratory ..	56	48	75	80	259
Manager	21	21	27	33	102
Manufactur..	26	32	49	38	145
Research Di..	15	16	27	22	80
Research Sc..	54	53	90	95	292
Sales Execu..	69	54	91	112	326
Sales Repre..	12	21	27	23	83
Grand Total	289	280	442	459	1,470

- Tracks employee satisfaction ratings over time and across departments, revealing trends in satisfaction and identifying areas for potential improvement in engagement.

## 5.5 Education Field-Wise Attrition



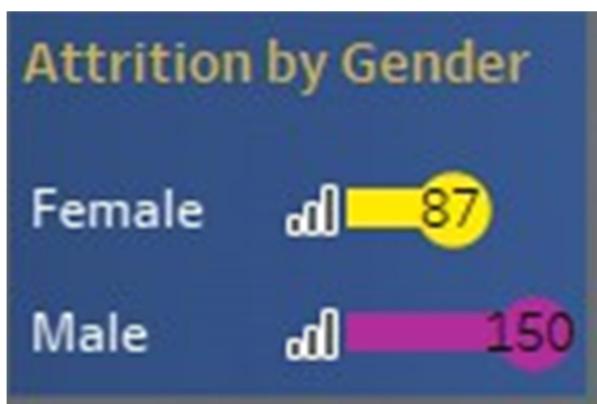
- Compares attrition rates across various educational backgrounds, assessing if specific education fields correlate with higher turnover or retention rates

## 5.6 Attrition Rate by Gender and Age Group



- Provides insights into gender-based turnover across different age groups, allowing for a deeper understanding of demographic factors influencing attrition.

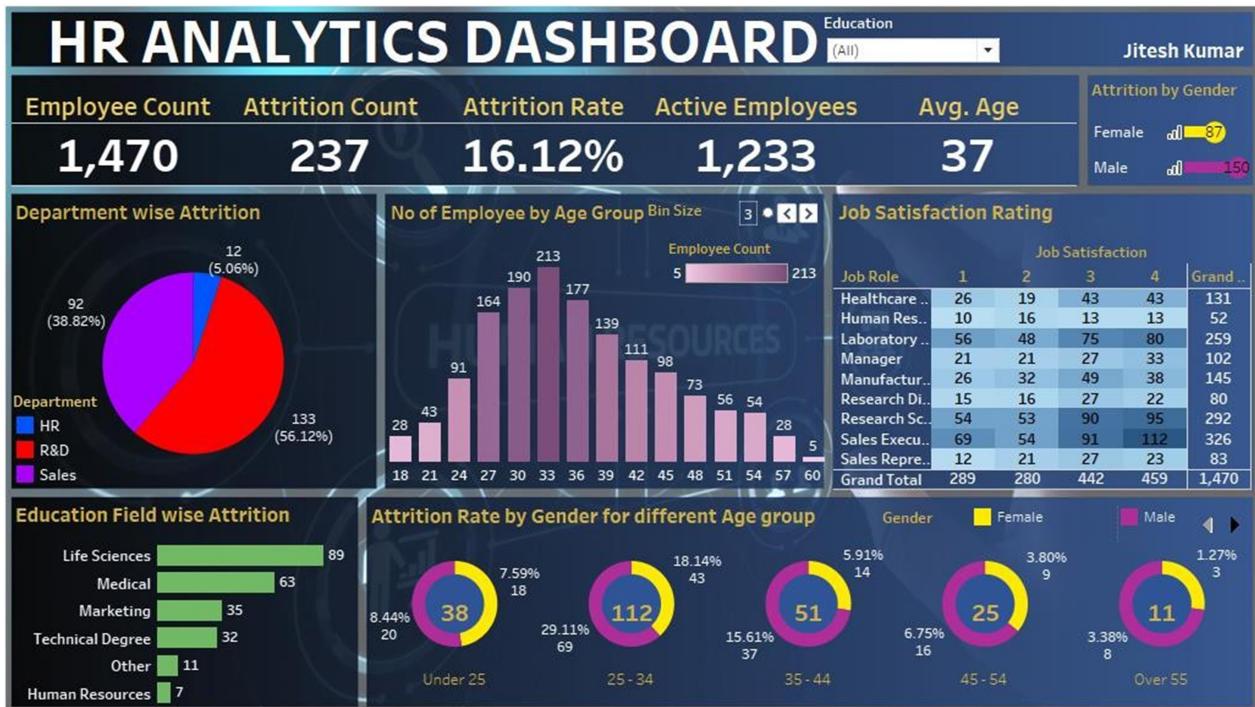
## 5.7 Attrition by Gender



- Summarizes employee turnover by gender, supporting initiatives to foster workplace diversity and improve retention among specific demographic groups.

## 6. Dashboard Overview

The dashboard integrates all individual sheets, creating an interactive, user-friendly interface for exploring HR metrics in depth. Users can:



- Filter by department, role, location, and demographic details.
- Track key metrics such as turnover rates, satisfaction levels, and productivity across time.
- View demographic and geographic distributions to understand workforce composition and address region-specific HR concerns.

## 7. Analysis and Key Insights

### 7.1 Demographic Insights

- Workforce predominantly within certain age ranges and department concentrations.

### 7.2 Turnover Trends

- Turnover rates are higher in specific departments, roles, and locations, indicating areas for improvement.

### 7.3 Satisfaction Analysis

- Satisfaction scores are correlated with compensation and department, suggesting actionable insights for HR.

### 7.4 Productivity Insights

- Productivity trends highlight peak and low-performance periods, suggesting potential improvement areas.

## 8. Conclusion

The HR Analytics Dashboard provides actionable insights into workforce demographics, turnover, satisfaction, and productivity, allowing the HR team to improve retention, optimize resource allocation, and support strategic workforce planning.

## 9. Learning Outcomes

- Developed Tableau skills for creating dynamic HR dashboards.
- Enhanced data analysis skills for HR metrics such as turnover, satisfaction, and demographics.
- Improved understanding of data storytelling in HR reporting.

## 10. References

1. **Tableau Documentation** - Official resources for dashboard creation and data visualization.
2. **Excel Data Analysis** - Techniques for preparing HR data.
3. **Geographical Data** - For location-based analysis.

## 11. GitHub Repository:

The screenshot shows the GitHub repository page for 'Tableau-Dashboard' owned by 'JiteshKumar2000'. The repository is public. The main interface includes a navigation bar with links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. Below the navigation bar, there's a search bar and several quick-action buttons (Pin, Unwatch, Fork, Star). The repository name 'Tableau-Dashboard' is displayed with a 'Public' badge. A commit history table shows three commits: 'Create README.md' by JiteshKumar2000 (1 minute ago), 'README.md' (1 minute ago), and 'Tableau HR ANALYTICS Dashboard Project.twbx' (3 minutes ago). On the right side, there's an 'About' section with a brief description: 'HR Analytics Dashboard in Tableau', a 'Readme' link, activity stats (0 stars, 1 watching, 0 forks), and a 'Releases' section indicating 'No releases published' with a 'Create a new release' link.

<https://github.com/JiteshKumar2000/Tableau-Dashboard.git>