

# HR Analytics Dashboard

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## Introduction and Dataset Overview

Our HR attrition dataset provides a comprehensive record of the status of every employee, whether they have left the organization or remain actively employed, along with essential demographic, role, and compensation details. From this foundation, we have developed an interactive dashboard that delivers a clear, real-time picture of workforce stability: it quantifies overall head-count and turnover rates, isolates the employee segments (by gender, age cohort, education, or department) most susceptible to departure, and surfaces the principal drivers behind those exits, such as low job satisfaction or pay disparities. Armed with these insights, HR leaders can craft precisely targeted interventions, from mentorship and engagement programs for high-risk groups to strategic recruitment initiatives that fill emerging talent gaps, while also modeling the budgetary impact of turnover on payroll costs. This transformation of static data into actionable intelligence empowers data-driven decision making that strengthens employee retention, optimizes resource allocation, and underpins long-term organizational resilience.

## Introduction to Tableau and Power BI

Tableau and Power BI are two of the industry's leading business intelligence platforms, each designed to transform raw data into interactive and visually compelling insights. Tableau, renowned for its intuitive drag-and-drop interface and advanced visualization capabilities, allows analysts to explore complex datasets with minimal scripting. Its strength lies in rapid prototyping, elaborate custom formatting, and seamless geographic mapping. Power BI, in contrast, is tightly integrated into the Microsoft ecosystem, leveraging Excel-style familiarity, Azure connectivity, and robust DAX (Data Analysis Expressions) for data modeling. While Tableau excels at bespoke chart creation and ad hoc exploration, Power BI provides a unified end-to-end environment for data preparation, modeling, and reporting within familiar Microsoft tools. Together, they embody two complementary approaches: Tableau prioritizes speed and visual flexibility, whereas Power BI emphasizes seamless integration, governed data models, and scalable deployment.

## KPI Overview

**Tableau:** Tableau makes creating compact KPI cards remarkably straightforward. You simply drag your calculated measures (e.g. Total Employees, Attrition Count, Attrition Rate %, Active Employees, Avg Age) onto the Text shelf within a single worksheet, then swap between them via the Measure Names/Values pill. Formatting fonts, colors, and borders happens right on the canvas or in the Format pane, so you see live previews of your styling tweaks. Tableau's flexible text boxes let you intermix dynamic numbers and static labels seamlessly, and parameters can be bound to your KPIs for on-the-fly scenario toggles.

**Power BI:** Power BI uses the Card and Multi-Row Card visuals to display KPIs. Defining each metric requires its own DAX measure, but once written, these cards auto-refresh with slicer/filter changes. Styling lives in the Visualizations → Format pane: you toggle “Data label,” “Category label,” and “Border” settings, and you can apply conditional formatting (e.g. color the Attrition Rate red above a threshold). Although you don’t see formatting changes until you hit “Apply,” Power BI’s approach centralizes styling and ensures uniformity across multiple pages.

### **Employee Count by Age Group**

**Tableau:** Tableau excels at rapid, visual exploration. Its built-in age-bin parameter lets you adjust bucket widths instantly on the canvas, and applying a continuous color gradient is a two-click operation. This immediacy encourages analysts to experiment freely—tweaking bin sizes or color stops in seconds—without any behind-the-scenes calculations.

**Power BI:** Power BI emphasizes consistency and reuse. Defining age bands via a single DAX column takes a bit more upfront effort, and color gradients live in the Format pane rather than alongside the chart, but once configured those bins and palettes apply automatically across all visuals and pages. This model-driven approach reduces ad-hoc variability and supports enterprise governance..

### **Attrition Count by Department**

**Tableau :** In Tableau, creating a departmental pie (or donut) chart is straightforward: you drag Department onto Color and your Attrition Count measure onto Angle and Label. From there, converting to a donut simply requires editing the Marks card’s Pie options to set an inner radius. Labels, including both count and percentage, can be toggled on or off and positioned with a few clicks. Tableau’s instant canvas feedback makes it easy to adjust slice order—simply drag a slice in the view to reorder—or to swap from pie to bar without rebuilding the viz.

**Power BI :** Power BI requires selecting the Pie chart visual first, then placing Department in the Legend bucket and Attrition Count in Values. To display percentages alongside raw counts, you enable Detail labels in the Formatting pane and switch on both Category and Percent. Converting to a donut entails scrolling to the Slices section and adjusting the Inner radius slider. While these settings live in a separate pane rather than inline on the canvas, once learned they deliver a consistent way to style across multiple pages.

### **Job Satisfaction Rating Matrix**

**Tableau :** In Tableau, building a color-coded matrix of job satisfaction by role required dragging Job Role onto Rows and Job Satisfaction onto Columns, then placing Employee Count on Color and Label. Customizing the color ramp is done via the Color shelf, where you can pick a multi-stop gradient, adjust opacity, and instantly preview. Totals and subtotals flow automatically from the Analytics pane, and resizing cells is as simple as dragging an edge on the canvas.

**Power BI :**Power BI uses the native Matrix visual: you drop Job Role into Rows, Job Satisfaction into Columns, and your Employee Count measure into Values. To apply a heatmap effect, you enable Conditional formatting under the Format pane’s Values section, selecting a two-color scale. Grand totals toggle on/off with a single switch. While the side-panel format is less “hands-on” than Tableau’s in-view adjustments, once learned it provides consistent formatting options across the report.

## Attrition Count by Education Field

**Tableau :** In Tableau, plotting attrition by education field is as simple as dragging Education Field onto Rows and Attrition Count onto Columns. Labels and colors are applied directly via the Marks card, letting you fine-tune bar thickness, text size, and hue interactively. Sorting the bars (e.g., descending by count) is instantaneous with one click on the axis. Tableau's on-canvas controls make reordering and formatting feel highly tactile and intuitive.

**Power BI :**Power BI uses the Clustered Bar Chart visual: drop Education Field into the Y-axis and your Attrition Count measure into the X-axis. Sorting is handled via the ellipsis menu on the visual, and data labels toggle on/off under Format → Data Labels. While the pane-based formatting requires navigating through nested sections, it provides consistent styling options (e.g., bar corner radius, background)

## Attrition Rate by Gender Across Age Bands

**Tableau :** Tableau's small-multiples approach leverages the Pages shelf or the new Small Multiples layout: simply drop the computed AgeBand field onto Columns and Gender onto Color. Then place a dummy constant (e.g. MIN(1)) on Angle and Attrition Count on Label to build identical donut charts per band. Tableau's instant live preview helps you iterate on mark types (pie→donut) and labels without leaving the canvas.

**Power BI :**Power BI doesn't yet offer native small multiples in the standard donut visual (you'll find it only in certain preview features or the Small multiples bucket in supported charts like bar or line). As a workaround, you can:

1. Use the Donut Chart for one age band, then copy-paste into a grid layout on the report canvas.
2. Manually filter each donut to a specific AgeBand value via visual-level filters.
3. Align them in a uniform grid and synchronize formatting (border, title).

## Dashboard Design & Assembly

### Tableau

In Tableau, assembling the dashboard felt like "painting on a blank canvas." The drag-and-drop interface makes it effortless to float, tile, and precisely position each worksheet, allowing pixel-perfect alignment of KPIs, charts, and filters. Dashboard objects (text, images, containers) snap together intuitively, and resizing one element automatically reflows its neighbors. Applying a custom background texture or gradient is straightforward via the Layout pane, and global style settings (font, shading, borders) cascade consistently across all visualizations. However, advanced interactivity—like syncing parameter controls across multiple worksheets—required calculated fields and actions, which, while powerful, added a layer of complexity. Overall, Tableau's dashboard canvas is highly flexible and visually polished, but mastering its full range of layout and interactivity options takes practice.

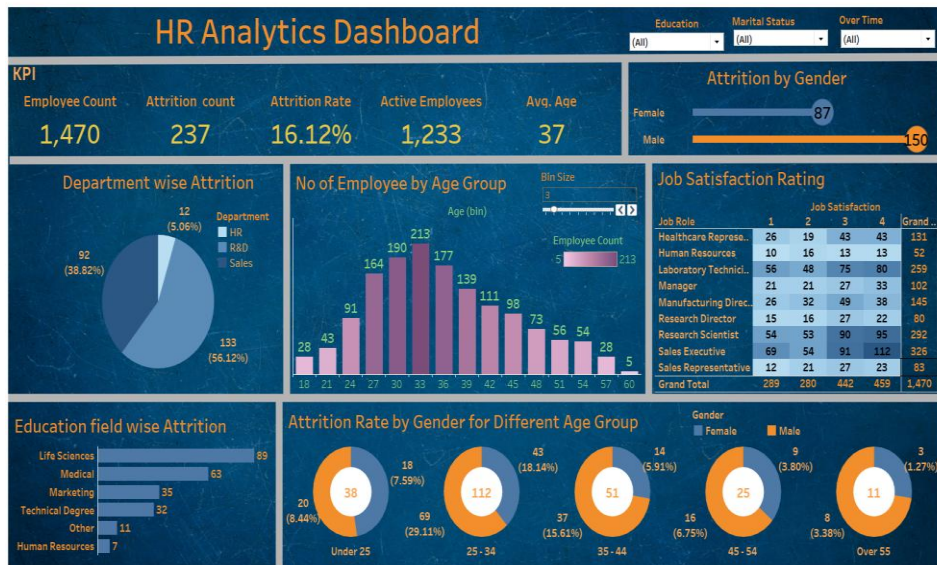
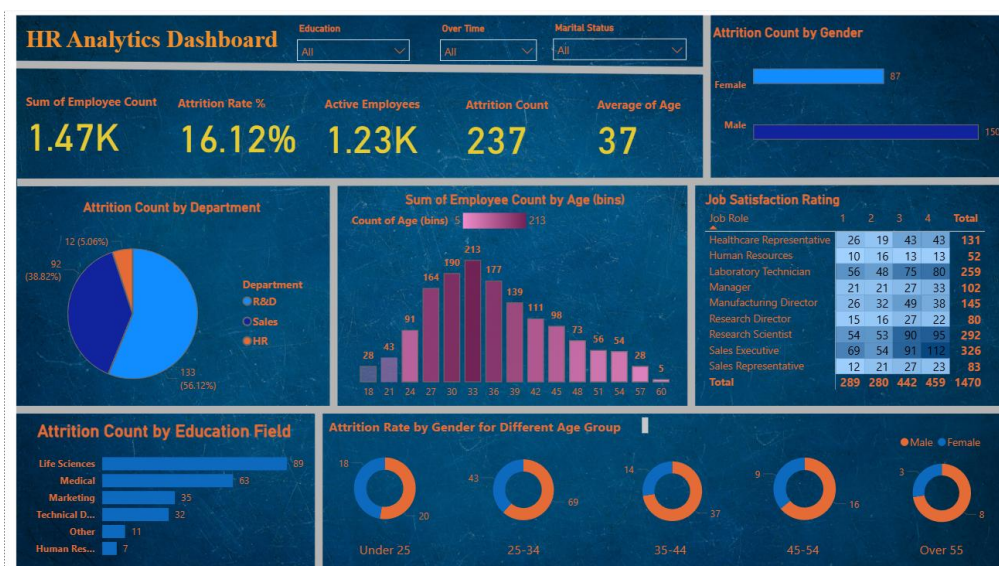


Tableau Dashboard

## Power BI

In Power BI, dashboard construction resembled arranging modular cards rather than freeform objects. The “Build” and “Format” panes guide you through adding visuals, but precise positioning relies on grid snapping and manual size adjustments. While Power BI’s theme gallery makes it trivial to apply a corporate color palette or font scheme globally, custom backgrounds must be imported as images rather than styled in-tool. Adding slicers (filters) and KPI cards is quick, but coordinating cross-filter behavior across multiple visuals sometimes required careful use of Edit Interactions—Power BI’s version of Tableau’s actions—which felt less discoverable. One standout advantage is the ability to pin report visuals directly to the service dashboard and have them automatically update on refresh—something Tableau only achieves with a server publishing workflow. In sum, Power BI offers faster theming and cloud-centric dashboard sharing, but at the cost of Tableau-level layout precision and on-canvas design freedom.



POWER BI DASHBOARD