Tableau Project Report

Employee Performance Analysis Dashboard

Contents

Title

Employee Performance Analysis Dashboard

Objective

The **Employee Performance Analysis Dashboard** was created to evaluate workforce efficiency across various factors such as department, age, education level, training, salary, work-from-home frequency, team size, and promotions.
This dashboard helps HR and management make data-driven decisions to enhance employee productivity, optimize team structures, and improve training and development programs.

Executive Summary

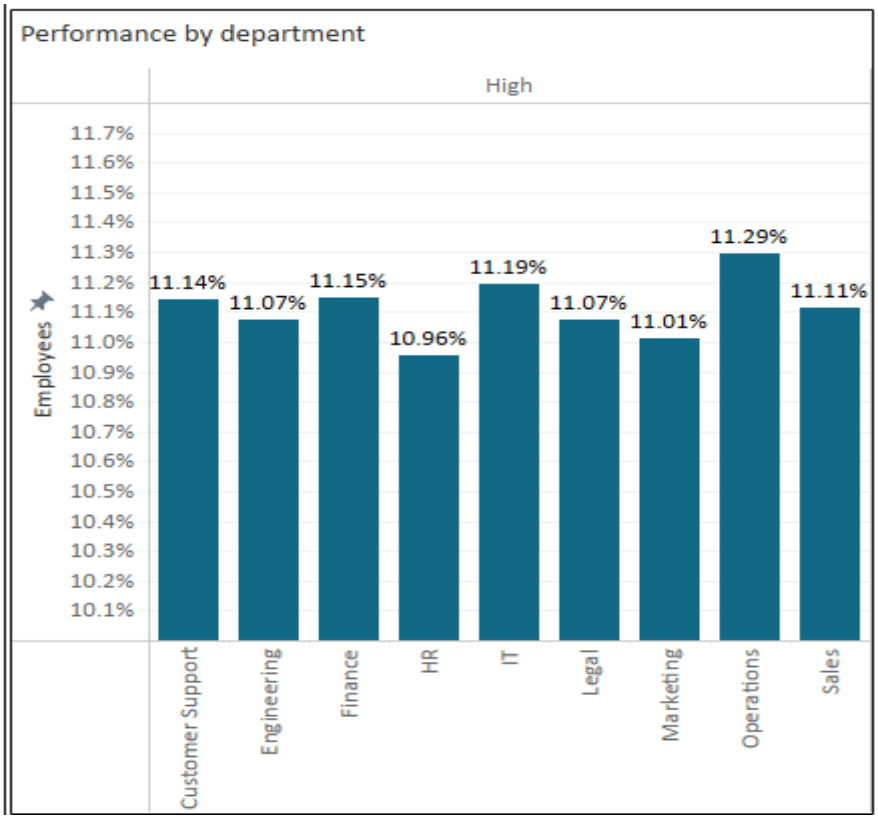
Employee **performance** is **fairly** consistent across **departments**, with **Operations (11.29%), IT (11.19%), and Finance (11.15%)** slightly ahead. The **41–50** age group performs **best (26.05%)**, while **Bachelor's** holders **(50.04%)** form the majority, though **higher degrees** show slightly **better** results.

More training days **(4 days: 27,129 employees)** lead to **better** performance, while those with **0 days (1,015)** perform **lowest**. **Higher** salaries **(25,641 employees)** show **better** outcomes **than lower bands**. Performance is slightly better with **25%–75% remote work (20.32%–20.16%)** and small **teams (1–5: 26.63%). Promotions** show minimal impact, with performance around **33%** across all levels.

Observations:

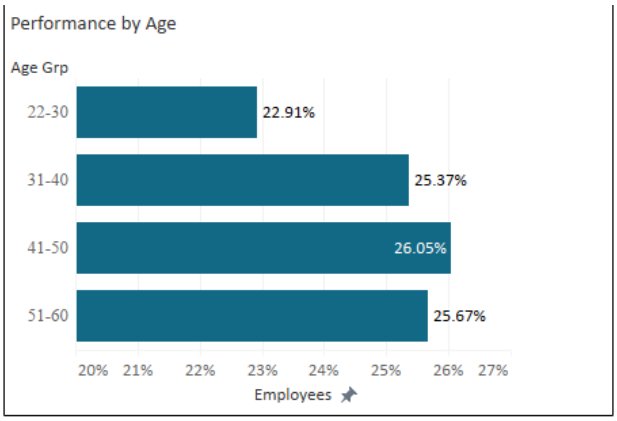
- **Department-Wise Performance**

  - **Operations** show a slightly higher share of high-performing employees at **11.29%**, followed by **Finance (11.15%)**, **IT (11.19%)**, and **Engineering (11.07%)**.
  - Departments like **Marketing (11.01%)**, **Sales (11.11%)**, and **Legal (11.07%)** are relatively close in performance levels, indicating minimal variation.



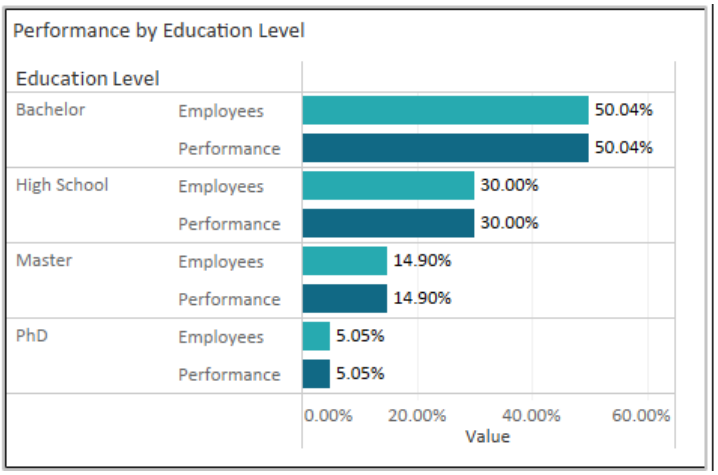
- **Performance by Age:**

  - Performance is **age-independent**, with less than a **4% gap** between the **lowest (22–30: 22.91%)** and **highest (41–50: 26.05%)** groups; others like 31–40 (25.37%) and 51–60 (25.67%) are similar.

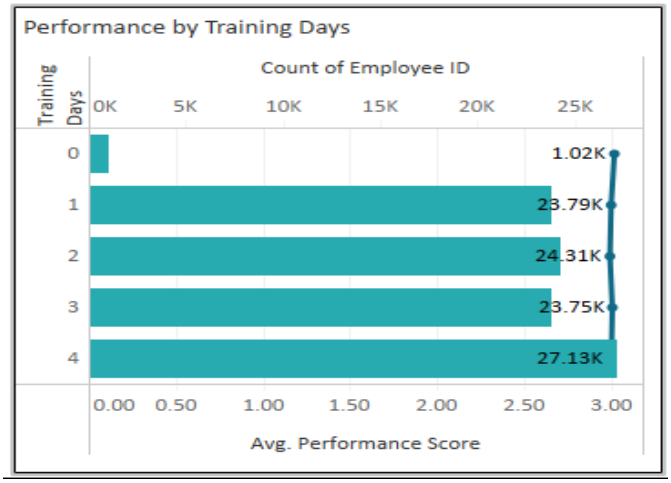


- **Performance by Education Level:**

- **Bachelor's** degree holders form **50.04%** of the workforce, followed by **High School (30%), Master's (14.90%),** and **PhD (5.05%)**.
- Higher education levels show slightly better performance, suggesting Bachelor's holders may benefit from skill enhancement.

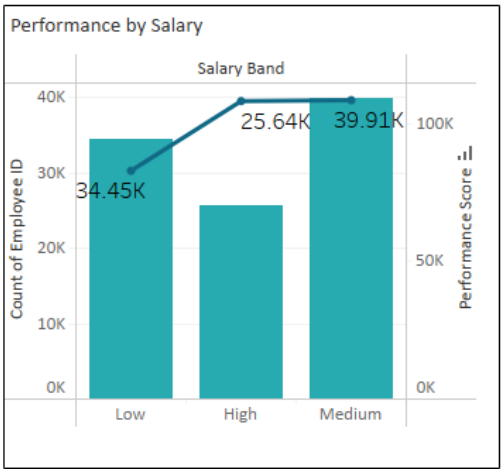


- **Impact of Training Days:**
- Employees who received **more training days tend to have higher average performance scores.**
- Those with **4 training days** have the **highest participation (27,129 employees)** and relatively **better performance**.
- In contrast, employees with **0 training days (1,015 employees)** show the **lowest average performance**.



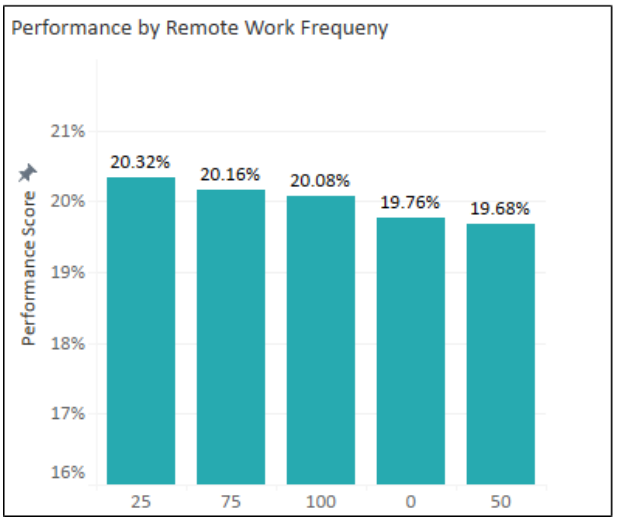
- **Performance by Salary:**

  - **Higher salaries** correlate with **better performance**, even with fewer employees **(25,641)**, while **lower salary** bands **(34,452)** and **medium bands (39,907)** show **lower performance** despite a larger workforce.



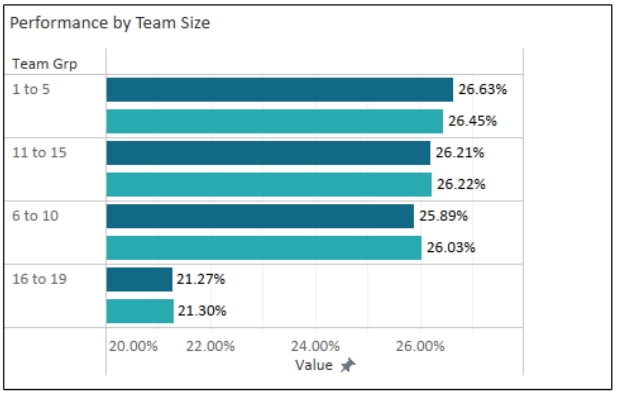
- **Performance by Work-from-Home (WFH) Frequency:**

  - Employees with **25–75% remote work** show slightly **better performance (20.32%–20.16%)** than those with **0%, 50%, or 100% remote (19.76%–20.08%)**.



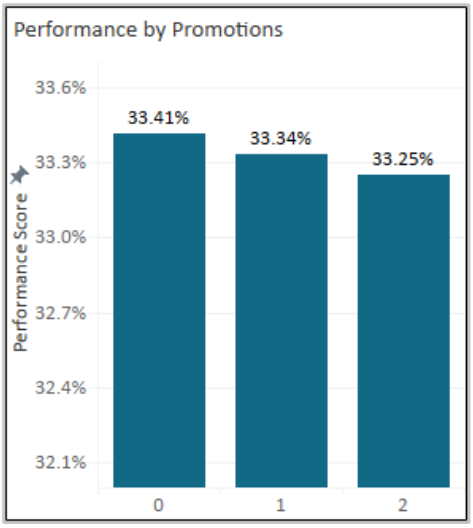
- **Performance by Team Size:**

  - **Smaller** teams **(1–5 members)** show slightly **better performance (26.63%)** compared to **medium** teams **(6–15 members: ~25.89%–26.21%)**, while **larger** teams **(16–19 members)** have noticeably **lower performance (21.27%).**

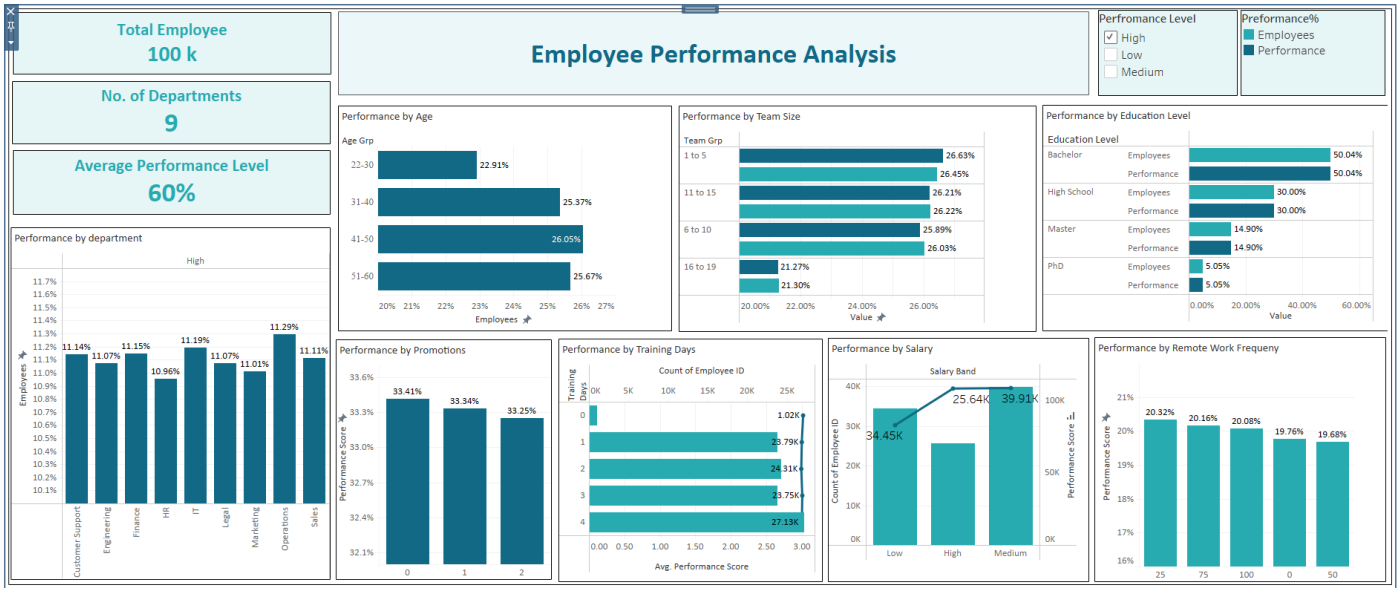


- **Performance by Promotions:**

  - **Performance** remains **fairly consistent** across promotion levels, with **0 promotions at 33.41%, 1 promotion at 33.34%,** and **2 promotions at 33.25%.** The variation is very small **(~0.16%),** suggesting that promotions may not strongly influence performance.

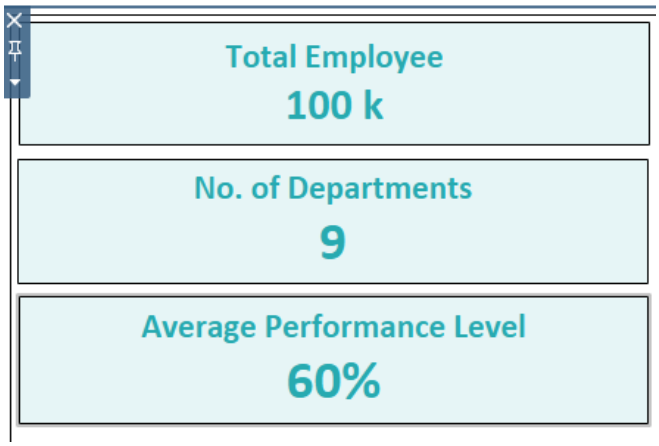


Dashboard Overview



Types of Visualizations Used

- **KPIs & Summary Metrics:**
  - **Total Employees:** 100K
  - **Number of Departments:** 9
  - **Average Performance Level:** 60%



Bar Charts (Horizontal):

- Performance by Age
- Performance by Team Size
- Performance by Education Level

Bar Charts (Vertical):

- Performance by Department
- Performance by Promotions
- Performance by Remote Work Frequency

Dual-Axis Chart (Combo Chart):

- **Performance by Salary**
  - **Bars**: Employee count
  - **Line**: Performance score

- **Performance by Training Days**
  - **Bars:** percentage of employees trained (horizontal bars).
  - **Line:** performance score related to training days.

Interactivity

- Performance Level Filter
- Interactive Charts as Filters:
  - Performance by Department
  - Performance by Age
  - Performance by Team Size
  - Performance by Education Level
  - Performance by Promotions
  - Performance by Training Days
  - Performance by Salary
  - Performance by Remote Work Frequency
- Colour Legend (Non-Interactive):

  A consistent two-colour scheme is used across all charts:

  🟦 Employees

  🟩 Performance

Insights

- **Department-wise performance** is fairly close, with slightly higher scores in **Operations (11.29%), IT (11.19%),** and **Finance (11.15%)**.
- **Performance by age** shows minor variation, ranging from **22.91% (22–30) to 26.05% (41–50)**.
- **Education level** has a slight impact; **higher degrees** perform a bit better, with Bachelor's holders forming **50.04%** of the workforce.
- **Training days** show a positive link to performance — **4** training days **(27,129 employees)** associate with better results, while **0 days (1,015 employees)** link to lower scores.
- **Salary bands** suggest better performance in higher salary groups **(25,641 employees)** despite smaller size.
- **Remote work** frequency of **25–75%** shows slightly better performance **(20.16%–20.32%)** than other ranges.
- **Smaller teams** (**1–5 members**) show slightly higher performance **(26.63%)** compared to larger ones (16–19: 21.27%).
- **Promotion levels** show **minimal performance variation**, remaining close to 33% across all groups.

Recommendations

- **Training Investment**: Increase training opportunities—especially targeting employees with **0 training days**, as **more training (e.g., 4 days)** links to better performance.
- **Upskilling Programs**: Offer skill enhancement programs for **Bachelor's degree holders (50.04%)**, as higher education shows slightly better performance.
- **Salary Band Review**: Re-evaluate **lower and medium salary bands**; consider performance-based incentives to boost motivation where performance is currently lower.
- **Promote Moderate Remote Work**: Encourage a **25–75% hybrid work model**, which shows slightly better performance compared to fully remote or fully in-office settings.
- **Optimize Team Sizes**: Support **smaller teams (1–5 members)** or restructure larger teams into smaller sub-groups to improve performance.
- **Department Support**: While variation is minimal, maintain focus on consistently performing departments like **Operations, IT, and Finance** while exploring small-scale strategies to uplift others like **Marketing and Legal**.
- **Promotion Strategy**: Since promotions don't significantly affect performance, focus more on **continuous development** and **recognition programs** rather than just promotions.

Future Enhancements

- **Time-Series Analysis**
  Incorporate monthly or quarterly trends in performance metrics to observe progress or decline over time.
- **AI-Powered Insights**
  Integrate machine learning models to forecast employee performance based on current patterns.
- **Employee-Level Drill-Down**
  Enable drill-through to individual employee dashboards to understand personal performance journeys and influencing factors.

Appendix:

Data Source & Preparation

- **Source: The** dataset was sourced from Kaggle: Employee Performance Analysis Data
- **License:** Public Domain (CC0)
- **Data format:** CSV.

Data Preparation: The data was cleaned and transformed using **Microsoft Excel**. This involved:

- **Data Type Conversion:** Ensuring that numerical columns were correctly formatted as numbers, text columns as texts, etc.
- **Data Quality Checks:** Inspecting each column for any unexpected or invalid entries.
- **Consistency Checks:** Identifying inconsistencies in data entry, such as variations in spelling or capitalization, and standardizing them for uniformity.

Created Additional Columns:

- **Age Grp** (categorized employees into age groups)
- **Team Grp** (grouped employees based on team sizes)
- **Overtime Grp** (categorized employees based on overtime hours)
- **Training Days** (converted training hours into training days)
- **Salary Band** (categorized salary ranges)
- **Performance Level** (classified employees based on their performance scores)

Challenges & Solutions

Challenge: Inconsistent data formats in Excel, leading to incorrect categorization.

- **Solution:** Standardized numerical, date, and categorical data before importing into Tableau.

Challenge: Identifying key performance drivers across multiple factors.

- **Solution:** Used combined visualizations (bar charts with trend lines) to analyse correlations effectively.

Challenge: Difficulty in interpreting performance variations across different groups.

- **Solution:** Segmented data based on age, education, salary, and team size to highlight trends and insights clearly.