A TECHNICAL REPORT ON GLOBAL TECH EMPLOYEE PERFORMANCE ANALYSIS FOR THE YEAR 2023

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2. INTRODUCTION

Objective of the Project: This project aims to analyze employee performance across various divisions, age groups, ethnicities, and training programs in Global Tech. The goal is to identify key factors influencing performance, recognize top-performing categories, and provide recommendations to improve workforce efficiency and productivity.

Problem Being Addressed: Some of the problems this analysis aims to solve are:

- Identify top performing divisions and replicate their strategies in other division.
- Identify what metric impact workplace productivity.
- Access the impact of training programs on employee performance
- Provide insights into underperforming employee categories and suggest improvements.

Key Datasets and Methodologies: The dataset used contains employee performance metrics categorized into different categories and some of the methodologies I used was

- to make sure my data was clean and organized to maintain consistency
- Converting the dataset into a standard Excel Table.
- Then I used pivot tables and pivot charts to extract key insights on the performance.

3. STORY OF THE DATA

Purpose: The dataset represents employee performance ratings across various divisions, age group, races and different factors for the year 2023. The goal was to analyze what and what influenced performance of the employees across different metrics. My approached involved cleaning the dataset to ensure consistency, converting to a standard excel table to allow dynamism. Then I created a Pre-Analysis Board to split the dataset into different categories, then in started creating my Pivots Tables and Charts to analyze each metric in details, from there in created my In-Analysis Board where I wrote down each insight I got from the charts I created. Which I later compiled into a dashboard, then I created my Final Observation and Recommendation board.

Data Source: The dataset for this project was created by ChatGpt.

Data Collection Process: There was no collection process for this dataset as to was generated by an AI

Data Structure: The dataset was structured in a tabular format with columns representing key datapoints like, Division, Marital Status, Employee ID, Performance Rating, while the rows represent each employee in the organization.

Important Features and Their Significance: Some of the important features in the dataset include

- The Employee ID which tells us which employee has a particular metric.
- The Division tells us which department or division a particular employee belongs to.
- Marital Status analyzes the marital status of each employee.
- Performance Rating which is the key metric of the dataset, assesses workforce effectiveness.
- Training Type shows the different trainings all the employees attended.

DATA SPLITTING AND PREPROCESSING

Data Cleaning: Upon looking at the data, I noticed some inconsistencies, which included improperly formatted data in some columns of which I corrected. I made sure there was no duplicates of which I encountered many. Then I ensured columns were named clearly to identify datapoints.

Handling Missing Values: For this dataset there was no missing values so no imputation was required.

Data Transformations: To enhance efficient analysis and to make my dataset dynamic, I converted my dataset to a standard excel table.

Data Splitting: To make my analysis more structured and easier, I categorized my datapoints into dependent and independent variables.

- Independent Variables: Division, Employee Age Bracket, Race, Marital Status, and Training Type, Title.
- Dependent Variables: Performance Ratings, Engagement score, Training duration Age. which are influenced by the independent variables and indicate effectiveness

Industry Context: The dataset falls under the Human Resource for a Company

Stakeholders: The key stakeholders of this project are the CEO's, The HR's, Training and development team.

Value to the Industry: The significance of this analysis to the industry is to help them understand hoe different division and demographics groups perform, Identify which training had more impact, and helping the company allocate resources to where it is needed.

4. PRE-ANALYSIS

Identify Key Trends: While looking at the dataset, I noticed that the Field Operations division appeared frequently, suggesting it had the highest number of employees. And employees in the 57-66 age group consistently had high performance ratings, indicating they might be the best-performing age group. I also noticed a lot of single people with high performance score, which indicates they might be among the best rated employees.

Potential Correlations: Some of the correlations I noticed were:

Division vs. Performance Rating: Certain divisions, like Field Operations and General Consulting, had higher performance ratings than others.

Age Group vs. Performance Rating: Older employees (57-66 years) tended to have better ratings than younger employees.

Marital Status vs. Performance Rating: Single employees appeared to have the highest ratings, which could indicate a connection between personal status and work performance.

Initial Insights: Some key insights that stood out as promising for further analysis include:

Which division had the best-performing employees?

Which age group contributed the most to high performance?

What type of training had the greatest impact on performance?

How does marital status influence employee performance?

Which Race of employees were the most rated?

5. IN-ANALYSIS

Unconfirmed Insights: While creating my charts some of the insights I got from them include:

- Field Operations had the highest number of employees, suggesting it is a key division in the organization.
- Employees aged 57-66 years had the highest performance ratings.
- Communication Skills training had the highest number of participants with strong performance ratings.
- Single employees had the highest performance ratings compared to other marital statuses.
- The Asian employee group had the highest performance rating on average, which could point to cultural or work ethic factors influencing results.

Recommendations: Some of the recommendations I could give from these insights I got were:

- Since Communication Skills training correlates with higher performance, the company should invest more in similar programs.
- With employees aged 57-66 performing well, the organization should focus on knowledge transfer strategies.
- Balancing Work and Personal Life: If single employees perform better, the company should investigate ways to support work-life balance for married employees.
- Optimizing Division Resource Allocation: Since Field Operations has the most employees, further analysis should be done to determine if it is overstaffed or appropriately resourced.

Analysis Techniques Used in Excel: For this project, I used Pivot Tables and Charts in Excel. These tools were chosen for their dynamic nature, allowing me to automatically update the visualizations when the dataset is modified. Pivot Tables also made it easier to analyze large amounts of data and uncover trends efficiently.

6. POST ANALYTICS AND INSIGHTS

Key Findings: Some of the key findings from my analysis were.

- Field Operations is the largest division by employee count and also has the highest performance ratings, making it the backbone of the company.
- Employees aged 57-66 years had the highest performance ratings, reinforcing the idea that experience contributes significantly to productivity.
- Communication Skills training had the highest number of participants and strong performance outcomes, highlighting the importance of soft skills in employee success.
- Asian employees had the highest performance ratings among racial groups, which could be due to cultural, training, or industry-specific factors.
- Single employees consistently had better performance ratings than their married counterparts, suggesting a potential impact of work-life balance on performance.

Comparison with Initial Findings:

- One expectation was that younger employees (e.g., 27-36 years) would perform best due to their adaptability and energy, but older employees (57-66 years) had the highest ratings, showing that experience plays a major role in performance.
- I initially thought that Leadership Development training would have the highest impact, but Communication Skills training turned out to be the most valuable in improving employee performance.
- I expected Executive or Engineering divisions to have the highest performance ratings, but Field Operations outperformed all other divisions, suggesting that hands-on, technical roles are more performance-driven.

7. DATA VISUALIZATION AND CHARTS

Some of the charts used in my project include:

Biggest Division by Staff Strength
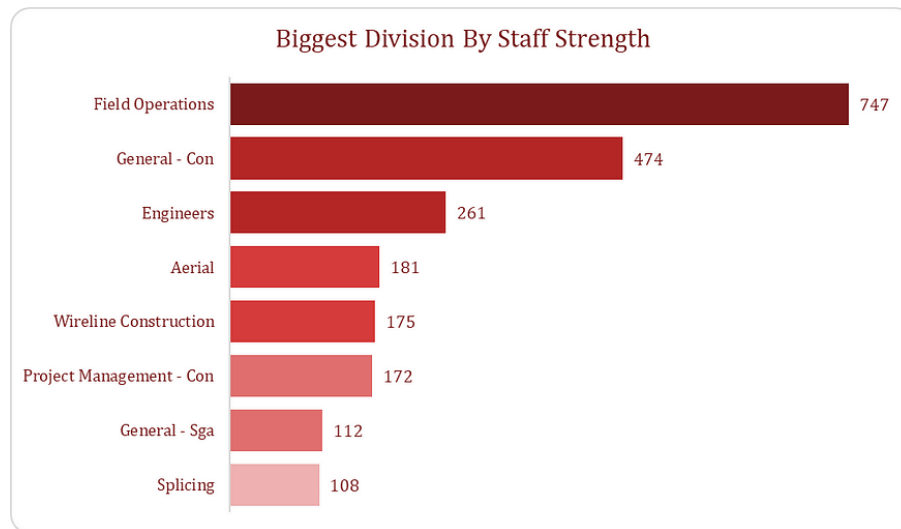
This chart shows that Field Operations has the highest staff strength (747 employees), followed by General-Con (474) and Engineers (261). Aerial (181), Wireline Construction (175), and Project Management-Con (172) have moderate staffing, while General-Sga (112) and Splicing (108) are the smallest divisions. This indicates that Field Operations and General-Con require the most workforce, likely due to operational demands. In contrast, Splicing and General

**Best Division by Employee Rating**
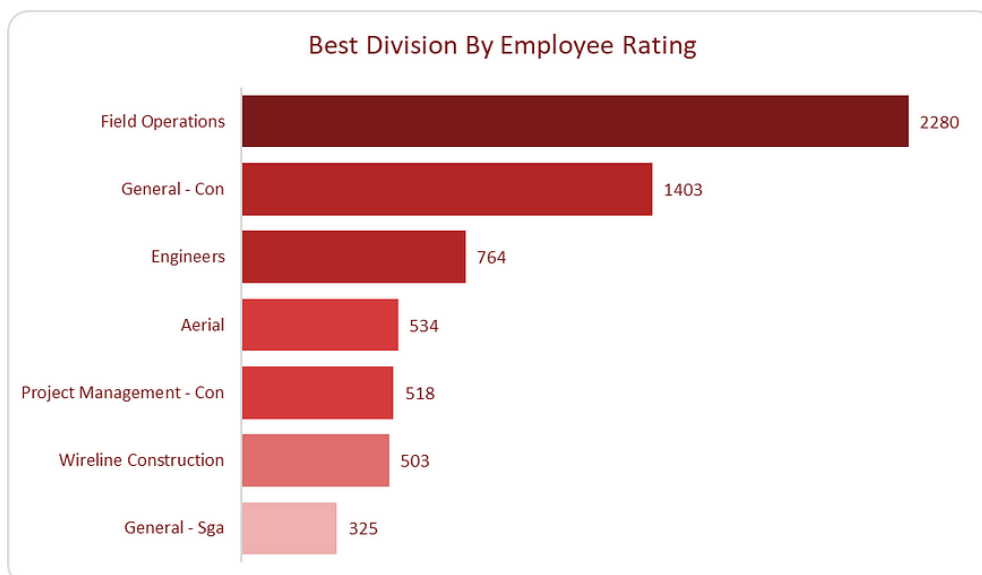
Field Operations has the highest employee rating (2280), followed by General-Con (1403) and Engineers (764). Aerial (534), Project Management-Con (518), and Wireline Construction (503) have moderate ratings, while General-Sga (325) is the lowest-rated division. The strong ratings in Field Operations and General-Con suggest high employee satisfaction, possibly due to effective management or work conditions. In contrast, General-Sga may require improvements to boost employee experience and engagement.

The Best Employee Age Group by Rating
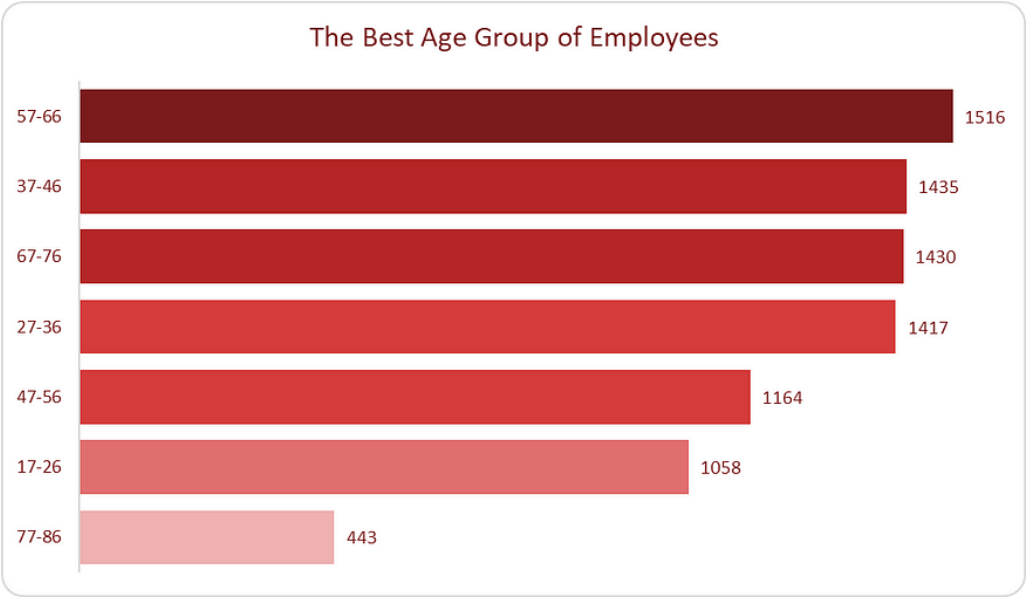
The 57–66 age group ranks as the best-performing employees with a score of 1516, closely followed by 37–46 (1435), 67–76 (1430), and 27–36 (1417) age groups. The 47–56 (1164) and 17–26 (1058) groups show moderate performance, while the 77–86 age group (443) has the lowest rating. The strong performance of older age groups suggests experience and stability contribute significantly to employee effectiveness, while younger employees may need more training and mentorship to improve.

Employee Age Count
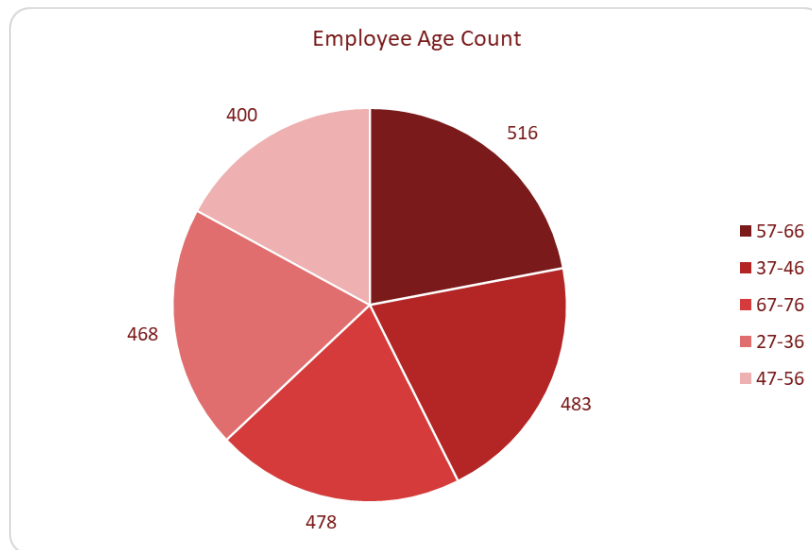
This pie chart represents the Employee Age Count, with the 57–66 age group having the highest count at 516, followed closely by the 37–46 (483), 67–76 (478), and 27–36 (468) groups. The 47–56 group (400) has the lowest representation.

It suggests a relatively balanced workforce across middle-aged and older employees, with fewer younger workers in the dataset.

Rating By Race
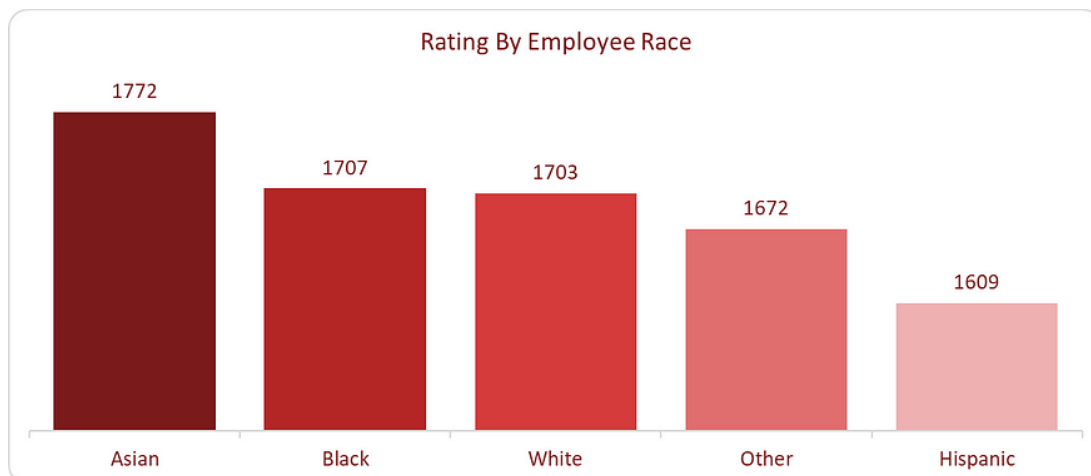
The chart shows employee ratings by race, with Asian employees receiving the highest rating (1772), followed by Black (1707) and White (1703) employees, who have nearly
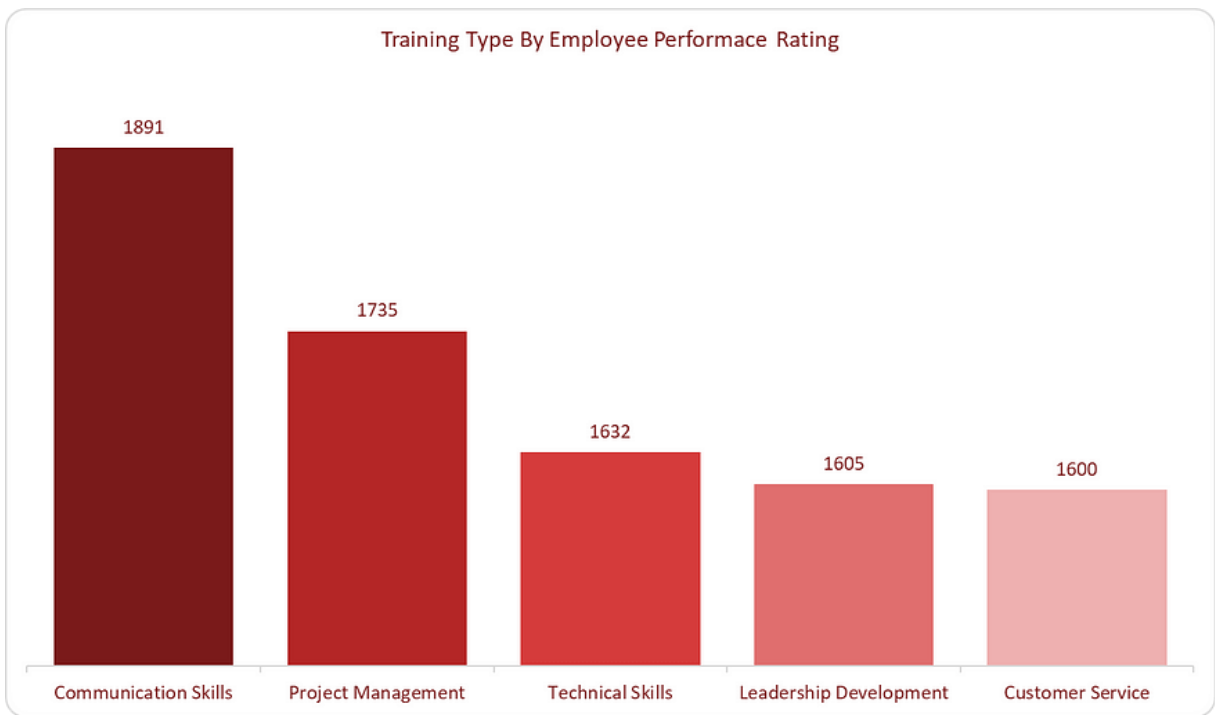
identical scores. Other (1672) and Hispanic (1609) employees have lower ratings, with Hispanics being the lowest. This might be due to the strong work ethic often associated with Asians and possibly blacks, leading to higher performance evaluations. However, other factors like workplace culture, opportunities, or biases could also contribute to these variations.

Performance Rating by Marital Status
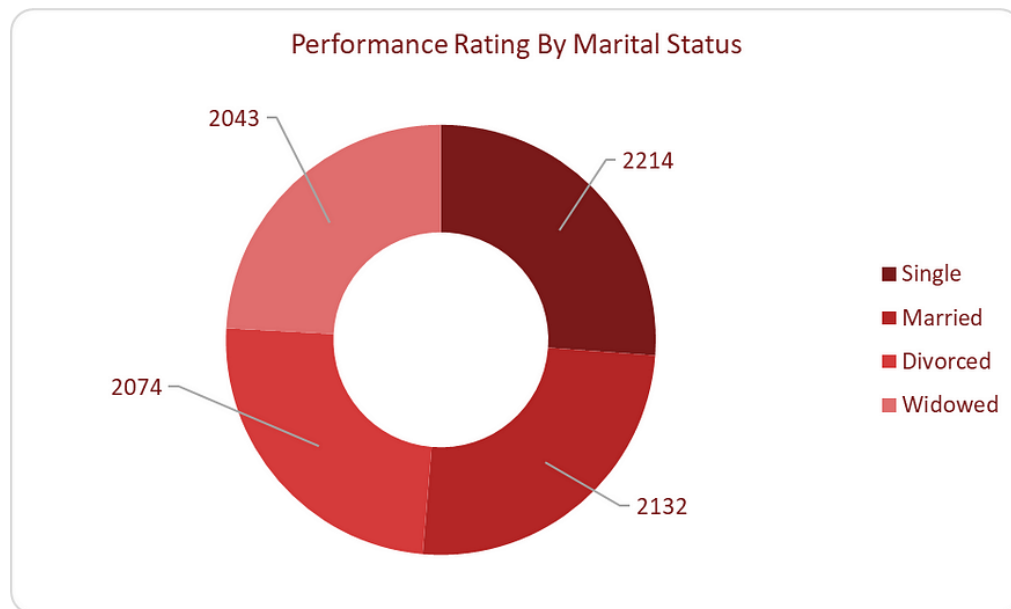
The chart shows performance ratings by marital status, with single employees having the highest rating (2214), followed by married employees (2132). Divorced (2074) and widowed employees (2043) have the lowest ratings. This trend might suggest that single employees have fewer personal responsibilities, allowing them to focus more on work. Married employees also perform well, possibly due to stability and motivation from family responsibilities. However, divorced and widowed employees may experience emotional or financial stress, which could impact their performance.

Training Type by Employee Performance Rating

Training Type By Employace Rating

1891 — Communication Skills
1735 — Project Management
1632 — Technical Skills
1605 — Leadership Development
1600 — Customer Service

The chart illustrates employee performance ratings based on training type. Communication skills training has the highest impact (1891), followed by project management (1735) and technical skills (1632). Leadership development (1605) and customer service (1600) show the lowest ratings. This suggests that strong communication enhances workplace performance significantly, while leadership and customer service training may require additional support or reinforcement to maximize effectiveness.
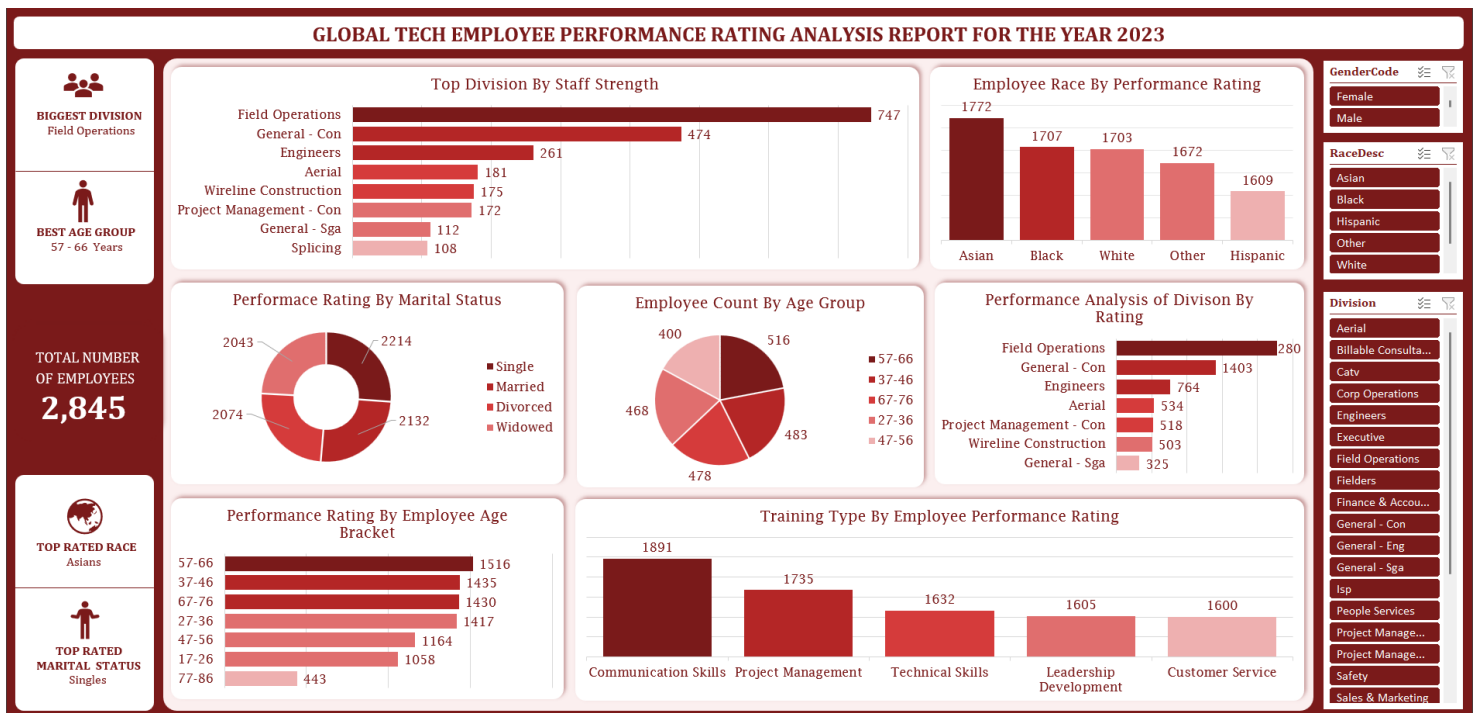
Dashboard of Global Tech Employee Performance Rating

8. RECOMMENDATIONS AND OBSEVATIONS

OBSERVATION

Some of the things I observed from the dashboard analysis include:

- The Field Operations Division is the largest, with 747 employees, followed by General Con (474) and Engineers (261), while splicing has the smallest workforce (108). This highlights the dominance of Field Operations in staffing compared to other divisions.
- Asians led in performance with 1,772 points, followed by Blacks (1,707), Whites (1,703), and Hispanics (1,609). The performance gap among racial groups suggests that Asians and Blacks had the highest workrate.
- Single employees have the highest performance rating (2,214), followed by married (2,132), divorced (2,074), and widowed (2,043). This suggests that marital status might influence work performance, with singles leading in overall ratings.
- Field Operations tops division ratings with 2,280 points, followed by General Con (1,403) and Engineers (764), while General SGA ranks lowest at 325 points. This may indicate higher efficiency in divisions with larger workforces.
- The majority of employees fall in the 57–66 age group (516), followed by 37–46 years (483) and 47–56 years (478), while the youngest age bracket has the least. This indicates an aging workforce with fewer younger employees.
- Performance is highest among employees aged 57–66 (1,516 points), followed by 37–46 years (1,435) and 67–76 years (1,430), but significantly drops for those

aged 77–86 (443). This suggests a decline in performance as employees approach older age.

- Communication Skills Training has the greatest impact (1,891 points), followed by Project Management (1,735) and Technical Skills Training (1,632). Leadership Development (1,605) and Customer Service Training (1,600) are the least effective, indicating areas where training improvements may be needed.

RECOMMENDATIONS

Some of the recommendations I can give to the company include:

- Field Operations and General Co Divisions are critical to company growth due to their large size. More resources should be allocated to these divisions to boost productivity, while smaller divisions should be evaluated for potential integration.
- Asians demonstrate high work efficiency, so maintaining a strong representation during recruitment is key. To improve overall performance, mentoring or specialized training should be provided for lower-performing employees, with high-performing Asians paired with low-performing Hispanics to enhance productivity.
- Employees aged 57–66 years are highly experienced and top-rated. The company should leverage their expertise through mentorship roles, contract extensions post-retirement, and improved onboarding for younger employees. Encouraging collaboration between older and younger staff will enhance knowledge transfer and productivity.
- Since widowed and divorced employees have the lowest performance ratings, mental health support systems and counseling services should be introduced. Work-life balance policies should also be reviewed to address the needs of employees across different marital statuses.
- The Field Operations Division, with the highest-rated employees, can serve as a model for others. Introducing incentives for the best-performing division and replicating successful strategies from top-performing divisions can boost productivity in lower-performing divisions. Specialized training should also be provided where necessary.
- Employees who attended Communication Skills Training performed significantly better. To maximize this, communication training should be mandatory for all employees and integrated into other training programs. The effectiveness of Customer Service Training should also be evaluated for possible curriculum improvements.
- To ensure continuous improvement, employee development should be tracked quarterly, with necessary adjustments made based on trends. High-impact training programs should be introduced to foster a culture of continuous learning and career progression.

9. CONCLUSION

Implementing these recommendations will drive higher productivity, employee engagement, and overall business growth. By strategically allocating resources to key divisions, leveraging high-performing employees for mentorship, and fostering a culture of continuous learning, the company can enhance efficiency across all levels. Addressing the needs of underperforming groups through targeted training, incentives, and support systems will create a more inclusive and motivated workforce. Regular tracking of employee progress and refining training programs will ensure sustained improvement and adaptability in an evolving business landscape. By taking these steps, the company can build a resilient, high-performing workforce and secure long-term success.