# Employee Salary Analysis

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**Last Updated:** February 3rd, 2023

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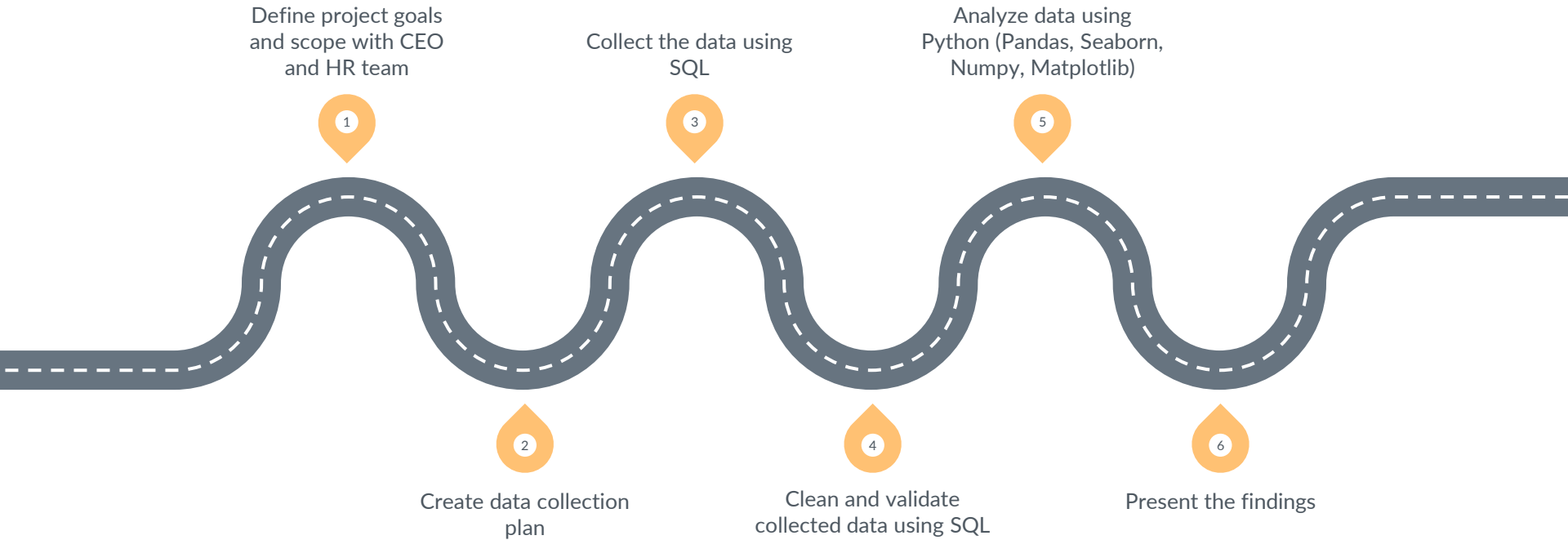6. Final Results
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# Scope summary

The CEO requested me to answer questions about the salaries of construction sites (also companies for themselves) for the company group.

He also requested some recommendations if pertinent.

# Questions

1. Has the average salary decreased or increased since January 2022?
2. How effective is our HR program to reduce the gender gap?
3. How are our salaries distributed across the states?
4. How standardized is our pay policy across the states?
5. How experienced are our engineering team?
6. In what function groups do we spend the most?
7. What construction sites spent the most in salaries for the period?

# Approach and Analysis

Define project goals and scope with CEO and HR team

1

Collect the data using SQL

3

Analyze data using Python (Pandas, Seaborn, Numpy, Matplotlib)

5

2

Create data collection plan

4

Clean and validate collected data using SQL

6

Present the findings

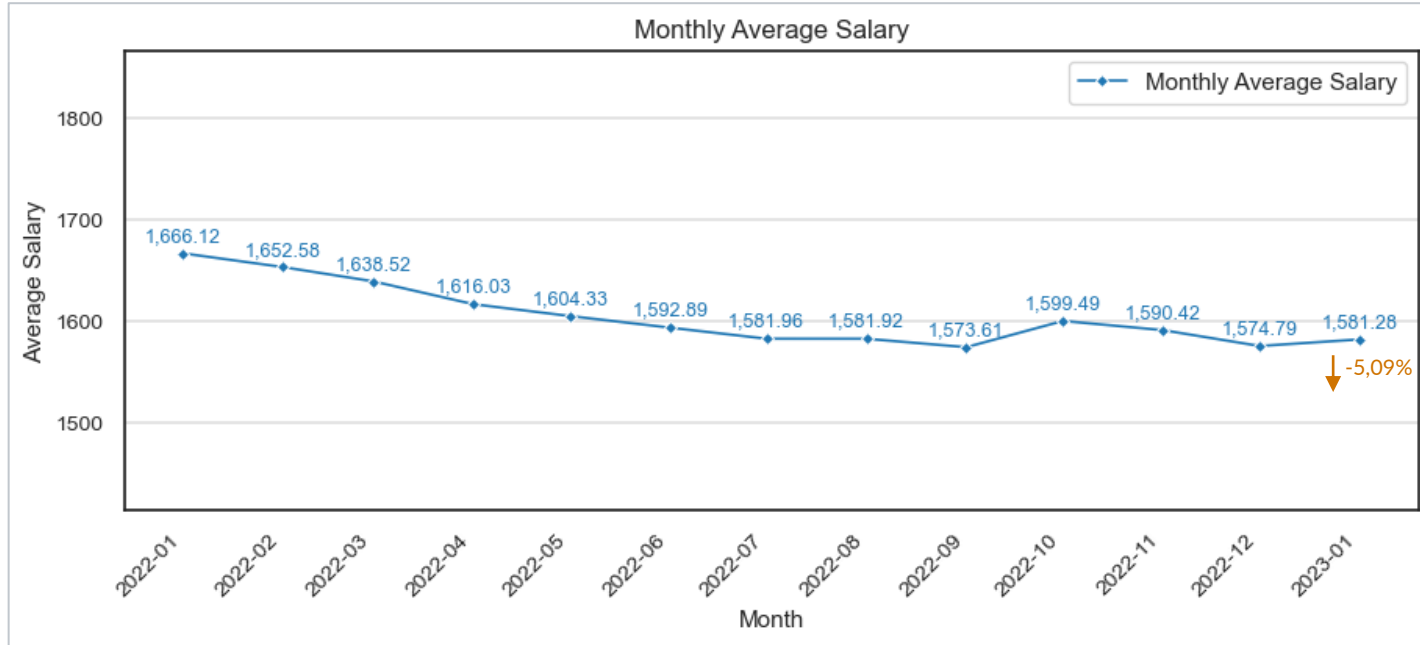# Technical Challenges

## Data Collection

The dataset was not fully available, it was spread around the ERP system, and there was no documentation on how to find it.

## Data Cleaning

The dataset presented multiple missing values, typos, and standardization problems.

# Average Salaries

Has the average salary decreased or increased since January 2022?



Monthly Average Salary

| Month | Monthly Average Salary |
|-------|------------------------|
| 2022-01 | 1,666.12 |
| 2022-02 | 1,652.58 |
| 2022-03 | 1,638.52 |
| 2022-04 | 1,616.03 |
| 2022-05 | 1,604.33 |
| 2022-06 | 1,592.89 |
| 2022-07 | 1,581.96 |
| 2022-08 | 1,581.92 |
| 2022-09 | 1,573.61 |
| 2022-10 | 1,599.49 |
| 2022-11 | 1,590.42 |
| 2022-12 | 1,574.79 |
| 2023-01 | 1,581.28 |

↓ -5,09%

The average salaries **decreased by 5,09%** since January 2022.

# Salary Distribution

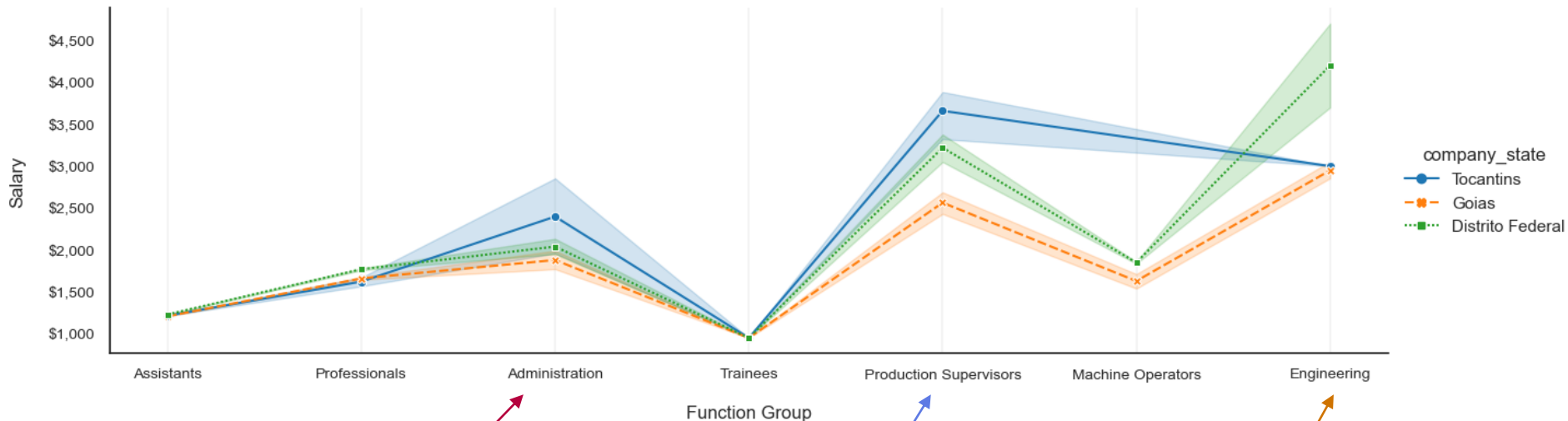How are our salaries distributed across the states?
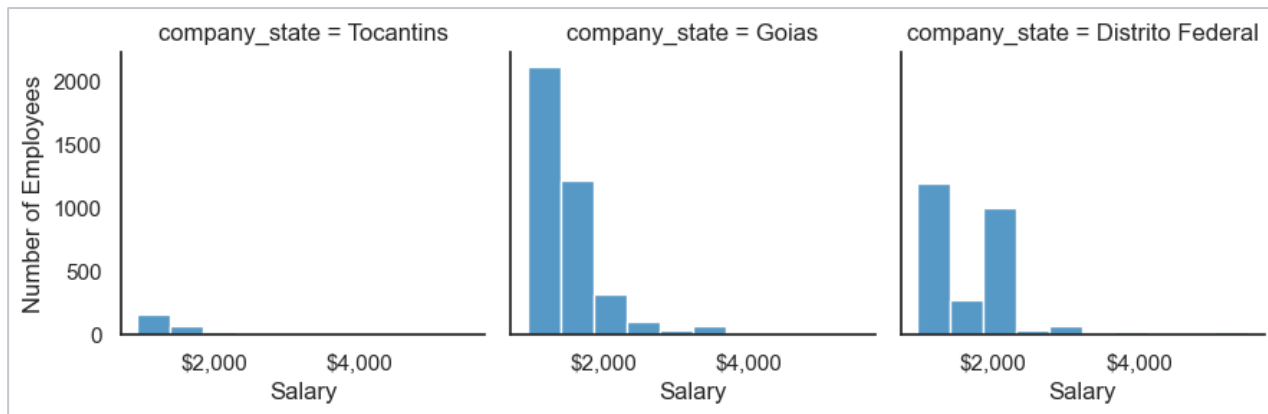


Goias is the state that has the most employees with the **lowest** salaries.

Distrito Federal has a wider range of salary distribution.

# Standard Pay Policy

How standardized is our pay policy across the states?
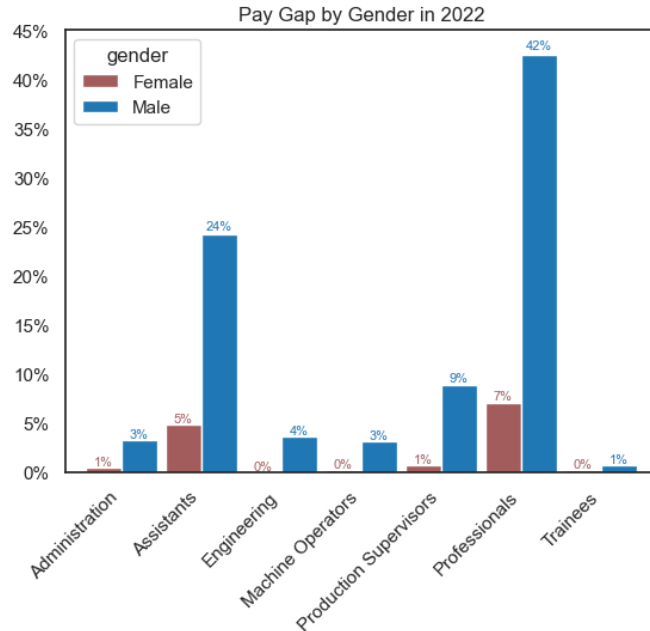


Function Group Salaries by State

Tocantins has a higher-paid administration

The salaries of production supervisors are very different among each other
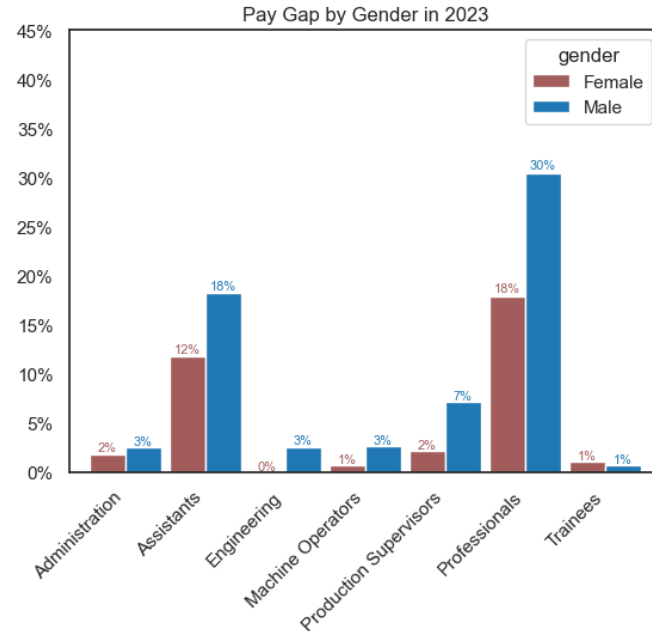
Distrito Federal has the highest-paid engineering team

# Salaries by Gender

How effective is our HR program to reduce the gender gap?



Pay Gap by Gender in 2022



Pay Gap by Gender in 2023

The salary difference between genders has **decreased** since the beginning of the HR program in January 2022.

One example is the professional function group that in 2022 **men were 42%** of the salary paid and **women were 7%**. Now men represent **30%** and women **18%.**

# Salaries by Gender

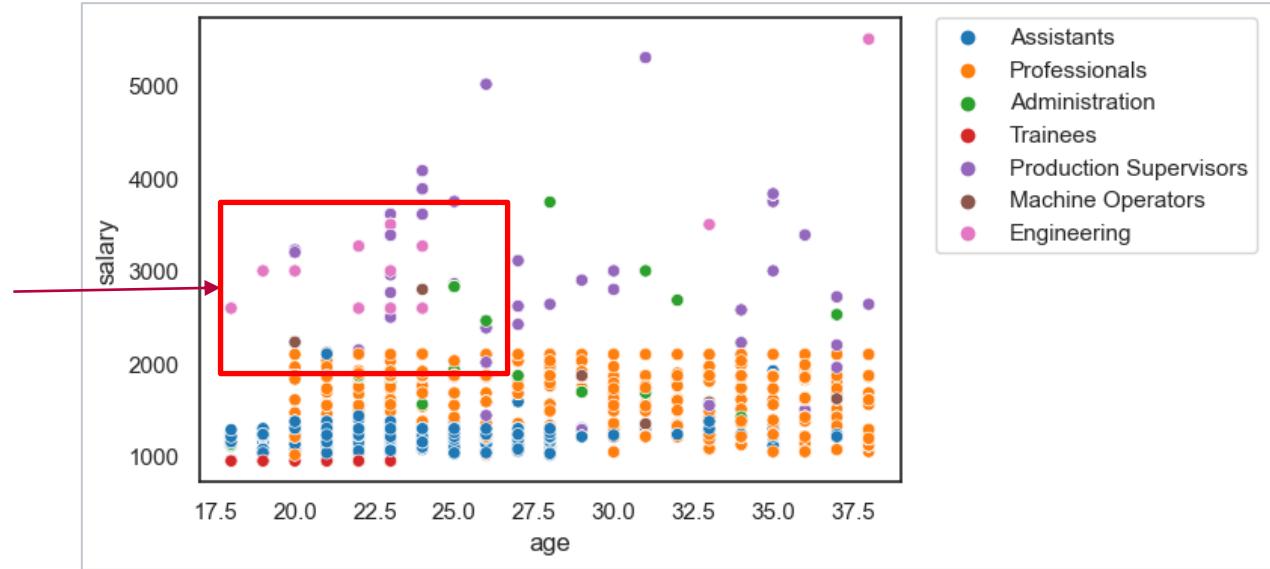How effective is our HR program to reduce the gender gap?
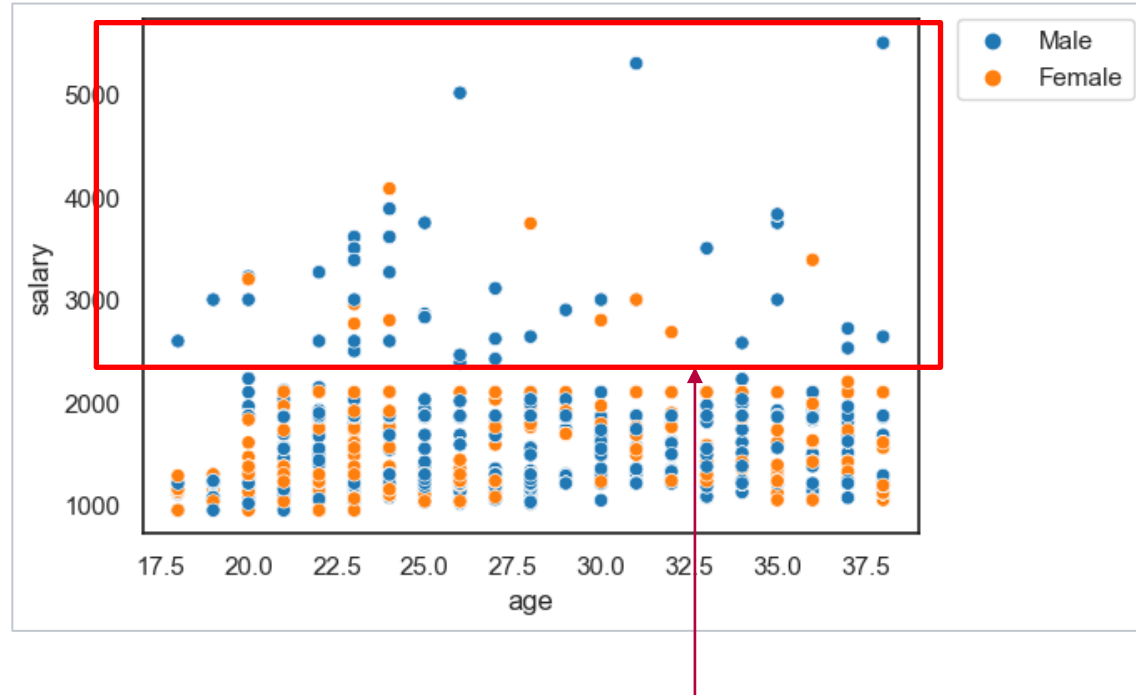


We see that the lowest salaries are well distributed across gender and age but the **highest-paid employees are still mostly men**.

# Engineering Experience

How experienced is our engineering team?

The engineering team is mostly **younger than 25 years** old. The time experience is not very high.

# Total Salaries by Function Group

In what function groups do we spend the most?

Administration and Assistants represent **78.6%** of the paid salaries since January 2022



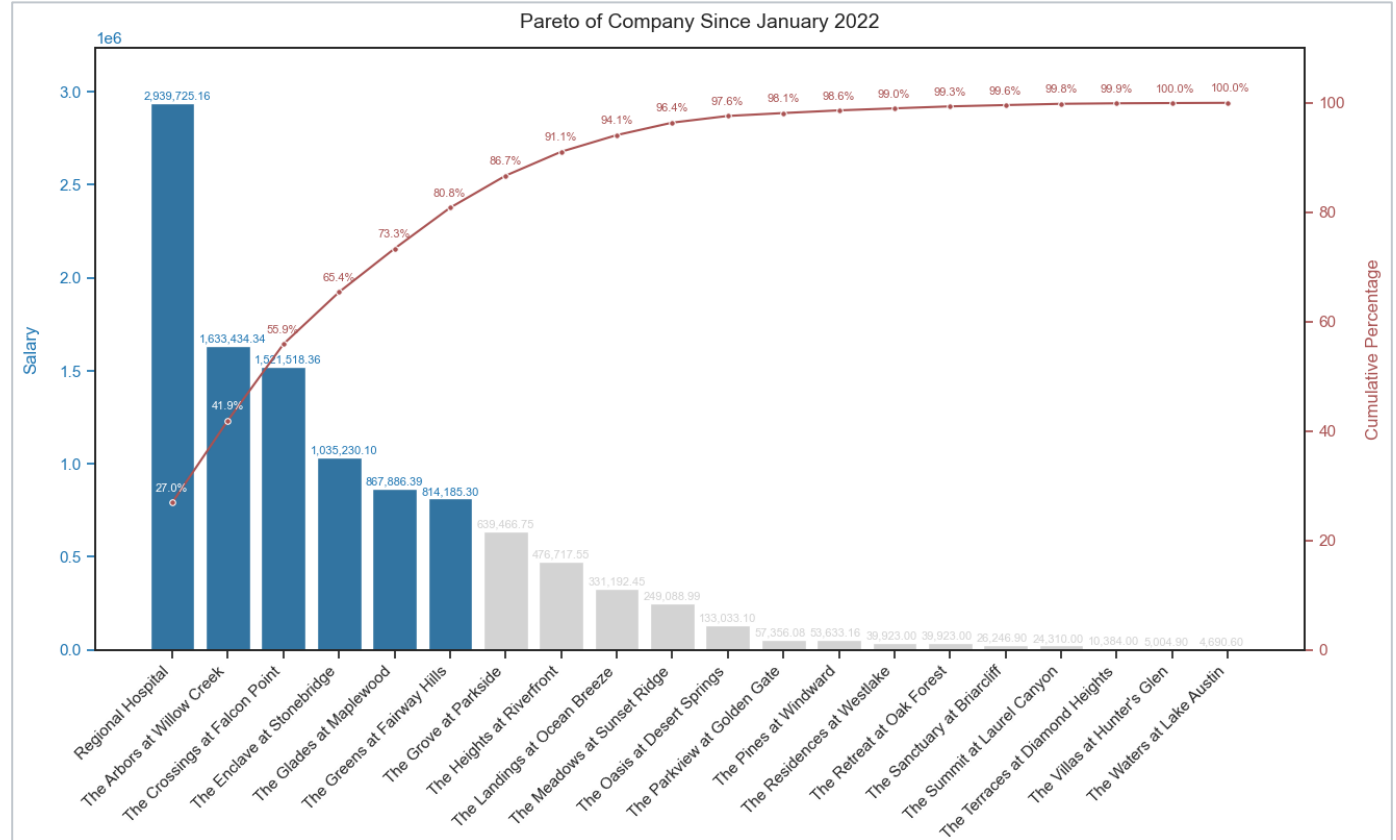Pareto of Function Groups Since January 2022
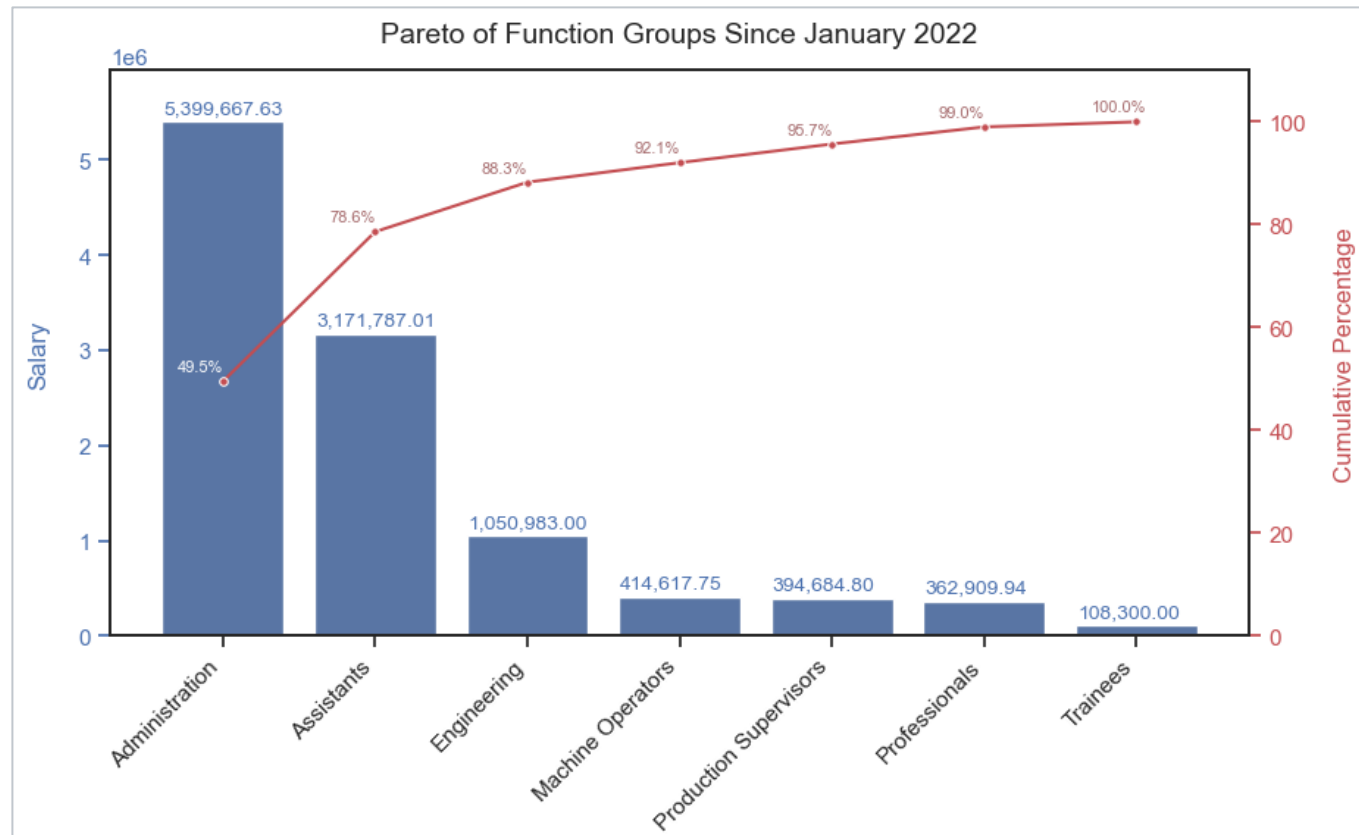
# Total Salaries by Company (Const. Site)

What construction sites spent the most in salaries for the period?

**3 companies represent 55.9%** of the paid salaries since January 2022. **The top 6 represents 80.8%.**

The **Regional Hospital** alone represents **27.0%**.



Pareto of Company Since January 2022

# Final Results

### 1 - Has the average salary decreased or increased since January 2022?

The average salaries **decreased by 5,09%** since January 2022 from $ 1,666.12 to 1,581.28.

### 2 - How effective is our HR program to reduce the gender gap?

The salary difference between genders has decreased since the beginning of the HR program in January 2022. Therefore it has a **significant improvement in gender equality** promoted by the company. Besides all that, the top salaries are still dominated by men.

### 3 - How are our salaries distributed across the states?

Goias is the state that has the most employees with the **lowest salaries**. Distrito Federal has a wider range of salary distribution and Tocantins has the least number of employees.

### 4 - How standardized is our pay policy across the states?

The salaries are not very standardized across the states. The results show **discrepancies in high-level positions** of the company,

# Final Results

### *5 - How experienced is our engineering team?*

The engineering team is mostly **younger than 25 years old**. That shows a low-experienced team.

### *6 - In what function groups do we spend the most?*

**Administration and Assistants** represent **78.6%** of the paid salaries since January 2022

### *7 - What construction sites spent the most in salaries for the period?*

Regional Hospital, The arbors at Willow Creek, and The Crossings at Falcon Point represent **55.9%** of the paid salaries since January 2022. The top 6 represents 80.8%. The **Regional Hospital** alone represents **27.0%**.

# Recommendations

1. Further investigation is needed to confirm if the decreasing average salary value is due to unsatisfied employees with a high turnover or any other reason.

2. Salaries across states need to be standardized. Since the states are very similar to each other employees with the same functions can't continue getting paid different amounts.

3. The state of Goias shows a high number of low-paid employees. It needs further investigation to understand if it's just a trend or if it means low-qualified manpower.

4. The gender equality program is working but HR needs to pay attention to including women in the highest-paid salaries too.

5. The engineering team has shown to be very inexperienced. It needs thorough attention from the HR team to assess training for current engineers and look for more experienced ones for the new hires.

# Thank You!

If you have any questions or just want to connect you can find me at:

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