

TRIPLE TEN

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C A L L M E M A Y B E

E F F I C I E N C Y

## **Overall objective**

Identify the least effective operators using key telephone service metrics, in order to help supervisors make informed decisions.

## **Specific objectives**

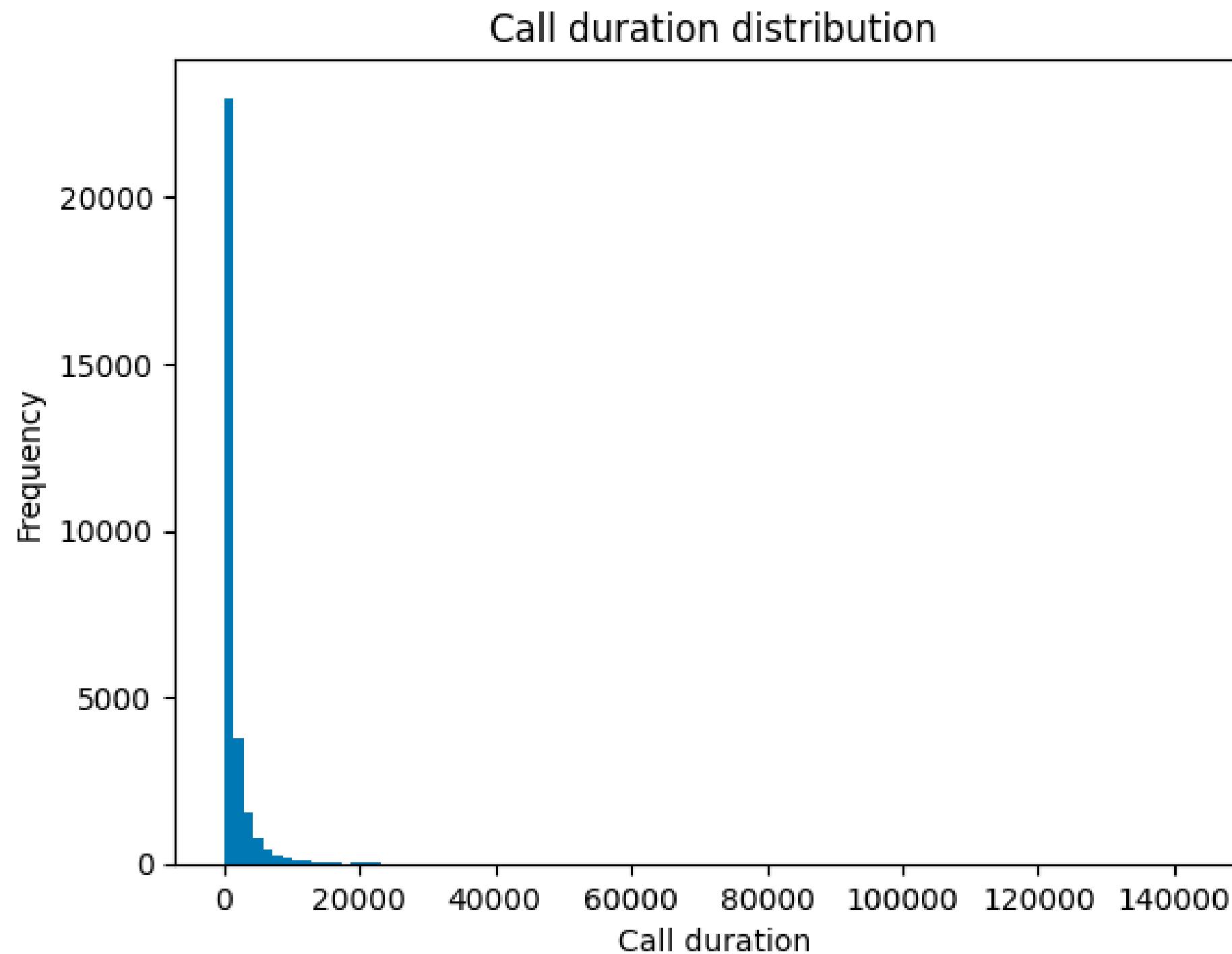
- Analyze the behavior of incoming and outgoing calls.
- Evaluate wait time, call duration, and missed calls per operator.
- Define quantitative criteria for inefficiency.
- Classify operators as efficient or inefficient.

# **OBJECTIVES**

# DATASOURCES

We worked with datasets that included information on:

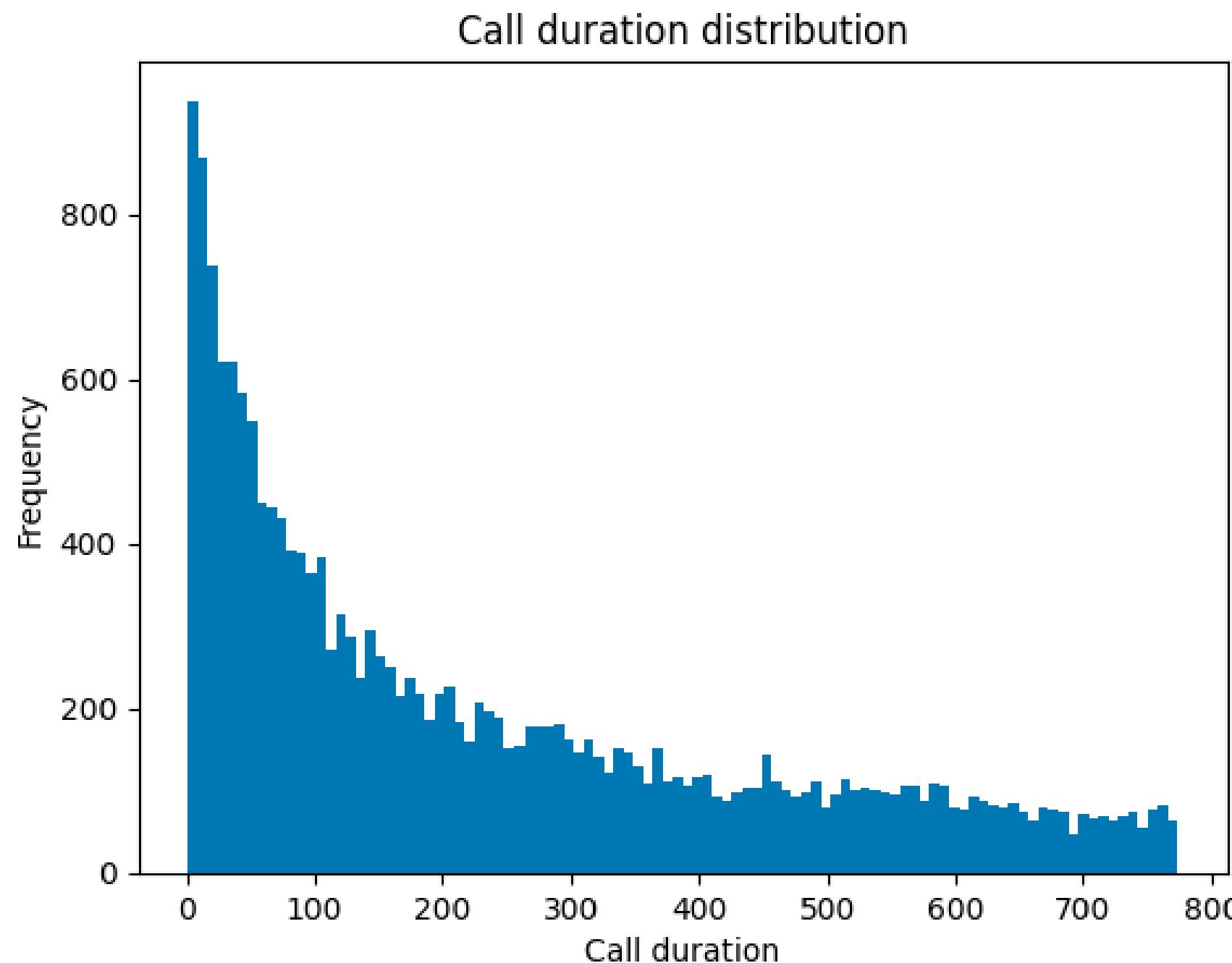
- Call duration
- Number of internal and external calls
- Percentage of missed calls
- Average wait time
- Number of incoming and outgoing calls
- User and operator identifiers



### Call duration distribution

- Most calls are very short.
- The distribution is skewed to the right, indicating few extremely long calls.
- This behavior is common in customer service.

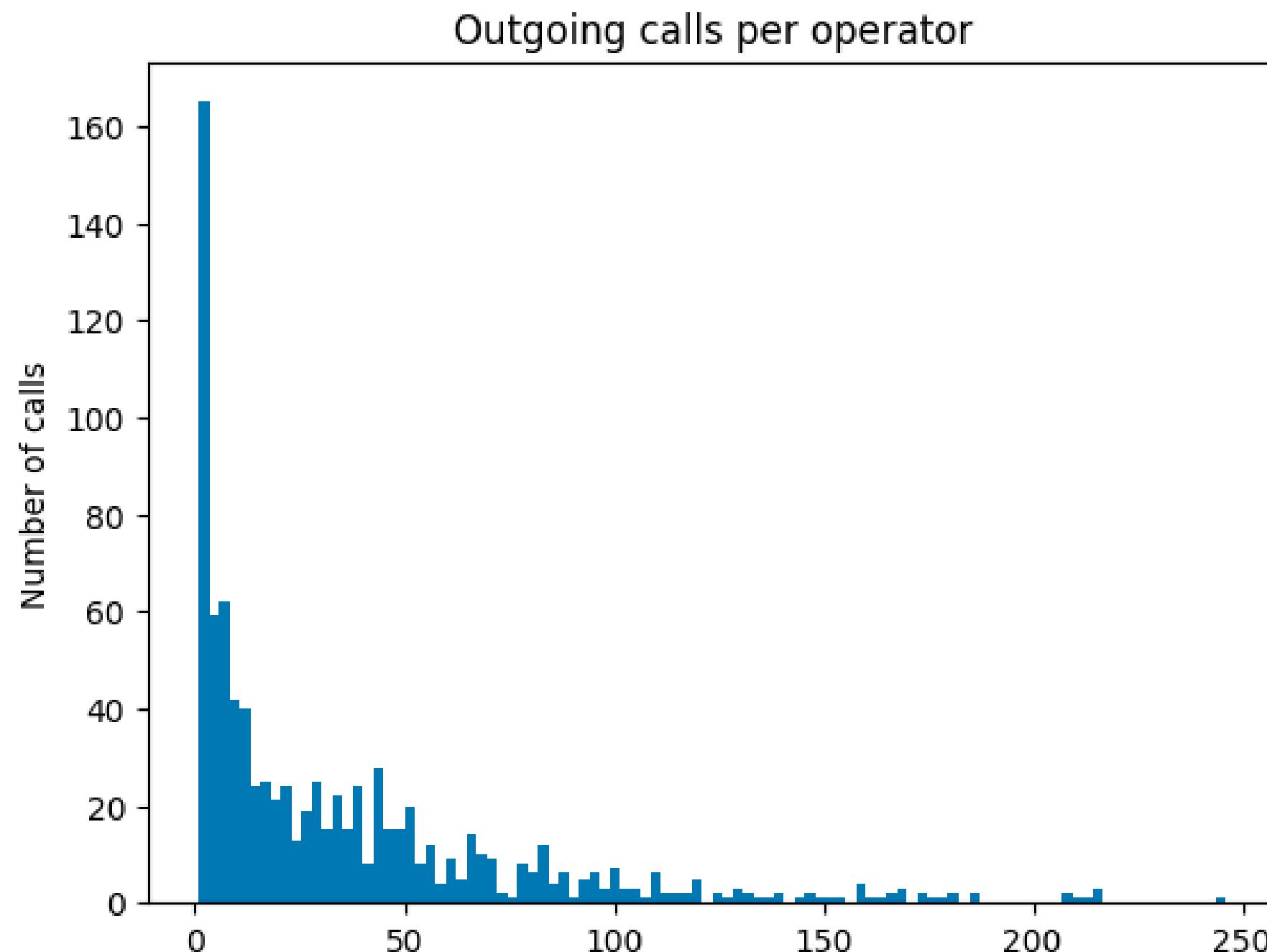
It helps to understand the actual operational load and detect atypical durations.



### Call duration without extreme values

- By removing outliers, typical behavior can be observed more clearly.
- Most calls last between 0 and 100 seconds.
- This distribution makes statistical analysis more stable.

It allows reliable thresholds to be defined for evaluating performance.

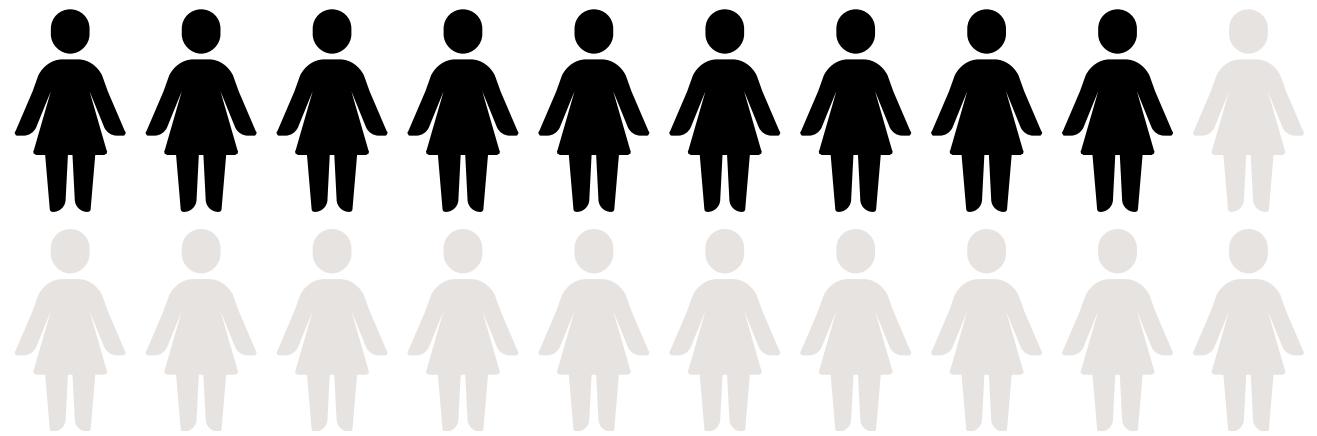


### Outgoing calls by operator

- Most operators make between 0 and 20 outgoing calls.
- Some operators have very low or almost no activity.

This analysis helps identify operators with low participation.

# INEFFICIENCY

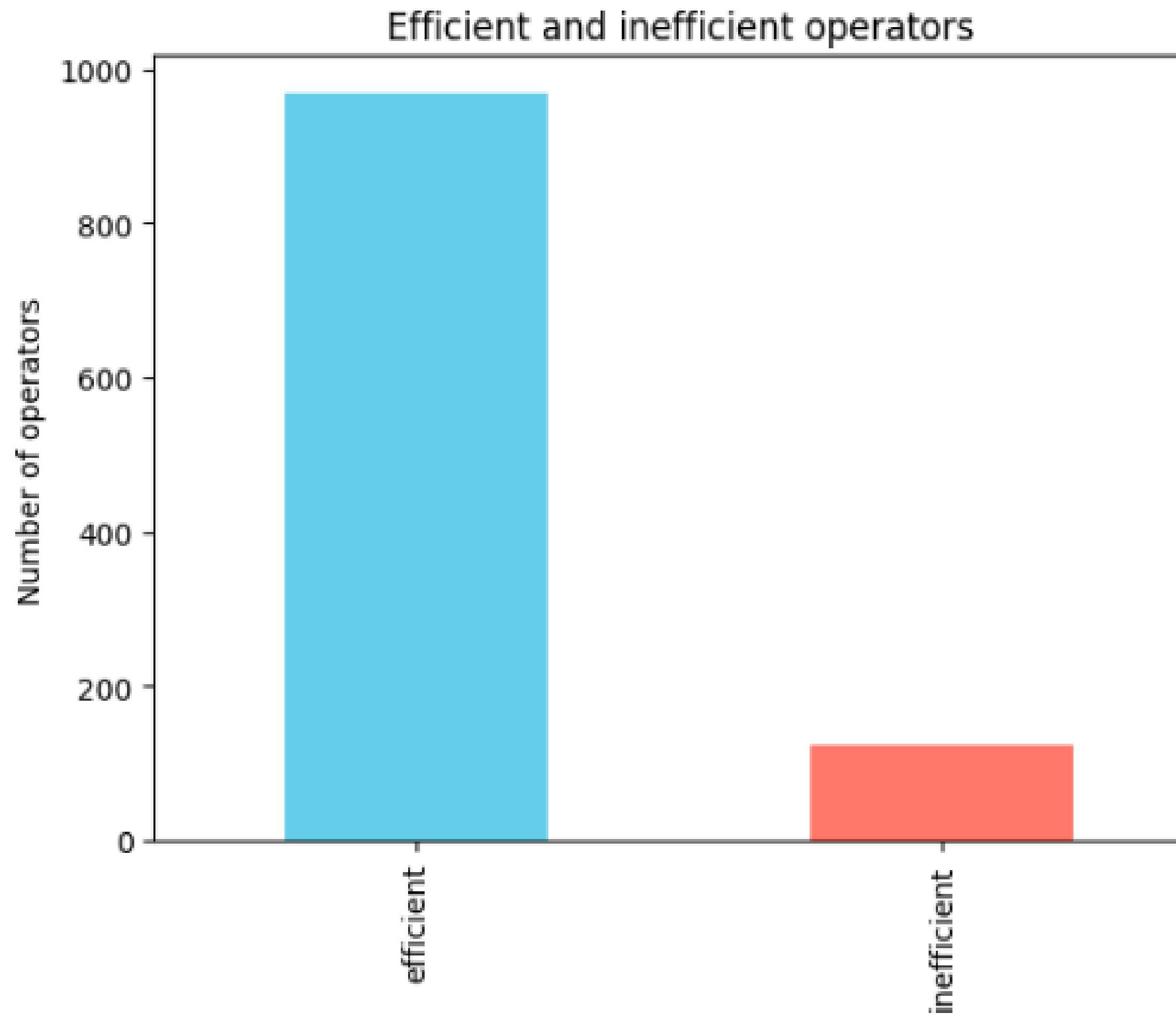


## Selected factors

Based on distributions and metrics, operators that meet two or more of the following criteria were defined as inefficient:

- Fewer than five outgoing calls
- Percentage of missed calls  $> 12.13\%$
- Average wait time  $> 155.54$  seconds

These thresholds represent outliers or values that are significantly worse than the overall average.



### Efficient vs. inefficient operators

- It displays how many operators meet the criteria for efficiency or inefficiency.
- This allows supervisors to prioritize interventions.

A t-test was performed to compare the average waiting time between efficient and inefficient operators.

- $H_0$ : There is no significant difference between the two groups.
- $H_1$ : Inefficient operators have a longer average waiting time.

**Result:**

The test showed sufficient evidence to reject  $H_0$ , confirming that inefficient operators do indeed have longer waiting times.

# HYPOTHESIS

The analysis identified low-performing operators using objective, statistically validated metrics.

### **Key findings**

- Call durations are concentrated in short periods of time.
- Many operators have low outgoing call activity.
- The selected factors allow operators to be classified accurately.
- Hypothesis testing confirms significant differences between groups.

Supervisors now have a data-driven tool to improve team efficiency.

# **CONCLUSIONS**

- Training aimed at inefficient operators.
- Continuous monitoring of identified metrics.
- Implement early warnings based on factors of inefficiency.
- Review operator rankings on a monthly basis.

# RECOMMENDATIONS