

Optimizing IT Support Team Performance Using Analytics (Supportlytics)

Milestone 3: Week 5-6

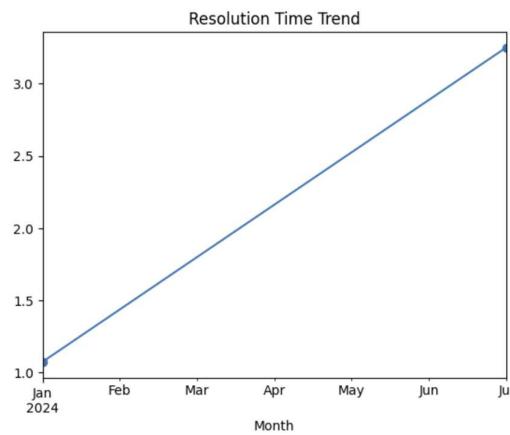
Module 5: Performance Insights and Optimization

- **Create Resolution Duration metric**

A new feature called **Resolution_Duration** was calculated by subtracting the ticket creation date from the resolution date. This metric represents the total time taken to resolve each support ticket and serves as the primary performance indicator.

- **Resolution Time Trend Over Time**

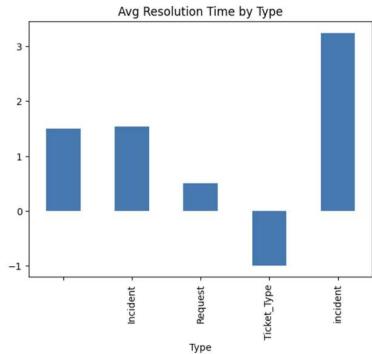
The average resolution time was analyzed on a monthly basis to observe performance changes over time. The line chart highlights whether support efficiency is improving or declining. This helps detect seasonal delays, backlog periods, and overall system stability.



- **Compare resolution time by ticket type**

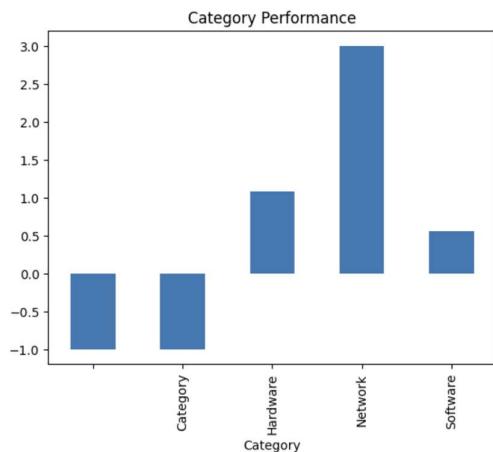
Resolution time was analyzed for different ticket types such as **Requests, Incidents, and Problems**. Bar charts were used to compare the average

time taken for each type. This helped identify which issues require more handling effort.



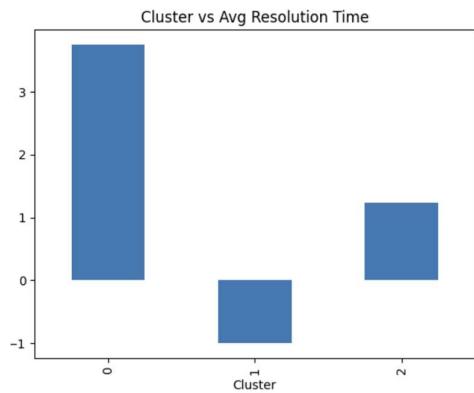
- **Category-wise Resolution Performance**

The average resolution time was calculated for each issue category to identify which types of problems take longer to resolve. Categories with higher resolution times indicate complex or repetitive issues that require process improvements or specialized handling.



- **Cluster Performance Analysis**

Tickets were grouped into clusters based on priority and resolution behavior. The average resolution time for each cluster was compared to identify slow-performing groups. Clusters with higher resolution time represent performance bottlenecks and require optimization.



- **Deliverables**

Performance charts, resolution metrics, and optimization insights highlighting delays, workload imbalance, and improvement areas.

Module 6: Advanced Visualization and Cluster Performance Analysis

- **Analyze ticket distribution by support teams**

Ticket counts were calculated for each support queue (**Assigned_To**) to understand workload distribution. This helped identify overloaded and underutilized teams.

```

if 'Country' in df.columns:
    region_col = 'Country'
elif 'Region' in df.columns:
    region_col = 'Region'
else:
    region_col = 'Assigned_To'    # fallback (recommended)

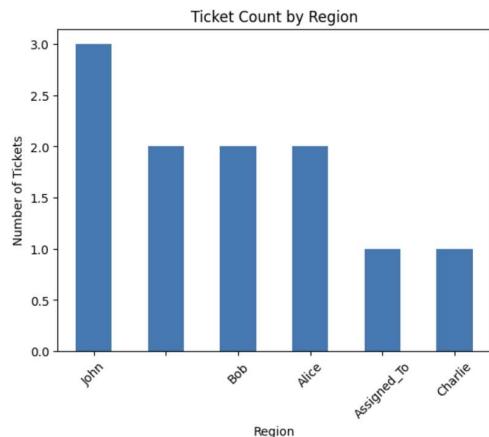
print("Using column for regional analysis:", region_col)

```

Using column for regional analysis: Assigned_To

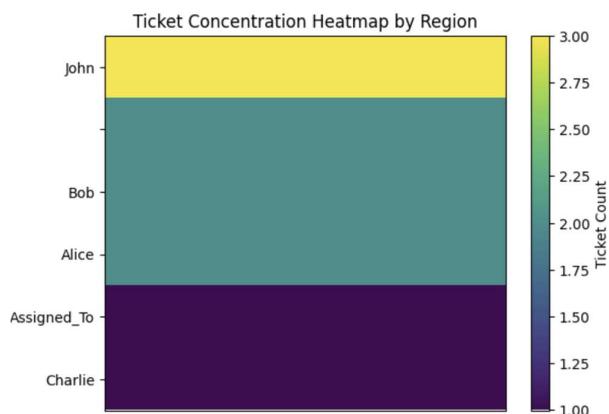
- **Ticket Distribution by Region/Team**

The number of tickets handled by each region (or support team) was calculated and visualized using a bar chart. This helps identify workload distribution and detect overloaded or underutilized teams. Regions with higher ticket counts may require additional resources or better task allocation.



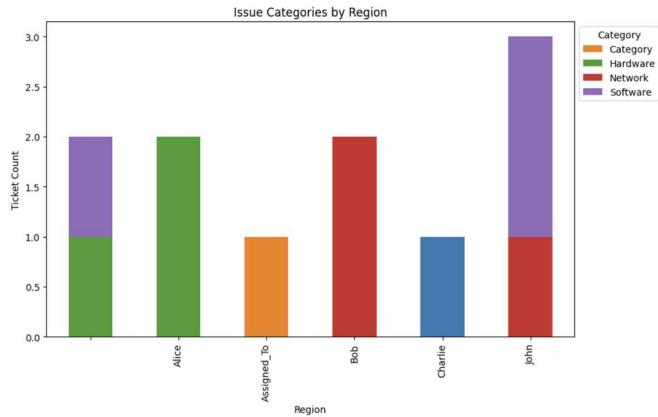
- **Ticket Concentration Heatmap**

A heatmap was created to visually represent ticket concentration across regions. Darker areas indicate higher ticket volumes, allowing quick identification of high-demand regions. This visualization helps management focus on areas requiring operational improvements.



- **Category-wise Issue Distribution by Region**

A stacked bar chart was used to compare issue categories across different regions. This analysis highlights dominant issue types in each region and helps identify recurring technical problems. It supports targeted solutions and specialized team allocation.



- **Deliverables**

Cluster-based visualizations and performance insights to support better resource allocation and faster issue resolution.