**Supplier Quality Report**

**Introduction**:

The Supplier Quality Dashboard presents a detailed view of supplier performance over time, tracking defects, vendor contributions, and category-level insights across various plants. The report aims to highlight key trends in defect quantities, vendor-specific performance, plant performance, and defect categories. This analysis provides critical insights into where supplier quality issues arise and suggests areas for improvement.

1. **Defect Trend Over Time by Vendor**:

The graph on Defect Trend Over Time highlights the performance of different vendors across four quarters.

- Impact defect (Yellow Line) has the highest initial defect quantity in Q1 with 4.69M defects, which increased to 6.21M in Q2. While the defect count drops to 4.58M in Q3, Continued to 3.9M in Q4.

- Rejected defect (Teal Line) starts at 3.36M defects in Q1, peaks in Q2 at 5.9M, and then shows a steady decrease in Q3 and Q4.

- No Impact defect (Red Line) starts at a lower level of 2.77M defects in Q1, shows a slight increase in Q2, and then spikes to 6.3M defects in later quarters.

**Key Insights**:

- Impact shows a significant increase in Q2, decreases significantly in later quarters, and is a primary contributor to defects across all quarters, making them a key focus for quality improvements.

- No Impact, despite starting with fewer defects, shows a significant trend of consistent growth, requiring closer monitoring.

2. **Vendor Performance (Defects by Vendor)**:

The bar chart on Vendor Performance breaks down the defect counts by type (Impact, No Impact, Rejected, etc.).

- Vendor R (Reddoit) has the largest share of rejected defects and also ranks high in impactful defects, indicating a severe quality issue.

- Other vendors like Subdrill and Scotquote also show substantial numbers of defects, with a mix of rejected and non-impact defects.

**Key Insights**:

- Vendor R is the worst performer in terms of defect count and type, requiring immediate corrective measures.

- Vendors such as Subdrill and Scotquote, though performing better than Reddoit, still contribute a notable number of defects.

3. **Vendor Performance Across Plants**:

The heatmap displaying Vendor Performance across Plants reveals where the largest number of defects are coming from at different plant locations.

- The Chicago, IL plant shows the highest number of defects, particularly from Vendor R (Reddoit) with 23 defects.

- Other notable locations include Bangor, MI, where Vendor Q faces significant quality issues, and Detroit, MI, where Vendor S underperforms.

**Key Insights**:

- Chicago, IL is a high-risk plant with severe vendor quality issues, particularly with Vendor R.

- Detroit, MI, and Bangor, MI also warrant attention, as they are seeing increasing defect counts from multiple vendors.

4. **Contribution of Defects by Vendor and Category**:

The treemap on the Contribution of Defects by Vendor and Category provides an overview of which categories are contributing the most defects:

- Labels represent the largest contribution to overall defects, accounting for 2.2M defects, followed by Corrugate with 1.5M defects.

- Other high-contributing categories include Film, Controllers, and Composites.

**Key Insights**:

- Packaging materials like Labels and Corrugate represent the highest defect quantities, indicating a need for improvement in these categories.

- Electrical components, such as Controllers, also pose significant quality challenges.

5. **Sum of Defects by Category**:

The bubble chart of Defects by Category shows the breakdown of defect quantities across different categories:

- Mechanicals and Packaging have the highest number of defects, followed by Logistics.

- This visual suggests that vendors in mechanical and packaging categories are contributing significantly to the overall defect count.

**Key Insights**:

- Mechanical defects are the largest problem area, followed by Packaging. Addressing issues in these categories could lead to a marked improvement in supplier quality.

**Conclusion**:

This dashboard analysis provides several crucial takeaways for supplier quality management:

1. Impact defect has a highly fluctuating defect rate, while No Impact defect shows a rising trend in defects, indicating the need for targeted interventions.

2. Vendor R (Reddoit) is the worst-performing vendor across several plants and defect categories, requiring immediate corrective action and tighter quality controls.

3. The Chicago, IL plant experiences the highest defect rates, with a significant contribution from Vendor R. Special attention should be given to improving supplier performance in this location.

4. Labels and Corrugate represent the highest defect categories, meaning suppliers in these categories should undergo a thorough review.

5. Mechanical and Packaging defects dominate the overall defect count, making them a primary focus for quality improvement efforts.

**Recommendations**:

1. Vendor Audits: Conduct comprehensive audits for Impact defect and Vendor R to identify root causes of high defect counts and explore corrective measures.

2. Plant-Specific Interventions: Focus on improving vendor relationships and quality controls at the Chicago, IL, and Detroit, MI plants, as these locations are experiencing the highest defect volumes.

3. Category Improvement: Investigate quality issues related to Mechanical components and Packaging materials to reduce defect quantities in these categories.

4. Strengthen Supplier Contracts: Consider revisiting supplier contracts to impose stricter quality requirements, particularly in high-defect categories like Electrical components, Labels, and Corrugate.

5. Ongoing Monitoring: Implement continuous monitoring of defect trends by vendor and category to ensure that any improvements are sustained over time.

By addressing these issues through targeted interventions, the organization can significantly reduce defects, improve supplier relationships, and enhance overall product quality.