PRECISION PULSE: UNVEILING TOOL DYNAMICS & INVENTORY OPTIMIZATION

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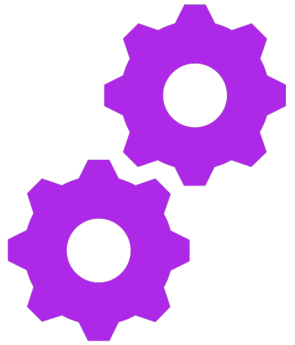
PROBLEM STATEMENT & HYPOTHESIS

Problem Statement: Investigate how demand and parts per tool usage affect tooling failure.



Hypothesis: Demand and parts per tool usage statistically significantly affect tooling failure.

DATA ANALYSIS PROCESS

Exploratory Data Analysis (EDA)

Data Collection and Preparation

Model Development

Model Validation

Visualization in Tableau

LIMITATIONS

- Reliance on Artificially Created Historical Data
- Assumption of Linear Relationships
- Limitations of Tableau

REVIEW OF TABLEAU ANALYSIS

Walkthrough for Dashboard Installation: Step-by-Step Guide:

1. Visit Tableau Public website: https://public.tableau.com/app/discover
2. Find Dashboard: Locate dashboard by using the search engine located in the top right corner of the website.
    a. Type “Tool Failure Analysis by Jasmine Cooper”
3. Open the dashboard: Click the dashboard to view it. This will take you to the dashboard’s page on Tableau Public.
4. Interact with the Dashboard: Explore the dashboard interactively by clicking on elements, filters, and tooltips within Tableau Public.

OUTLINE OF FINDINGS

01

Significant factors affecting tool failure: Parts Per Tool, Demand Week 36, Demand Week 40, No. Tools on Hand (actual), No. of Tools Needed Based on Reorder Point, and Adjusted Reorder Point

02

Reorder Point Discrepancy: Predicted Tool Wear reorder points are significantly larger than Inventory reorder points, suggesting high variability in demand and/or inventory

03

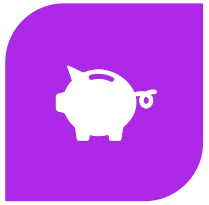
Tool Type L Variability: Most demand and tool utilization are concentrated on tool type L

RECOMMENDATIONS

- Implement a Dynamic Inventory Management System
- Develop Dynamic Inventory Policies
- Prioritize Tool Type L
- Utilize Distribution Bands

EXPECTED BENEFITS

REDUCED DOWNTIME



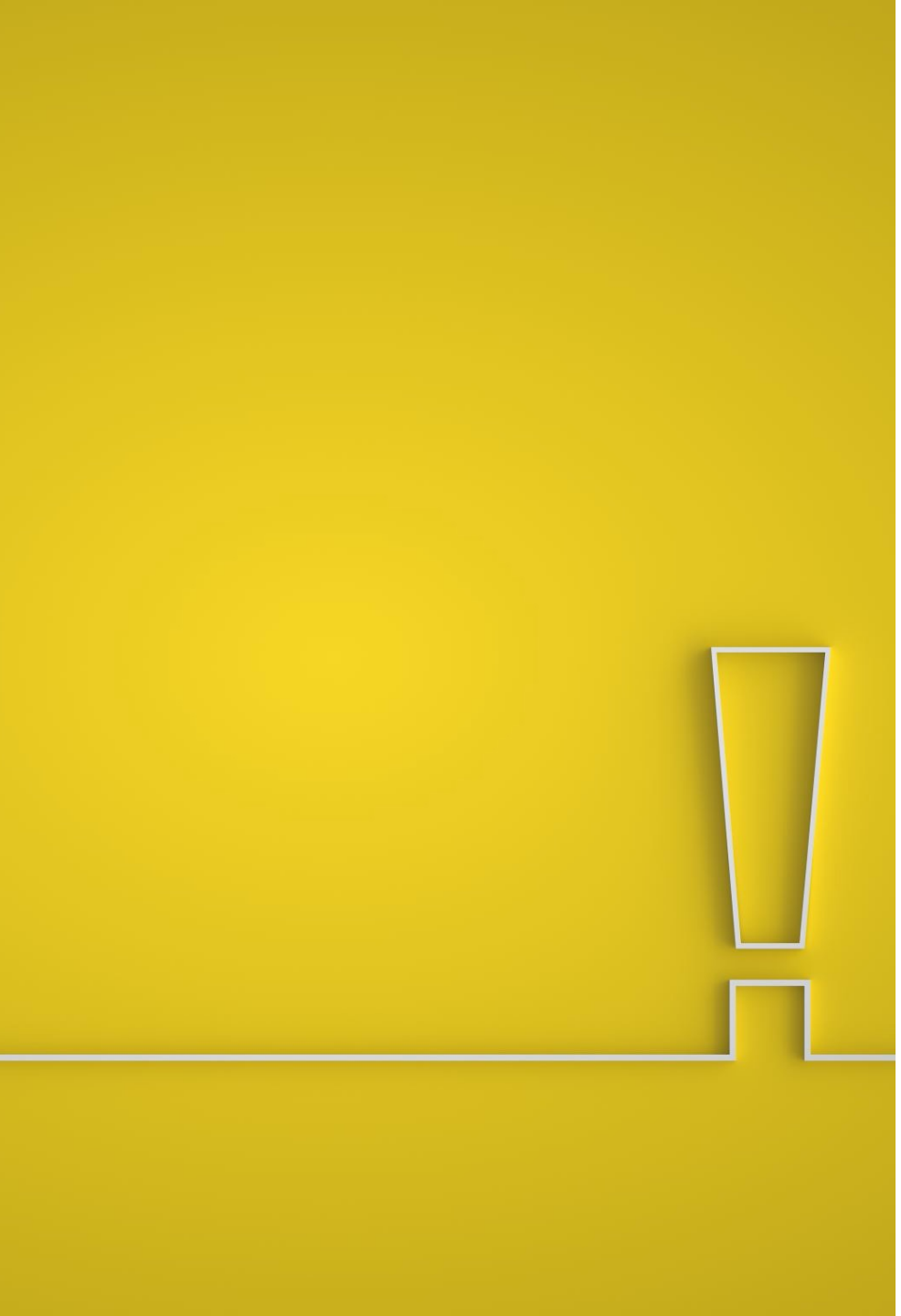
COST SAVINGS

IMPROVED PLANNING

DATA-DRIVEN DECISION MAKING

INCREASED OPERATIONAL EFFICIENCY

ENHANCED PREDICTIVE ACCURACY



CITATIONS

All in text citations, citations for code, and citations for content are included in the D214 Performance Assessment Task 3 PDF report attached to the submission.


THANK YOU