**SAVILL ANALYTICS EXCEL PROJECT**

**Introduction**

XYZ Production company observed recently that they aren’t satisfying their customers as before due to a low supply of original raw materials. A team was formed to probe the situation and come up with recommendations to see how they can optimize their production, as customer patronage is declining gradually, and it is detrimental to the business's survival. This comprehensive supply chain dataset contains defect quantity, unit prices, and downtime caused by various vendors across the existing plant locations. It also contains various categories of these materials.

**Objective:**

* To analyze this supply chain dataset and extract insights regarding vendor performance regarding delaying of raw material supply that is impacting the business operation and to what extent. Focus can also be on which product has a huge impact after which you can share your recommendations on what the business can do to improve its operations and achieve its target objectives.

**Analytics Tool Required:**

* Excel

**Description**

The dataset provided for this analysis has 4 sheets namely:

1. Supplier Quality
2. Material Type
3. Defect Type
4. Defect

**First Table:** Supplier Quality

|  |  |
| --- | --- |
| **Columns** | **Description** |
| Date | Date Vendor supplied defective raw material |
| Vendor | Name of the vendor supplying the raw material |
| Plant Location | Where production operation is taking place |
| Category | Various business operation units utilizing the raw materials |
| MaterialID | A unique identifier for the material being used for production |
| Defect Type ID | A unique identifier for defect type for the materials supplied |
| Defect ID | A unique identifier for the name of the defect that affected the raw materials supplied |
| Total Defect Qty | The total number of materials were defective and couldn’t be used for production |
| Total Downtime Minutes | The number of minutes when production operation wasn’t running due to defective raw materials supplied by the vendor |

**Second Table:** Material Type

|  |  |
| --- | --- |
| **Columns** | **Description** |
| Material Type | The name of the raw material type supplier for production |
| ID | A unique identifier for the type of material |

**Third Table:** Defect Type

|  |  |
| --- | --- |
| **Columns** | **Description** |
| Defect Type | Category of names of various defect type that impacted production |
| ID | A unique identifier for the kind of defect type that exists in the business |

### 

**Third Table:** Defect

|  |  |
| --- | --- |
| **Columns** | **Description** |
| Defect | What went wrong with the raw material and made it defective |
| ID | A unique identifier for the kind of name of defect for raw materials |

**Click “Dataset” to access the Data**: [Dataset](https://savillanalytics-my.sharepoint.com/:x:/p/upskill/EbwHWE0WGVBPlDdYAqKJxnkB6OKjmQ48ybYwlWqhwqD9Lg?e=oXCOVF)

### **Data Manipulation:**

1. **Data Cleaning:** Inspect the dataset for inconsistencies or errors and clean the data as necessary to ensure accuracy and reliability in the analysis.
2. Convert minutes to hours for further analysis
3. Use any lookup function to bring all needed columns into a sheet for deep analysis

**PROJECT ANALYSIS**

**1. Vendor Performance Analysis**

1. Which vendor is affecting production majorly
2. Top and Bottom 10 vendors having the highest downtime
3. Which vendor has the highest defective raw materials being supplied
4. Which vendor has the highest cost implications
5. Which vendor has more downtime, and which category is the item

**2. Material Analysis**

1. What materials is having a huge impact on production
2. Of what quantity are these materials affecting production
3. What is the trend pattern of the materials being defected
4. Is there any particular category that seems to consistently face more defects than others?

**3.Defect Type Analysis**

1. What is the quantity distribution of the defect type
2. What downtime hours each type in this category

**4. Defect Analysis**

1. Which defect has the highest quantity affecting production

2. What is the top defect trending that the business should focus on

**DASHBOARD**

1. Build a comprehensive dashboard that consolidates all the key metrics, KPIs, and Insights. This dashboard should serve as a decision-making tool for the top management to know how to handle their vendor and reduce production downtime.
2. Share your recommendations on how the business can optimize its production and achieve its objectives

**Deliverable**: Write an Executive summary/well-detailed report which should be documented on Medium for your analysis. You can also post on Linkedin to attract opportunities