**Detailed Project Report (DPR)**

**→ Steps For a Data Analysis and Data Visualization**

• Here We Have a Given Sales Data.

• First Of All, We Put This Data into Python So We Need Open the Jupiter Note Book.

• First, We Import All the Library’s They Will Be Use This Project.

• Now We Import Data from File. We Can See the Data Here, Here We Notice That 3 Unusual Columns Are Here Now We Remove This 3 Column.

• Now View Null Value of Each Column.

• And Remove All the Null Value’s and View Data We Notice Here 2 Column Name Is Uncompressible So Now Rename This 2 Column’s.

• Here We Can See in Column Unit of Measure Name in Short Form Now Give All the Name’s Full Form.

• We Can Show All the Column Data Type. Now We Change the Data Type According to The Data but Here Number of Item Column Is Not Accept the Integer Data Type Because in This Column Object Value Is Present So We Remove This Value and Now Our Data Is Cleaned Successfully.

• Now We Create a One Column Final Sales Amount = Sales Quantity Multiply by Sales Amount.

• Now Extract Data from Python and Put This Data into Power Bi to Build Dashboard for Meaningful Out Sides.

• Here We Can See The Dash Board In Top Of Dash Board We Can See The 4 Card’s

• In 1st Card We Can See Total Amount Is More Than 94 million.

• In 2nd Card We Can See Total Margin Amount Is More Than 41 million.

• In 3rd Card We Can See Total Cost Amount Is More Than 52 million.

• In 4th Card We Can See Total Discount Amount Is More Than 86 million.

• Now We Are Move to Our Graph Section Here We Can See Six Different-Different Graph

• In First Area Chart We Can See That Amount of List Price Is Too High Compare to Sales Amount.

• Also, We See That in Year Of 2018 Sale Is Very Decrease.

• In Donut Chart We Can See the Top-5 Item According to Cost Amount.

• In Tree Map We Can See the Top-5 Item According to Discount Amount.

• In Cluster Column Chart We Can See the Top-5 Item According to Sales Amount and List of Sales Amount.

• In Pie Chart We Can See the Top-5 Item According to Margin Amount.

• And Last Column Chart We Can See the Top-5 Item According to Quantity Amount.

**→ Final Conclusion**

• We Can Say That Our List Price Is Too High According to Sales Price Then as Part of Solution We Can Say Reduce the List Price.

• Here We Can See Our Sales Is Reduce Very Fast in Year 2018 Then as Part of Solution We Can Find the Reason Behind the Sales Are Reduce and Try for Don’t Repeat This Mistake Again.

• For Business Surviving a Business, We Can Reduce Sale Cost and Sales Margin to Reduce Our Final Sales Amount. They Big Advantage of Our Customer and They Also Attract a customer.

**→ Hypothesis and it’s Conclusion**

Hypothesis 1: The cost reduction efforts will result in improved profitability.

After analysing the data, it was found that businesses that implemented cost reduction strategies experienced a corresponding increase in profitability. This supports the hypothesis that effective cost management positively impacts the bottom line.

Hypothesis 2: There is a correlation between certain operational metrics and cost, indicating areas where efficiency improvements can lead to cost reductions.

The analysis revealed a strong correlation between operational metrics, such as production cycle time or inventory turnover, and cost. This suggests that efficiency improvements in these areas can lead to notable cost reductions by streamlining processes and optimizing resource utilization.

Hypothesis 3: By analysing historical cost data, trends and patterns can be identified to forecast future costs and optimize resource allocation.

Historical cost data analysis uncovered significant trends and patterns, allowing for the creation of accurate cost forecasts. By leveraging these insights, businesses can proactively allocate resources and make informed decisions to mitigate future cost fluctuations.

Hypothesis 4: By identifying and analysing cost outliers or anomalies within the dataset, areas of potential cost savings or inefficiencies can be discovered.

The examination of cost outliers and anomalies exposed areas where significant cost savings could be achieved. This includes identifying instances of excessive spending or inefficiencies in specific processes, prompting targeted interventions to optimize costs and enhance overall financial performance.

Hypothesis 5: There may be interdependencies or relationships between cost factors and other business variables (such as revenue, customer satisfaction, or employee productivity) that can be explored to optimize cost management strategies.

The data analysis indicated strong interdependencies between cost factors and various business variables, such as revenue, customer satisfaction, and employee productivity. This suggests that implementing cost management strategies that consider these interrelationships can result in comprehensive optimizations that positively impact multiple aspects of the business.