**Product Performance Analysis Dashboard:**

**Chart 1: Revenue Dominance**

* Skincare is the clear revenue leader, significantly outperforming Haircare and Cosmetics, which contribute similar, substantial portions.

**Chart 2: Average Revenue / Category**

* Cosmetics yield the highest average revenue per sale, followed by Skincare, with Haircare generating the least per transaction.

**Chart 3: Products Sold vs Price Range**

* Sales are concentrated at the lowest ($0-9) and highest ($90-99) price points, with a secondary peak in the $60-69 range and a notable dip in mid-range sales.

**Chart 4: Products Sold vs Availability**

* Inventory levels do not show a direct correlation with sales performance. High or low stock doesn't guarantee high or low sales.

**Chart 5: Top 10 SKU Stock-to-Sales / Order Quantity**

* + SKU2: High stock, high demand.
  + SKU5: Balanced stock and demand.
  + SKU70: Overstocked relative to low demand.
  + SKU56: High demand with limited stock.
  + Low stock-to-sales SKUs (e.g., SKU97, SKU48) also have low demand.
  + Some good sellers (e.g., SKU3, SKU33, SKU6, SKU17) have tight stock levels.

**Chart 6: Bottom 10 SKU Stock-to-Sales / Order Quantity**

* Most bottom-performing SKUs sell through their limited stock quickly. Demand varies, with some having very low orders and others maintaining relatively higher sales despite scarcity.

**Chart 7: Top 5 % Revenue vs. % Sold SKU**

* SKU2, SKU31, SKU38, and SKU90 are high-value products, generating disproportionately high revenue compared to their sales volume. SKU51's revenue contribution aligns with its sales share. SKU31 and SKU51 have particularly high value per unit.

**Chart 8: Bottom 5 % Revenue vs. % Sold SKU**

* The bottom 5 SKUs are low-value products, contributing minimal revenue despite a higher percentage of total units sold. SKU78 is a high-volume, low-value item.

**Chart 9: Top 5 % Selling vs. % Revenue**

* SKU9, SKU10, SKU36, and SKU37 are high-volume, lower-value products. SKU94 is a higher-value product among the top sellers.

**Chart 10: Bottom 5 % Selling vs. % Revenue**

* The bottom 5 selling SKUs are low-volume, high-value products, generating a surprisingly large portion of revenue despite minimal sales.

**Customer Demographic Dashboard:**

**Chart 1: Revenue Distribution by Gender**

* Unidentified customers are the top revenue source (30%), followed by females (28%), males (21.9%), and non-binary individuals (20.1%).

**Chart 2: Total Revenue vs. Products Sold per Gender**

* While 'Unknown' customers generate the highest revenue and purchase a significant number of products, females buy the most products and contribute the second-highest revenue. Males have the lowest purchase volume and revenue. Non-binary customers buy a moderate amount but generate the least revenue.

**Chart 3: Gender vs. Product Type vs. Location for Revenue Generation**

* Skincare consistently drives strong revenue across most genders and locations. Cosmetics are also a key revenue generator, particularly for females and the 'Unknown' gender. Haircare generally underperforms compared to Skincare and Cosmetics across segments.

**Chart 4: Number of Products Sold per Gender Across Different Price Ranges**

* Females and 'Unknown' customers favor the cheapest and most expensive items. Males prefer mid to higher price points. Non-binary customers show varied preferences with lower engagement in the highest range.

**Chart 5: Quantity of Sold Products by Gender for Different Categories**

* Skincare is the top-selling category for all specified genders. Females are the highest overall purchasers, with strong interest in Skincare and Cosmetics. 'Unknown' customers surprisingly lead in Haircare purchases.

**Supplier and Manufacturing Analysis**

**Chart 1: Top-Selling Suppliers by Percentage**

* Suppliers 1 and 2 are the dominant players, each commanding 24% of sales, followed by Supplier 5 (18.8%), Supplier 3 (17.5%), and Supplier 4 (15.6%).

**Chart 2: Revenue by Supplier**

* Supplier 1 generates the highest revenue (27.3%), followed by Supplier 2 (21.7%) and Supplier 5 (19.1%). Supplier 4 contributes the least revenue among the top 5 (15.0%).

**Chart 3: Average Number of Products Sold by Supplier and Product Type**

* Supplier 2 leads in average sales for Cosmetics and Skincare. Supplier 5 excels in Haircare sales. Category performance varies significantly by supplier.

**Chart 4: Average Percentage Net Profit Margin per Supplier for Different Product Types**

* Profit margins are highly variable across suppliers and product types. Supplier 1 shows an exceptional Haircare margin (outlier). Excluding this, Supplier 5 leads in Cosmetics, Supplier 4 in Haircare, and Supplier 3 in Skincare.

**Chart 5: Product Volume vs. Supplier and Location**

* Supplier 1 has high Cosmetics and Skincare volume in multiple cities. Supplier 5 shows strong Skincare volume in several locations and Haircare in Kolkata. Supplier 2 has a strong Skincare presence in Chennai and Cosmetics in Mumbai. Supplier 3 generally has lower volume.

**Chart 6: Average Lead Time (in days) by Supplier for Different Product Types**

* Cosmetics have the fastest lead times across suppliers. Skincare lead times are the most variable, with Supplier 3 being significantly slower. Haircare lead times are generally consistent and moderate.

**Chart 7: Average Manufacturing Cost vs. Average Lead Time by Supplier for Different Product Types**

* Higher manufacturing costs don't consistently guarantee shorter lead times. For Cosmetics and possibly Skincare, lower costs appear linked to longer lead times for some suppliers.

**Chart 8: Average Production Volume per City for Different Suppliers**

* Chennai and Kolkata have the highest overall production volume, with Supplier 3 leading in Chennai and Suppliers 4 & 5 in Kolkata. Bangalore has the lowest overall production. Supplier production is concentrated in specific cities.

**Chart 9: Manufacturing Time vs. Production Volume**

* There's no clear relationship between manufacturing time and production volume. Short or long manufacturing times don't reliably predict high or low production volumes.

**Logistics and Shipping Analysis Dashboard**

**Chart 1: Most Commonly Used Shipping Methods**

* Road (29%) and Rail (28%) are the primary shipping methods, followed by Air (26%), with Sea (17%) being the least utilized.

**Chart 2: Most Commonly Used Carriers**

* Carrier B (43%) is the preferred choice, followed by Carrier C (29%), and Carrier A (28%).

**Chart 3: Most Commonly Used Carrier per Product Type**

* Carrier B is favored for Cosmetics and especially Haircare. Skincare utilizes all three carriers with similar frequency.

**Chart 4: Most Commonly Used Carrier per Location**

* Carrier B is the most frequent choice across all locations. Carrier C often ranks second, while Carrier A is generally the least used.

**Chart 5: Most Commonly Used Carrier by Transportation Mode**

* Carrier B is dominant for Air and Rail. Road utilizes Carriers B and A equally. Sea primarily relies on Carrier C.

**Chart 6: Average Carrier Shipping Cost by Transportation Mode**

* Shipping costs vary by carrier and mode. Carrier B is pricier for Road and Sea, Carrier A for Rail, and Carrier C for Air.

**Chart 7: Average Carrier Shipping Time by Transportation Mode**

* Carrier B generally offers the fastest shipping for Air, Rail, and Road. Carrier A is quickest for Sea.

**Chart 8: Average Shipping Times vs. Average Shipping Costs per Carrier**

* Carrier B provides the best balance of speed and cost. Carrier A is the slowest, while Carrier C offers moderate speed at a similar cost to A.

**Chart 9: Average Shipping Times vs. Average Shipping Costs per Transportation Method**

* Road is fastest but not cheapest. Air is fast but most expensive. Rail is slower and cost-effective. Sea is slowest and cheapest.

**Chart 10: Average Shipping Times vs. Average Shipping Costs per Location**

* Bangalore has the fastest shipping. Mumbai is the most expensive. Chennai is cheapest but slowest. Kolkata has long shipping times and higher costs than Chennai.

**Chart 11: Average Shipping Time of Each Carrier by Transportation Mode and Location**

* Air is generally fastest, with Carrier B often leading. Rail can be very slow in some cases. Road is consistently quick, often with Carrier B. Sea is slowest but varies by carrier and city.

Here are the rephrased insights for the Quality Analysis Dashboard:

**Quality Analysis Dashboard**

**Chart 1: Inspection Results**

* A significant portion of inspections are pending (41%), with over a third failing (36%) and less than a quarter passing (23%).

**Chart 2: Average Defect Rates vs. Average Production Volume**

* No clear correlation exists between average defect rates and production volume. Defect frequency appears independent of production scale.

**Chart 3: Percentage of Inspection Results by Supplier and Product Category**

* Inspection outcomes are highly variable by supplier and product. Supplier 3 shows strong pass rates (potentially low volume), while Supplier 2 has high failure rates in Cosmetics. Pending inspections are notable for some suppliers and categories.

**Chart 4: Average Defect Rates vs. Average Revenue per Piece by Supplier and Product Category**

* Higher priced items don't necessarily have more defects. Supplier 1's high-revenue Haircare stands out. Some suppliers achieve high revenue with low defects in Cosmetics and Skincare.

**Chart 5: Average Defect Rates by Supplier and Product Type**

* Defect rates vary significantly by supplier and product. Supplier 5 generally has higher defects in Haircare and Skincare, while Supplier 3 has high defects in Cosmetics but low in Haircare. Supplier 1 tends to have lower defect rates overall.

**Chart 6: Average Defect Rates by Location and Product Type**

* Chennai has a specific issue with high Haircare defects. Cosmetics generally have low defects across all locations. Skincare defect rates are moderate with a slight increase in Delhi.

**Chart 7: Average Defect Rates vs. Average Manufacturing Cost by Location**

* Mumbai achieves low defects with the lowest costs. Bangalore has the lowest defects but highest costs. Chennai has the worst combination: high defects and high costs.

**Chart 8: Average Defect Rates vs. Average Manufacturing Cost by Supplier**

* Supplier 1 offers the best quality at a reasonable cost. Supplier 4 has the highest cost without the best quality. Supplier 5 has the worst quality at a moderate cost.

**Chart 9: Average Defect Rates vs. Average Manufacturing Cost by Product Type**

* Cosmetics are cheapest and have fewest defects. Skincare is most expensive with moderate defects. Haircare has most defects at a moderate cost.

**Chart 10: Average Defect Rate by Supplier, Product Type, and Location**

* High defect hotspots include Supplier 2's Haircare in Chennai and Supplier 5's Skincare in Kolkata. Supplier 3 generally shows good quality. Chennai struggles with Skincare quality across suppliers. Cosmetics generally have lower defects. Specific high-defect combinations exist.