**SUPPLY CHAIN PROJECT REPORT**

**1. Executive Summary**

The supply chain project aims to analyze key performance metrics such as revenue, profit margins, stock levels, supplier efficiency, and transportation costs. This report presents data-driven insights and recommendations to improve supply chain efficiency and profitability.

**2. Key Metrics Overview**

* **Total Revenue:** $578K
* **Average Profit Margin:** 86.07%
* **Total Products Sold:** 46.1K units
* **Stock Level:** 5K units
* **Order Quantity:** 5K units

**3. Sales & Revenue Analysis**

**3.1 Revenue by Product Type**

| **Product Type** | **Revenue ($)** | **Defect Rate (%)** |
| --- | --- | --- |
| Skincare | 248.3K | 36.8% |
| Haircare | 233.46K | 34.65% |
| Cosmetics | 191.92K | 28.49% |

**Insight:** Skincare generates the highest revenue but has the highest defect rate.

**4. Supplier Performance**

**4.1 Profitability & Stock Levels**

| **Supplier** | **Avg Profit Margin (%)** | **Stock Levels** |
| --- | --- | --- |
| Supplier 1 | 22.72% | 1142 |
| Supplier 2 | 19.19% | 1022 |
| Supplier 3 | 13.66% | 654 |
| Supplier 4 | 15.14% | 1061 |
| Supplier 5 | 15.35% | 898 |

**Insight:** Supplier 1 provides the highest profitability, while Supplier 3 has the lowest stock availability.

**5. Logistics & Transportation Analysis**

**5.1 Transportation Costs**

| **Mode** | **Cost ($)** | **Percentage** |
| --- | --- | --- |
| Road | 17.76K | 30.52% |
| Rail | 16.71K | 28.71% |
| Air | 7.87K | 13.52% |
| Sea | 15.86K | 27.25% |

**Insight:** Road transport has the highest costs, requiring optimization.

**5.2 Defect Rates by Transportation Mode**

| **Mode** | **Defect Rate (%)** |
| --- | --- |
| Road | 28.87% |
| Rail | 25.54% |
| Air | 20.09% |
| Sea | 25.50% |

**Insight:** Air transport has the lowest defect rate but may be costlier.

**6. Recommendations**

1. **Reduce Defect Rates** - Implement strict quality control in skincare and haircare products.
2. **Supplier Optimization** - Prioritize Supplier 1 for higher profit margins.
3. **Logistics Cost Reduction** - Optimize routes to reduce reliance on high-cost road transport.
4. **Inventory Management** - Increase stock levels for frequently out-of-stock SKUs.

**7. Conclusion**

This report highlights areas for improvement in supplier performance, logistics efficiency, and product quality. Implementing these recommendations can enhance supply chain profitability and efficiency.

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