**Project Title:** Delivery Logistics Performance Dashboard

**Overview:** This project focuses on analyzing and visualizing delivery logistics performance across cities and partners to identify bottlenecks, inefficiencies, and areas of improvement in the supply chain. It includes SQL-based data extraction, Excel formatting, and a fully interactive Power BI dashboard.

**Objectives:**

* Track and analyze average delivery and shipping times
* Measure failed delivery percentage by city
* Compare partner shipping efficiency
* Study the relationship between delivery distance and delivery time
* Visualize city-wise performance on a map

**Tools Used:**

* **SQL** – Data extraction and metric calculation
* **Microsoft Excel** – Intermediate formatting and storage
* **Power BI** – Dashboard creation and data visualization

**Data Model:**

* **Orders Table**: Contains order\_id, customer\_id, status, order\_date, delivery\_date
* **Shipping Table**: Contains shipping\_id, partner\_id, shipped\_date, delivered\_date, distance\_km
* **Locations Table**: Contains location\_id, city
* **Partners Table**: Contains partner\_id, partner\_name

**Key SQL Queries:**

1. **Average Delivery Days by City**

SELECT l.city, ROUND(AVG(DATEDIFF(o.delivery\_date, o.order\_date)), 2) AS avg\_delivery\_days

FROM orders o

JOIN locations l ON o.customer\_id = l.location\_id

WHERE o.status = 'Delivered'

GROUP BY l.city;

1. **Failed Delivery Percentage by City**

SELECT l.city, COUNT(CASE WHEN o.status = 'Failed' THEN 1 END) \* 100.0 / COUNT(\*) AS failed\_delivery\_pct

FROM orders o

JOIN locations l ON o.customer\_id = l.location\_id

GROUP BY l.city;

1. **Average Shipping Time by Partner**

SELECT p.partner\_name, ROUND(AVG(DATEDIFF(s.delivered\_date, s.shipped\_date)), 2) AS avg\_shipping\_days

FROM shipping s

JOIN partners p ON s.partner\_id = p.partner\_id

JOIN orders o ON o.shipping\_id = s.shipping\_id

WHERE o.status = 'Delivered'

GROUP BY p.partner\_name;

1. **Distance vs Delivery Days**

SELECT s.distance\_km, DATEDIFF(o.delivery\_date, o.order\_date) AS delivery\_days

FROM shipping s

JOIN orders o ON o.shipping\_id = s.shipping\_id

WHERE o.status = 'Delivered';

**Dashboard Features:**

* **KPI Cards**: Average Delivery Days, Average Shipping Days, Overall Failed Delivery %
* **Bar Charts**: Avg Delivery Days by City, Failed Delivery % by City, Avg Shipping Days by Partner
* **Scatter Plot**: Distance vs Delivery Days
* **Map Visual**: City-wise average delivery time using color-coded bubbles
* **Filters**: City and Partner slicers for interactive exploration

**Key Insights:**

* Avg delivery time is 18 days; shipping takes 12 days
* Failed delivery rate is 20%, highlighting areas for improvement
* City-wise delivery times vary, suggesting regional inefficiencies
* XpressBees shows the fastest shipping performance
* Delivery delays are not solely distance-based, pointing to operational issues

**Conclusion:** This dashboard provides a comprehensive view of logistics performance, enabling data-driven decision-making for optimizing delivery routes, improving partner selection, and reducing failure rates.

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