

## Delivery Analytics Project – Analytical Thought Process

### 1. Project Objective

The primary goal of this analysis was to understand delivery performance and identify patterns contributing to delivery delays. The project focuses on uncovering inefficiencies across couriers, cities, zones, product categories, and time periods to support operational improvements and better logistics planning.

### 2. Analytical Approach

The analysis followed a structured, step-by-step approach:

- Understand business problem and delivery KPIs
- Clean and standardize raw shipment data
- Define meaningful performance metrics
- Analyze trends across multiple dimensions
- Translate insights into business recommendations

### 3. Key Metrics Considered

Metric	Definition	Why It Matters	Business Impact
Average Delay (Days)	Mean number of delayed days per delivery	Quantifies overall delivery performance	Helps identify inefficiencies and SLA violations
Courier-wise Delay	Average delay grouped by courier partner	Compares operational efficiency of couriers	Supports data-driven courier selection
City-wise Delay	Average delay per destination city	Highlights location-based logistics challenges	Enables city-specific delivery strategies
Zone-wise Delay	Average delay across geographic zones	Identifies regional bottlenecks	Supports zone-level capacity planning
Category-wise Delay	Average delay per product category	Shows impact of handling complexity	Guides category-specific logistics workflows
Monthly Delay Trend	Average delay aggregated by month	Reveals seasonality and demand spikes	Enables proactive scaling during peak periods

#### **4. Insights Development**

Each metric was analyzed independently and then correlated across dimensions to understand compound effects. For example, courier performance was examined within high-delay cities and during peak months to identify root causes rather than surface-level issues.

#### **5. Decision-Oriented Thinking**

Instead of stopping at descriptive statistics, the analysis focused on answering business-driven questions such as:

- Which couriers consistently underperform?
- Where should logistics capacity be improved?
- Which product categories need special handling workflows?
- How does seasonality affect delivery reliability?

#### **6. Outcome & Value**

The project demonstrates a problem-solving mindset where data is used not just to generate charts, but to influence operational decisions. The structured metrics and insights enable stakeholders to reduce delays, improve customer satisfaction, and optimize logistics efficiency.