

Porter Delivery Performance Analysis

Objective

This project focuses on analyzing a **logistics platform** to uncover patterns in **order volume, revenue generation, and operational efficiency**. The goal is to derive data-driven insights that can help optimize delivery performance, improve partner allocation, and enhance customer experience.

Project Overview

The analysis was conducted on ~197K delivery records to understand customer ordering behavior, operational efficiency, and delivery performance. The goal was to generate actionable insights to improve delivery time, partner allocation, and revenue optimization.

Key analytical phases:

- 1. **Data Cleaning & Preparation** – Handled missing values (~8%), standardized time formats, created derived metrics
- 2. **Exploratory Data Analysis (EDA)** – Explored order trends, partner activity, revenue drivers, and delivery performance.
- 3. **Outliers Handling** – visualize outliers using box plot, use cap & floor method to handle outliers

Key Insights

Area	Observations
Demand & Revenue Patterns	Order volume and revenue peak during weekends , crossing ₹90 lakhs , indicating strong weekend demand.
Category Performance	The Top 10 store categories drive 55% of total orders , suggesting a concentration of demand in limited segments.
Ordering Behavior	Around 95% of customers order less than 10 items , and 75% orders are less than 3 distinct items , indicating predominantly small, frequent orders.
Time-Based Trends	12 PM – 4 PM shows the highest order traffic , aligning with lunch-time and afternoon peaks. The 3rd week of the month has comparatively low activity.
Protocol Performance	Protocols 1, 3, and 5 account for ~75% of all orders and top 3 revenue share , while Protocol 7 delivers the fastest average delivery time and Protocol 6 is the slowest.
Market Analysis	Market IDs 2, 4, and 1 generate the majority of total revenue , indicating higher customer engagement or operational scale in these regions.

Business Recommendations

1. **Resource Planning:**
 - Increase on-shift partner count during **weekends** and **12 PM–4 PM** to meet peak demand without compromising delivery speed.
 - Run promotional campaigns during the **3rd week of the month** to balance demand cycles.
 2. **Category Strategy:**
 - Strengthen relationships with **Top 10 high-volume categories**, introduce loyalty or bundle offers to retain this core segment.
 3. **Protocol Optimization:**
 - Analyze operational processes behind **Protocol 7's fast deliveries** and standardize them across other protocols.
 - Investigate delays in **Protocol 6** and redesign workflows or partner routing logic.
 4. **Market Expansion:**
 - Benchmark performance of **Markets 2, 4, and 1**, replicate their strategies (pricing, availability, logistics) in lower-performing markets.
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