

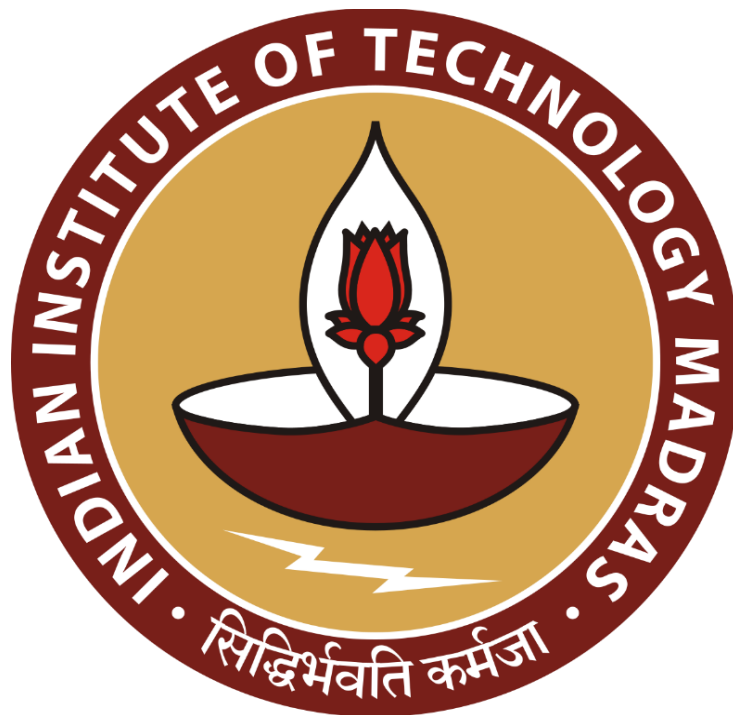
# **Title: Enhancing Operational Efficiency and Revenue Analysis: A Data-Driven Study for DTDC Courier Franchise Services**

**A Mid-Term report for the BDM capstone Project**

Submitted by

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# 1 Executive Summary

DTDC Courier Franchise Services in Sharda Nagar, Kanpur, has been a local logistics provider since 1997, handling a mix of business and consumer deliveries. Despite operating for decades, the franchise faces three key operational inefficiencies: lack of clarity in regional revenue trends, high parcel return rates, and frequent delivery delays due to inefficient routing.

This project presents a data-driven analysis to address these challenges. Primary data collected directly from the franchise was analysed using Microsoft Excel. PivotTables, COUNTIF/AVERAGEIF functions, and visual tools such as charts and conditional formatting were employed to uncover trends and patterns.

The goal of this mid-term report is to present the findings from the initial phase of the analysis, highlight key operational inefficiencies, and provide data-backed insights into where and why the franchise is experiencing financial and service-related setbacks. This forms the foundation for actionable strategies in the final phase of the project.

Key goals of this report are:

- Identify revenue trends across delivery regions to support data-driven resource allocation and improve operational planning.
- Analyse parcel return rates and reasons to identify problem areas in service or customer experience and reduce the volume of returns.
- Evaluate delivery time patterns and locate delay-prone areas to recommend more efficient routing solutions.
- Provide visual insights and summaries using Excel tools for clear decision-making.

These objectives are aligned with improving the overall efficiency, customer service, and financial performance of the franchise.

# 2 Proof of Originality of Data

- **Details of the Business:**

**Owner:** Shailendra Nath Bajpai

Address: Sharda Nagar, Kanpur, Uttar Pradesh 208025

- Photographs of the Office:



Figure 2.1: Outside & Inside View of the Office

- Photographs of the PODs (Proof of Delivery):

DTDC Express Limited regd Office: No-3, Victoria Road Bengaluru - 560047		ORIGIN	DEST.
Non Negotiable Consignment Note / Subject to Bengaluru Jurisdiction		POUCH NO.	DATE
Sender's (Consignor) Name: _____ Ph: _____		Recipient's (Consignee) Name: _____ Ph: _____	
Company Name & Address: <u>Shubh K...</u>		Company Name & Address: <u>U...</u>	
City: _____ State: _____ PIN Code: _____		City: _____ State: _____ PIN Code: _____	
Sender's GSTIN*: _____		Recipient's GSTIN*: _____	
3 Nature of consignment (✓) <input checked="" type="checkbox"/> Dox <input type="checkbox"/> Non-Dox <input type="checkbox"/> Total Num Pcs: _____		4 Description of Content _____	
DIM 1: L cm X B cm X H cm X Pcs Actual Wt.: _____ kg		5 Value Added Services <input type="checkbox"/> Not Available <input type="checkbox"/> CN Expiry Date _____	
DIM 2: L cm X B cm X H cm X Pcs Volumetric Wt.: _____ kg		6 Type of consignment (✓) <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Non Commercial <input type="checkbox"/>	
DIM 3: L cm X B cm X H cm X Pcs Chargeable Wt.: _____ kg		7 Mode (✓) <input checked="" type="checkbox"/> Surface <input type="checkbox"/> Air Cargo <input type="checkbox"/> Express <input type="checkbox"/>	
10 I/We declare that this consignment does not contain personal mail, cash, jewellery, contraband, illegal drugs, any prohibited items and commodities which can cause safety hazards while transporting		8 Consignment Number: <u>U32167717</u>	
9 Charges Amount(₹) _____		11 Booking Branch / Franchisee Code _____	
a) Tariff (incl. DI PSC + Taxes)		12 Risk Surcharge _____	
b) Risk Surcharge _____		Owner _____	
c) Total amount (a+b) _____		Carrier _____	
d) Total amount (a+b+c) _____		ACCOUNTS COPY	
Sender's Signature & Seal _____		Jan. 2024	
Date: _____ Time: AM/PM _____			
I have read and understood terms & conditions printed overleaf of this consignment note and I agree to the same.			
http://www.dtdc.in    customersupport@dtcd.com    +91-9606 911 811			

Figure 2.2: Bill of service type - Standard

<b>DTDC Express Limited</b> R. Office: No-3, Victoria Road Bengaluru - 560047		<b>ORIGIN</b> K.R.	<b>DEST</b> M.D.	<b>POUCH NO.</b> 1.10.24	<b>DATE</b> 1.10.24	Download MyDTDC app 
Non Negotiable Consignment Note / Subject to Bengaluru Jurisdiction.						
<b>1</b> Sender's (Consignor) Name: P. D. Muthu Company Name & Address: City: State: PIN Code:		<b>2</b> Recipient's (Consignee) Name: P. D. Muthu Company Name & Address: City: State: PIN Code:		The consignment note is not a tax invoice. A tax invoice will be made available by DTDC or its channel partner as the case may be, upon request.		
<b>3</b> Nature of consignment: <input checked="" type="checkbox"/> Dox <input type="checkbox"/> Non-Dox DIM 1: L cm X B cm X H cm X Pcs Actual Wt.: kg DIM 2: L cm X B cm X H cm X Pcs Volumetric Wt.: kg DIM 3: L cm X B cm X H cm X Pcs Chargeable Wt.: kg		<b>4</b> Description of Content:		Total Value of consignment for carriage / E-Way bill: ₹		
<b>5</b> Paper Work Enclosures		<b>6</b> Type of consignment: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Non Commercial		<b>7</b> Value Added Services: <input checked="" type="checkbox"/> Secure Pack <input type="checkbox"/> Passport <input type="checkbox"/> COO <input type="checkbox"/> Sunday <input type="checkbox"/> Office <input type="checkbox"/>		<b>CN Expiry Date</b>
<b>9</b> I/We declare that this consignment does not contain personal mail, cash, jewellery, contraband, illegal drugs, any prohibited items and commodities which can cause safety hazards while transporting.		<b>10</b> Charges: a) Tariff (incl. of FSC+GST) b) Value Added Service Charges c) Risk Surcharge d) Total amount (a+b+c)		<b>8</b> Mode: <input checked="" type="checkbox"/> Surface <input type="checkbox"/> Air cargo <input type="checkbox"/> Express		
<b>Sender's Signature &amp; Seal</b> Date: Time: AM/PM I have read and understood terms & conditions printed overleaf of this consignment note and agree to the same.		<b>11</b> Booking Branch / Franchisee Code:		<b>Consignment Number:</b> V85748810		
<b>12</b> Receiver's Name: Relationship: Company Stamp & Signature: Ph No.: Date: / / Time: AM/PM		<b>Courier Signature</b>		<b>Risk Surcharge</b>		
http://www.dtdc.in    customersupport@dtcd.com    +91-9606 911 811 ACCOUNTS COPY Jan. 2024						

Figure 2.3: Bill of service type - Express

<b>DTDC Express Limited</b> R. Office: No-3, Victoria Road Bengaluru - 560047		<b>ORIGIN</b> K.R.	<b>DEST</b> HOCHIMIN	<b>POUCH NO.</b> 5.10.24	<b>DATE</b> 5.10.24	Download MyDTDC app 
Non Negotiable Consignment Note / Subject to Bengaluru Jurisdiction.						
<b>1</b> Sender's (Consignor) Name: J. S. S. Company Name & Address: City: State: PIN Code:		<b>2</b> Recipient's (Consignee) Name: J. S. S. Company Name & Address: City: State: PIN Code:		The consignment note is not a tax invoice. A tax invoice will be made available by DTDC or its channel partner as the case may be, upon request.		
<b>3</b> Nature of consignment: <input checked="" type="checkbox"/> Dox <input type="checkbox"/> Non-Dox DIM 1: L cm X B cm X H cm X Pcs Actual Wt.: kg DIM 2: L cm X B cm X H cm X Pcs Volumetric Wt.: kg DIM 3: L cm X B cm X H cm X Pcs Chargeable Wt.: kg		<b>4</b> Description of Content:		Total Value of consignment for carriage / E-Way bill: ₹ 5000		
<b>5</b> Paper Work Enclosures		<b>6</b> Type of consignment: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Non Commercial		<b>7</b> Value Added Services: <input checked="" type="checkbox"/> SECURE PACK <input type="checkbox"/>		<b>CN Expiry Date</b>
<b>9</b> I/We declare that this consignment does not contain personal mail, cash, jewellery, contraband, illegal drugs, any prohibited items and commodities which can cause safety hazards while transporting.		<b>10</b> Charges: a) Tariff (incl. of FSC+GST) b) Value Added Service Charges c) Risk Surcharge d) Total amount (a+b+c)		<b>8</b> Mode: <input checked="" type="checkbox"/> Surface <input type="checkbox"/> Air Cargo <input type="checkbox"/> Express		
<b>Sender's Signature &amp; Seal</b> Date: Time: AM/PM I have read and understood terms & conditions printed overleaf of this consignment note and agree to the same.		<b>11</b> Booking Branch / Franchisee Code:		<b>Consignment Number:</b> D93994454		
<b>12</b> Receiver's Name: Relationship: Company Stamp & Signature: Ph No.: Date: / / Time: AM/PM		<b>Courier Signature</b>		<b>Risk Surcharge</b>		
http://www.dtdc.in    customersupport@dtcd.com    +91-9606 911 811 ACCOUNTS COPY Jan. 2024						

Figure 2.4: Bill of parcel weighing more than 5 kgs (Service type -Standard)



- **Letter from the Organisation:**

Date - 18<sup>th</sup> March, 2025

To,  
IIT Madras, BDN Team.

Subject - Authorization and Verification of Data Collection for Academic purposes.

This is to certify that Avishi Prasad, a student of the IITM Online BS Degree program, has collected primary data from DTDC courier franchise - Sharda Nagar, Kanpur as part of their Business Data Management Capstone Project.

We acknowledge that the data shared was solely for academic purposes and has been collected in compliance with confidentiality and ethical standards.

We hereby confirm that Avishi Prasad has been in contact with us for multiple discussions to understand the nature of our business and the challenges faced, which are being addressed through their project.

We extend our best wishes to Avishi Prasad for the successful completion of their project.

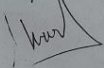
  
Signature  
Name: Shailendra Nath Bajpai  
Designation: Owner of DTDC Courier Franchise

Figure 2.5 Letter from the Organization

- **Link to a short video of one of the meetings with the owner:**

[https://drive.google.com/file/d/111IuY8SkkfM92orrKRYU6fe\\_WARGHXLx/view?usp=drive\\_link](https://drive.google.com/file/d/111IuY8SkkfM92orrKRYU6fe_WARGHXLx/view?usp=drive_link)

### 3 Metadata and Descriptive Statistics

The data was captured by manually entering the bills for the entire month of October 2024 into an Excel file over the course of three to four meetings. Here is a snapshot of the data:

Date of Transaction	Month of Transaction	Tracking Number	Service Type	Status	Transaction Amount	Sender's Location	Receiver's Location	Parcel weight	Parcel type	Date of Delivery	Date of Return
01-10-2024	October-2024	V85748809	Express	Delivered	₹ 680.00	Kanpur	Hyderabad	Less than 5 kgs	N.A.	03-10-2024	N.A.
01-10-2024	October-2024	V85748810	Express	Delivered	₹ 310.00	Kanpur	Delhi	Less than 5 kgs	N.A.	03-10-2024	N.A.
03-10-2024	October-2024	U32167711	Standard	Delivered	₹ 320.00	Kanpur	Ghaziabad	Less than 5 kgs	Eatables	07-10-2024	N.A.
03-10-2024	October-2024	U32167712	Standard	Returned	₹ 140.00	Kanpur	Noida	Less than 5 kgs	N.A.	15-10-2024	08-11-2024
03-10-2024	October-2024	U32167713	Standard	Delivered	₹ 150.00	Kanpur	Noida	Less than 5 kgs	N.A.	05-10-2024	N.A.
03-10-2024	October-2024	U32167714	Standard	Delivered	₹ 100.00	Kanpur	Lucknow	Less than 5 kgs	N.A.	05-10-2024	N.A.
03-10-2024	October-2024	U32167715	Standard	Delivered	₹ 350.00	Kanpur	Forbesganj	Less than 5 kgs	Clothes	05-10-2024	N.A.
03-10-2024	October-2024	U32167717	Standard	Delivered	₹ 230.00	Kanpur	Agra	Less than 5 kgs	N.A.	05-10-2024	N.A.
03-10-2024	October-2024	U32167718	Standard	Delivered	₹ 720.00	Kanpur	Mumbai	Less than 5 kgs	N.A.	07-10-2024	N.A.
03-10-2024	October-2024	U32167719	Standard	Delivered	₹ 90.00	Kanpur	Agra	Less than 5 kgs	N.A.	05-10-2024	N.A.
03-10-2024	October-2024	V85748812	Express	Delivered	₹ 270.00	Kanpur	Baharaich	Less than 5 kgs	N.A.	07-10-2024	N.A.
03-10-2024	October-2024	V85748813	Express	Delivered	₹ 500.00	Kanpur	Delhi	Less than 5 kgs	Passport	04-10-2024	N.A.
04-10-2024	October-2024	D93994451	Standard	Delivered	₹ 480.00	Kanpur	Lucknow	More than 5 kgs	Clothes	07-10-2024	N.A.
04-10-2024	October-2024	U32167716	Standard	Delivered	₹ 90.00	Kanpur	Lucknow	Less than 5 kgs	N.A.	07-10-2024	N.A.

Figure 3.1 Snapshot of the Data

The original data mainly contains the following details:

1. Date of Transaction
2. Tracking Number (U-series/ V-series/ D-series)
3. Service Type (Standard/Express)
4. Status (Delivered/Returned)
5. Transaction Amount
6. Sender's/Receiver's Location
7. Parcel Weight (Less/More than 5 kgs)
8. Parcel Type
9. Date of Delivery/Return

The following section presents the descriptive statistical analysis of the collected data using charts and graphs.

- Total number of parcels handled = 225
- Total revenue earned in October 2024 = Rs. 55095.00
- Total number of parcels returned = 2
- Revenue analysis by region:

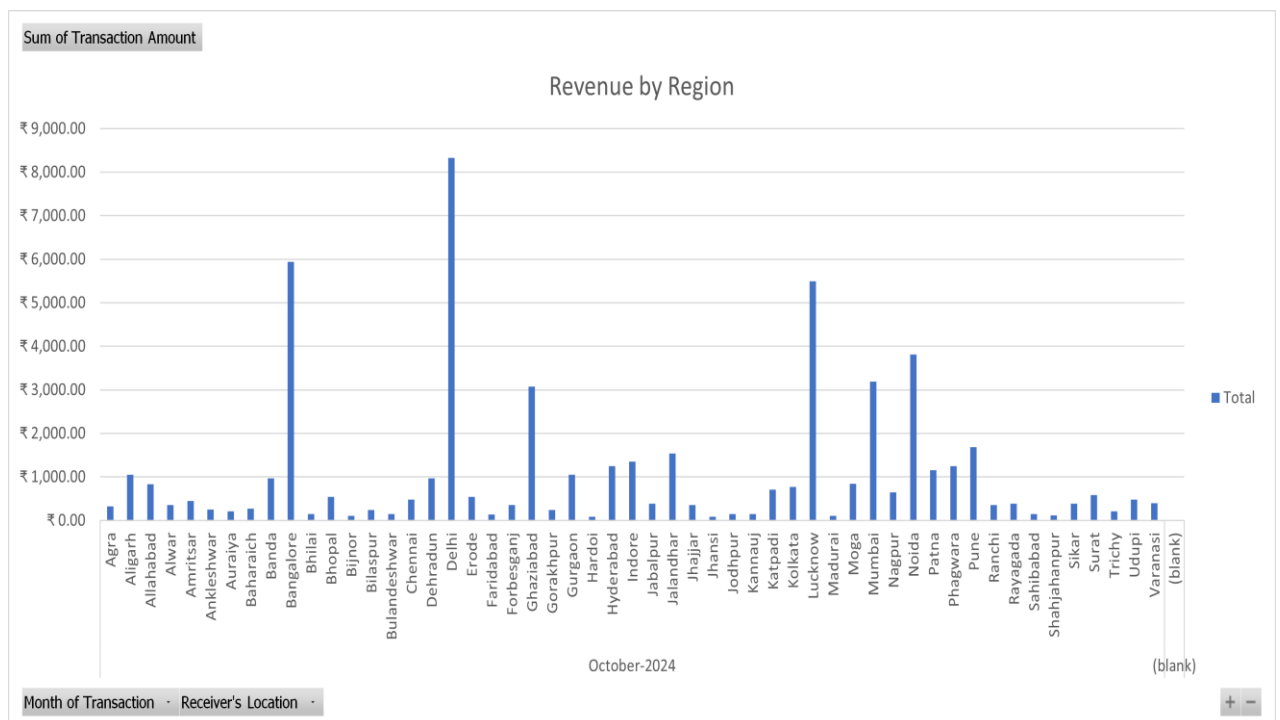


Figure 3.2 Revenue by region

- Proportion of delivered and returned parcels:

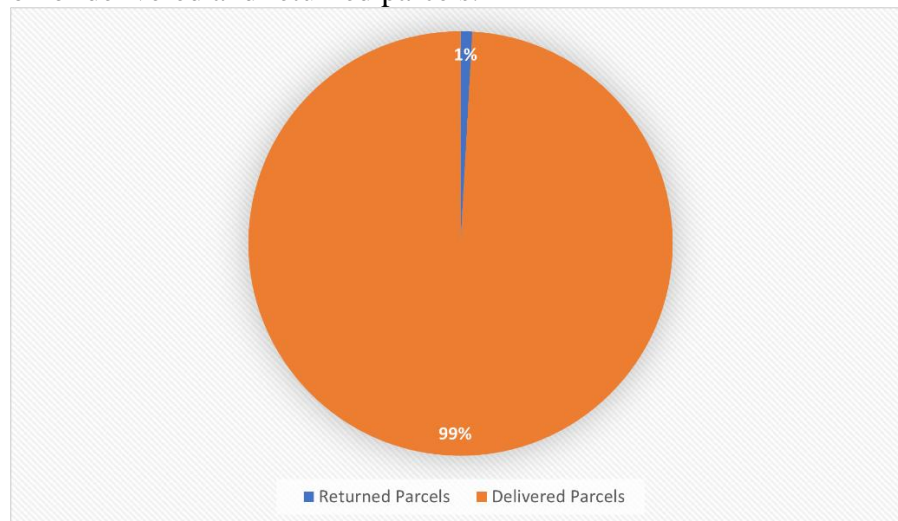


Figure 3.3 Proportion of delivered and returned parcels

- States with the highest number of parcels sent:

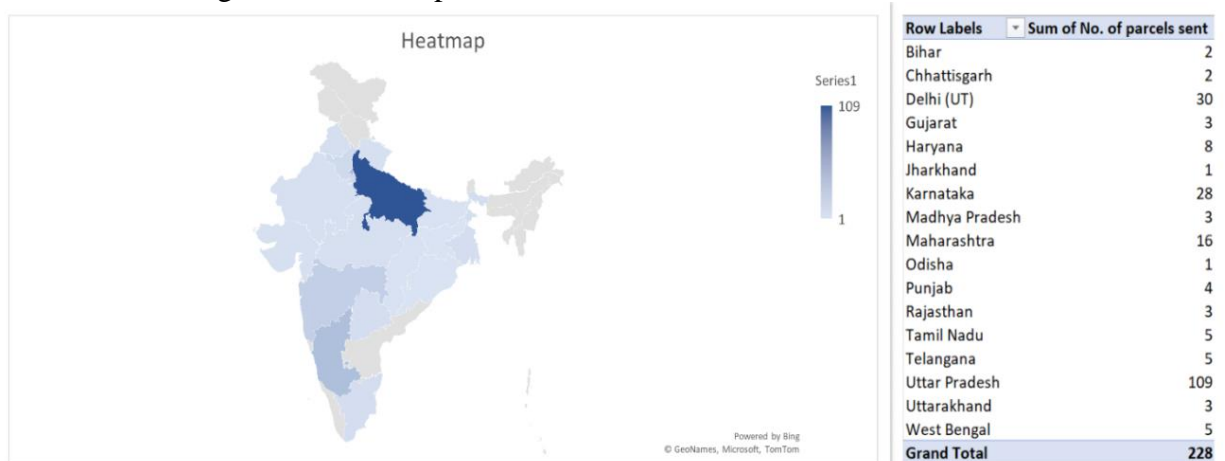


Figure 3.4 States with the highest demand

- Percentage of delayed parcels per region:

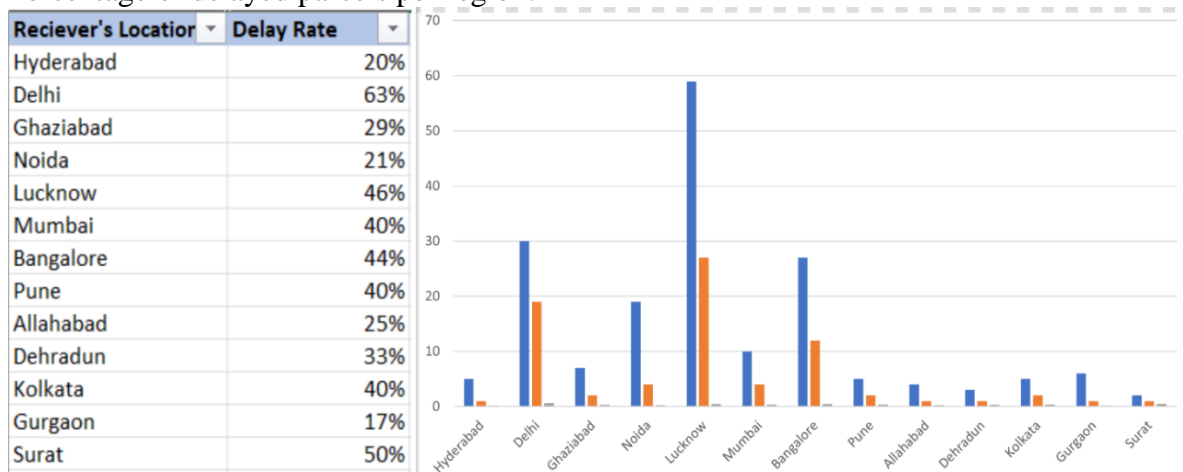


Figure 3.5 Percentage of delayed parcels per region



- Standard vs. Express service type:

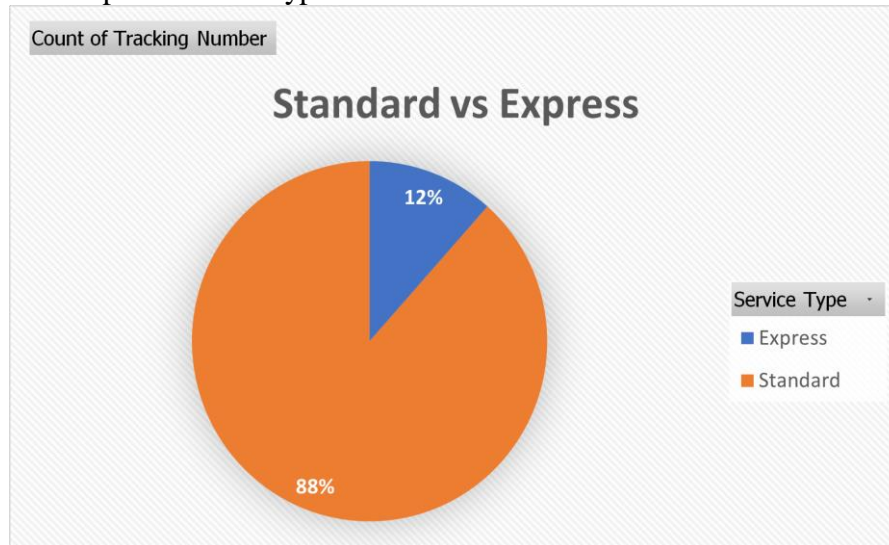


Figure 3.6 Standard vs Express

- Revenue vs Service type

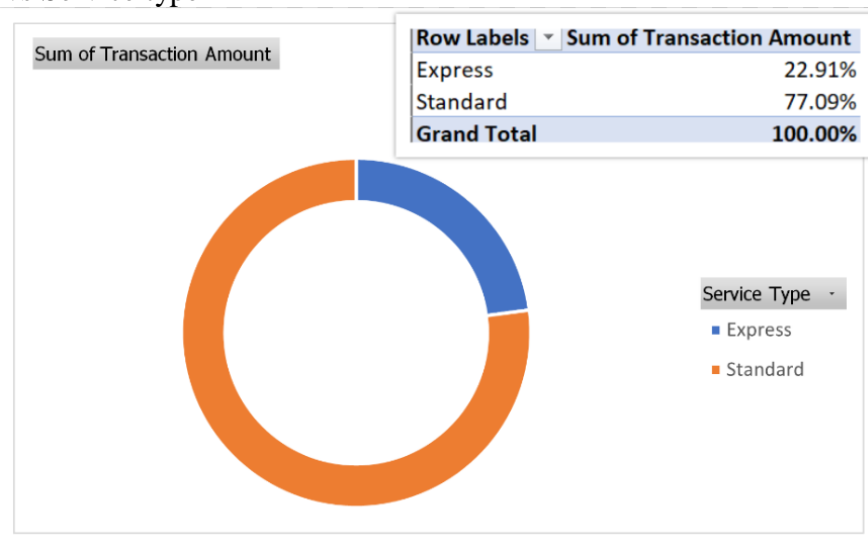


Figure 3.7 Revenue vs Service type

- Peak weekdays:

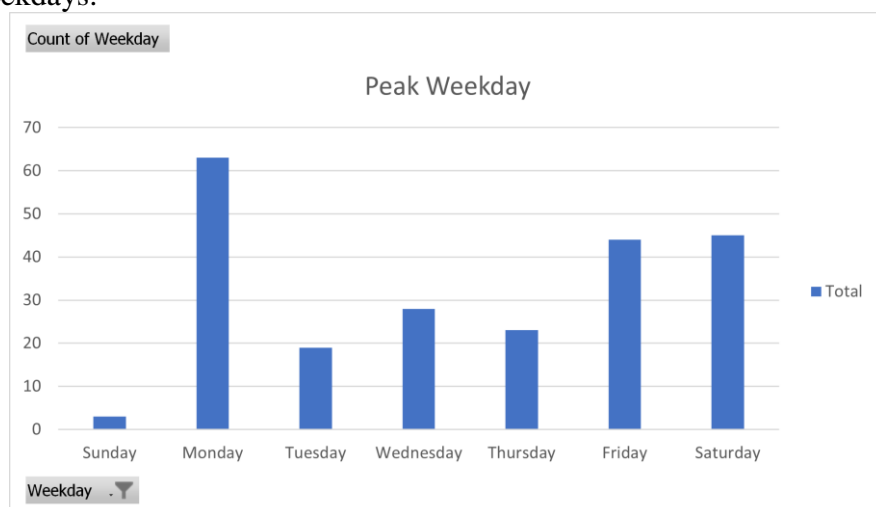


Figure 3.8 Peak weekdays

- Proportion of parcel weights:

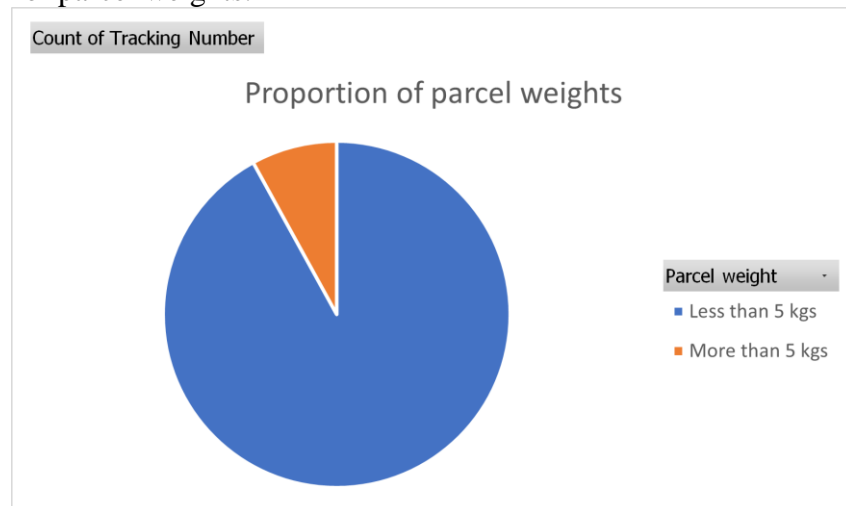


Figure 3.9 Proportion of parcel weights

- Revenue by parcel weights:

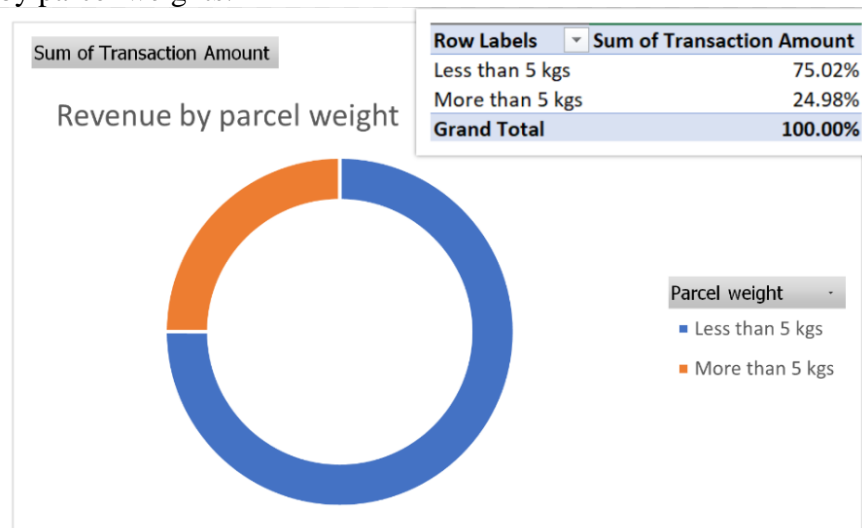


Figure 3.10 Revenue by parcel weight

- Revenue trend over the month:



Figure 3.11 Revenue trend over the month

## 4 Detailed Explanation of Analysis Process/Methods

This project used **Microsoft Excel** as the primary tool for analysing operational data from DTDC Courier Franchise Services. Excel was selected due to its accessibility, familiarity to the business owner, and ability to perform efficient, structured analysis without the need for advanced technical skills.

### Data Collection & Cleaning

Bills from October 2024 were manually entered into Excel over 3–4 meetings. Region names, service types, and weights were standardized to ensure consistency. Minor entry errors were cross-checked against physical documents.

### Methods Used and Justification

- **PivotTables** were used to summarize revenue by region, service types, and parcel weight categories.
- **COUNTIF/COUNTIFS** helped calculate return frequencies, weekday activity, and delay-prone zones.
- **AVERAGEIF** was used to find average delivery amounts/times and detect high-earning parcel categories.
- **Conditional Formatting** highlighted high- and low-performing regions and parcels.
- **Charts (bar, pie, line)** made patterns easy to interpret and present.

These methods were chosen because they are **simple, scalable, and transparent**—allowing the franchise owner to continue using them in future months. Compared to tools like Power BI or R, Excel offers **ease of use and immediate insights**, which makes it more suitable for a small business setup.

### Challenges

Some minor data gaps (e.g., parcel weight or delivery delay time) were noted, and workarounds were used. Despite manual entry, Excel enabled fast validation and correction.

In summary, Excel provided a robust yet user-friendly platform for extracting business insights aligned with the project's three problem statements.

## 5 Results and Findings

The following are the major findings from the descriptive statistical analysis:

### 1. Revenue by Region:

- Delhi contributed the highest revenue in October 2024, followed by Bangalore and Lucknow. (Figure 3.2)

- Regions like Jhansi and Hardoi had notably lower revenue contributions, indicating potential inefficiencies or low demand. (Figure 3.2)

## 2. Parcel Return Rates:

- Only 2 out of 225 parcels were returned, indicating a low return rate of less than 1%. (Figure 3.3)
- Although the problem statement anticipated high return rates, the data collected for this time period indicates an unexpectedly low return rate of only 0.89%. This suggests either an improvement in delivery quality or a potential issue in data logging/reporting of returns. A longer observation period or further investigation could help clarify this discrepancy.

## 3. Service Type Trends:

- Standard service was used for over 88% of the parcels. (Figure 3.6)
- Express services, although fewer in number, generated 23% of the total revenue(Figure 3.7)

## 4. Parcel Weight Insights:

- Heavier parcels (>5 kg) were fewer but accounted for a disproportionately high share of revenue. (Figure 3.10)
- Lighter parcels dominated volume. (Figure 3.9)

## 5. Peak Activity Days:

- The majority of transactions occurred on weekdays, with Mondays and Saturdays being the busiest. (Figure 3.8)
- This trend can help in optimizing staff allocation and resource planning.

## 6. Delay-Prone Regions:

- Areas like Delhi and Surat showed a higher percentage of delayed deliveries. (Figure 3.5)
- Suggestion: Route planning tools like Google Maps API could help streamline deliveries in these regions.

## 7. Summary Dashboard

To provide a consolidated visual representation of the key findings, a comprehensive dashboard was created using Power Bi and Excel. The dashboard displays key metrics and patterns across revenue, parcel types, and delivery performance.

### **Link to Power Bi dashboard file:**

[https://drive.google.com/file/d/11Izkuc\\_177oIOSYxuvxYV57FkA96Ux-L/view?usp=drive\\_link](https://drive.google.com/file/d/11Izkuc_177oIOSYxuvxYV57FkA96Ux-L/view?usp=drive_link)