

## MCD412 B. Tech Project

Week1 (13-Jan to 19-Jan 2025) Report

Submission Due: 20-Jan-2025, 05:00 PM

**Title of the project: Dynamic Freight Pricing**

**Area of the project: Industrial**

**Student Name with Entry number:**

1. Sanidhya Mittal (2021ME21054)
2. Sanchit (2021ME21063)

**Supervisor Name: Prof. Amber Srivastava & Prof. Prashant Palkar**

**Abstract (100 words only):** *Briefly describe about the project, expected outcomes*

This research aims to develop a comprehensive dynamic pricing model for the rail freight industry that optimizes revenue generation while maintaining service reliability and market competitiveness. Building on current pricing literature and preliminary data from Indian Railway Ministry, we investigate the key variables influencing rail freight pricing elasticity, including seasonal fluctuations, commodity-specific characteristics, and intermodal competition. Through econometric analysis of historical pricing data and real-time market conditions, combined with machine learning techniques, we expect to construct a predictive model that can automatically adjust freight rates based on capacity utilization, demand patterns, and competitive factors. The anticipated outcome is a practical framework that rail operators can implement to maximize asset utilization while maintaining stable relationships with long-term contractors.

### **Objectives:**

1. To develop and validate a machine learning-based dynamic pricing model that incorporates historical patterns, and operational constraints specific to rail freight transportation, with the goal of optimizing revenue.
2. To identify and quantify the critical factors affecting price elasticity in rail freight transport, including seasonal variations, commodity characteristics, available capacity, competitive alternatives, and contractual obligations.
3. To create a practical implementation framework that allows rail operators to seamlessly integrate dynamic pricing strategies with existing operations.

### **Declaration:**

**I/We have met our supervisor on 14 Jan'25 (Date) at 11:30AM (Time) and discussed the report before submission.**

  
(Sanidhya's Signature)

  
(Sanchit's Signature)

(Supervisor Signature)