

UK TRAIN RIDES ANALYSIS

DEPI GRADUATION PROJECT

POWER BI
DASHBOARD INSIGHTS



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Project Scope and Objectives

OBJECTIVE

To analyze and visualize national train journey data across the UK using Power BI, with a focus on service performance, ticketing behavior, and revenue.



Project Scope and Objectives

KEY GOALS

- Identify reliability trends (on-time, delayed, cancelled)
- Understand passenger behavior through ticket types and railcard usage
- Evaluate revenue by class, type, and payment method
- Detect root causes of delays and associated refunds
- Highlight key stations and traffic patterns



Data Summary

- Total Journeys: 31,653
- Time Period: Dec 2023 – Apr 2024

1.
Journey status

4.
**Delay reasons and
refunds**

2.
**Ticket type
and class**

5.
**Revenue and
payment methods**

3.
Station traffic



Journey Status Analysis

The majority of journeys were punctual. However, 13% of journeys were affected by delays or cancellations, indicating areas for operational improvement.



Status Breakdown

- On Time: 86.8% (27,481 journeys)
- Delayed: 7.2% (2,292 journeys)
- Cancelled: 5.9% (1,880 journeys)

Monthly Observations

- Steady journey volumes from Dec 2023 to Apr 2024
- Peak delays in February and March
- Revenue spikes in January and April
- Consistent demand with seasonal variation

STATION TRAFFIC PATTERNS

These stations handle the highest volume and are central to route planning and network efficiency

Top Departure Station

Manchester Piccadilly

Top Arrival Station

Birmingham New Street

Other Major Stations

- London
- Euston
- York

Ticket Usage

Ticket Types Used

- Advance: 55.5%
- Off-Peak: 27.6%
- Anytime: 16.9%

Railcard Usage

- Most travelers (20.9K) had no railcard
- Senior, disabled, and adult railcards were underutilized

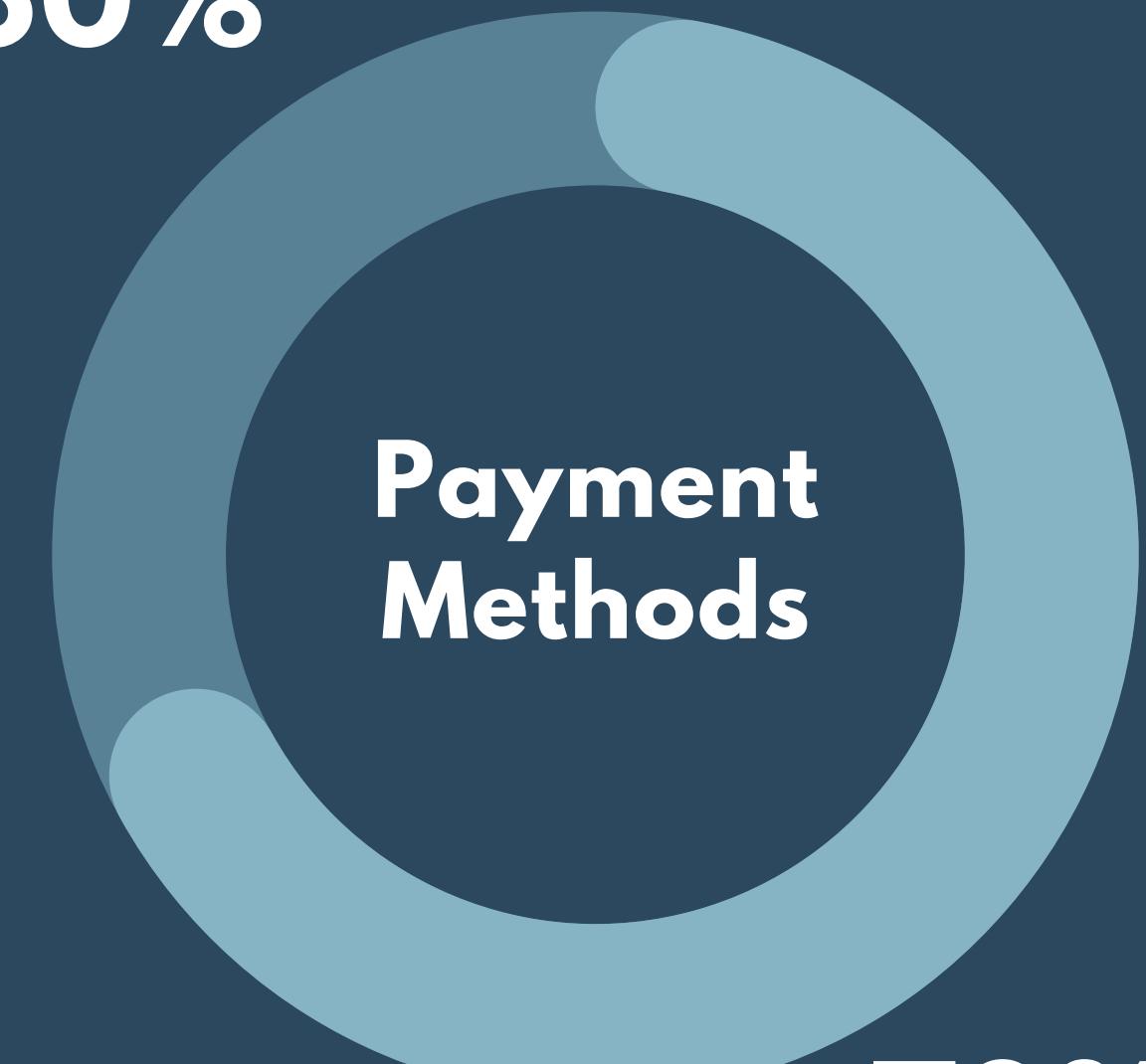


Revenue

- Total: \$741,921
- Standard Class: \$592,522
- First Class: \$149,399
- Advance Tickets: \$242,388



Contactless
30%



70%
Credit Card: 63%
Debit Card: 7%

DELAY CAUSES & REFUND TRENDS

- Operational delays have a measurable financial impact, especially at high-traffic stations.

Top Delay Reasons

- Staff Shortage: \$11,667 in losses
- Technical Issue: \$15,046
- Signal Failure, Traffic, and Weather contributed less

Refund Trends

- Total Refunds: \$38,702
- Top Stations with Refunds:
- London Euston: \$22.4K
- York, Manchester Piccadilly, Birmingham New Street

Recommendations

- Strengthen staffing and technical infrastructure
- Promote railcards to increase savings
- Prioritize delay mitigation at top stations
- Monitor refund hotspots for quality assurance



Summary Insights

- On-time performance is strong, but ~13% disruption rate
- Manchester and Birmingham are key transport hubs
- Advance ticketing dominates; railcard usage could improve
- Staff and technical issues are key delay causes
- Credit cards are the preferred payment method



THANK YOU

FOR YOUR ATTENTION

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