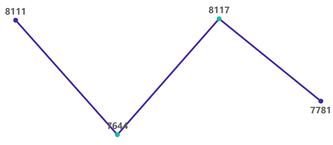
Operational Performance

Total Journeys	% of Delayed Journeys	% of Cancelled Journeys	% On Time Journeys
31653	7%	5.9%	86.8%

Journeys Trending

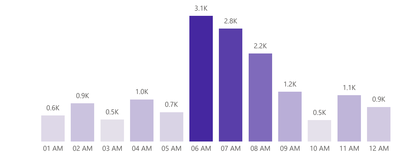


Month Name Sort	Revenue	% Cancelled	% Delayed	Refunded Passengers	Refund Amount
Apr	£187,782	6.1%	7%	270	£9,297
Mar	£195,147	6.1%	8%	306	£10,554
Feb	£159,374	5.7%	7%	253	£7,845
Jan	£199,618	5.9%	7%	289	£11,006

March recorded the highest number of journeys with 8117, closely followed by January at 8111. **March** also **led in cancellations**, **delays**, and **refunded passengers**, while **January**, despite being second in ticket sales, **saw the highest revenue** and the **largest refund amounts**.

Departure Peak Hours

Click to see PM



	01 AM	02 AM	03 AM	04 AM	05 AM	06 AM	07 AM	08 AM	09 AM	10 AM	11 AM	12 AM
Mon	83	155	80	148	93	435	426	294	182	75	159	119
Tue	100	133	65	126	97	458	386	302	180	61	146	115
Wed	79	125	76	153	121	453	416	302	187	82	157	119
Thu	83	136	81	143	106	452	411	335	149	66	177	121
Fri	104	132	95	162	114	455	361	319	189	88	165	141
Sat	93	130	69	143	91	442	396	323	179	81	181	104
Sun	102	131	77	166	103	417	399	304	164	72	158	134

Peak travel times occur in the **morning** between **6:00** and **8:00 AM**, likely due to the start of the workday. In the **evening**, the busiest period is from **4:00** to **6:00** PM, when people are likely commuting home after work.
Select a route to see peak travel times for that specific route.

Popular Routes

Route	Total Journeys	Total Revenue	% of Cancelled	% of Delayed	Refund Amount
Birmingham New Street to Coventry	65	£269	7.7%	No Delay	£6
Birmingham New Street to Edinburgh	16	£798	No Cancel	No Delay	Not given
Birmingham New Street to Liverpool Lime Street	175	£1,790	2.3%	No Delay	£16
Birmingham New Street to London Euston	125	£3,594	4.0%	35%	£521
Birmingham New Street to London Kings Cross	17	£535	No Cancel	No Delay	Not given
Birmingham New Street to London Paddington	32	£718	12.5%	No Delay	£39
Birmingham New Street to London St Pancras	702	£19,011	7.3%	No Delay	£249
Birmingham New Street to Manchester Piccadilly	224	£2,507	8.0%	43%	£1,151

The **top route** in total journeys is **Manchester Piccadilly to Liverpool Lime Street**. In terms of **revenue**, the top route is **London Kings Cross to York.**

The route with the **most cancellations** is Liverpool Lime Street to Birmingham New Street.

Notably, three routes reported **100% delays:1.** *Edinburgh Waverley to London Kings Cross* **2.** *London Euston to York* **3.** *York to Wakefield*.

The **highest estimated refund amount** (**£13,126**) was recorded for the Liverpool Lime Street to London Euston route, with **a delay rate of 71.1%** and a **cancellation rate of 9.0%**. This route **is unique for having both high delays and cancellations**, whereas **other routes** tend to have high rates in either delays or cancellations, but **not both**.

Delay Duration Breakdown

Delay Mins Bucket	Delayed Journeys	Duration in Mins	Passengers Refunded	% Refund
0 min	18	0	12	0.0%
<= 1 min	22	22	14	63.6%
1-5 mins	95	315	57	60.0%
5-15 mins	315	3502	128	40.3%
15-30 mins	505	11535	235	46.2%
30-60 mins	1014	46396	111	10.9%
> 60 mins	323	34983	561	25.7%

Delay Duration Breakdown:

- A significant number of journeys experience **delays beyond 15 minutes**.
- **Refund percentages** are highest for **moderate delays** (1-30 minutes), **peaking at 60.7% for 1-5 min** delays.
- **Surprisingly, 12 passengers received refunds despite no recorded delay** 😮

Causes of Delay and their Frequency:

- **Weather** is the most **frequent cause** (**1372** instances), followed by signal failures (**970**) and staff shortages (**809**). **Traffic** is the **least frequent cause.**

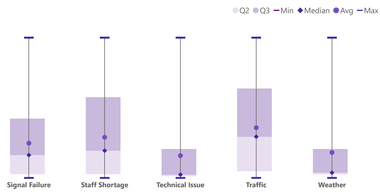
Causes of Delay and their Severity:

- **Traffic** is **the least frequent**, but when it occures, the delays **are severe**. Half of the times it causes delays for more than 7 hours (Median: **422.50**).
- **Staff Shortage & Signal Failures** also result in long and highly variable delays.
- **Weather & Technical** tend to cause shorter delays, but in **exceptional cases**, they may lead to significant disruptions.

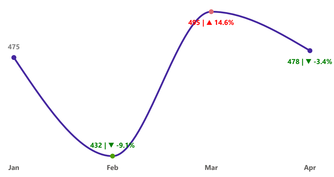
💡**Suggestions :** Need for addressing traffic management, staffing, and signal reliability.

How Often each Reason of Delay Happens?

How Severe Each Reason of Delay is in Terms of Journey Duration?



How does the frequency of train cancellations change each month?



How Often each Reason of Cancellation Happens?

Train Cancellations Trends:

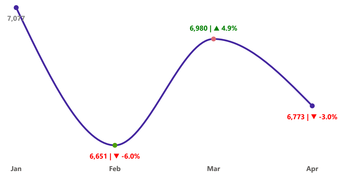
- **March** saw a **sharp rise (+14.6%) in cancellations.**

Reasons for Cancellations:

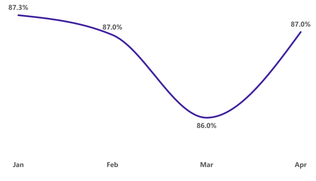
- **Signal failures** are the **leading cause of cancellations**, highlighting infrastructure reliability issues.
- **Staff shortages** and **weather** are also **major factors**, emphasizing workforce and environmental challenges.
- **Technical issues** and **traffic** are less frequent but **still significant.**

💡**Suggestions:** Improve infrastructure, address staff shortages, and mitigate weather impacts to reduce train cancellations.

Which month had the most stable On-Time service?



How reliable was On-Time service each month?



Stable On-Time Service

March had the highest on-time percentage (**93.9%**), indicating the most consistent performance.

On- Time reliability.

The on-time performance **each month stayed consistently above 86**%, reflecting a generally **reliable service.**

💡Insights 💡

Interestingly, **cancellations peaked in March**, marking a +14.6% increase. **This indicates that while service reliability improved, it may have been at the cost of more frequent cancellations to maintain overall timeliness.**

Passengers Behavior

Total Passengers
31653

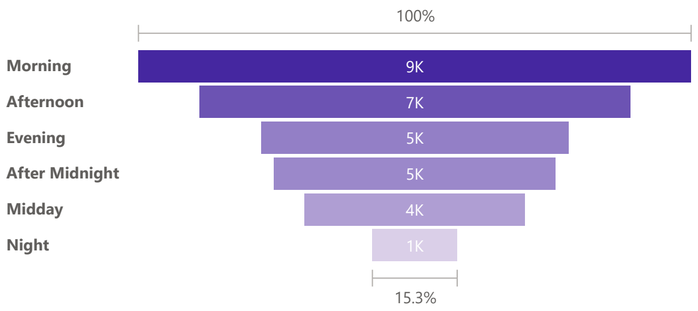
Disrupted Journeys
4172
Disruptions of Total Journeys:
13.2%

Total Refund Requests
1118
Refund Requests Among Disruptions:
3.5%

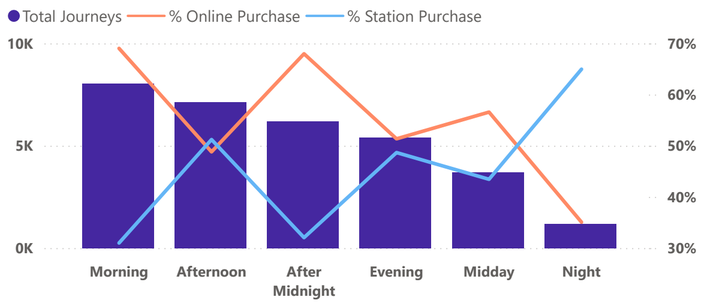
Delays Refund Request
546

Cancellations Refund Request
572

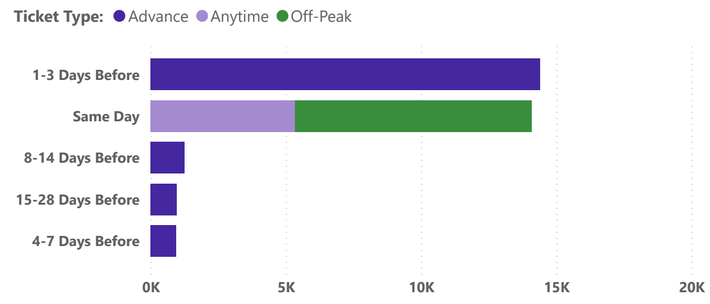
When Do Most Journeys Occur During the Day?



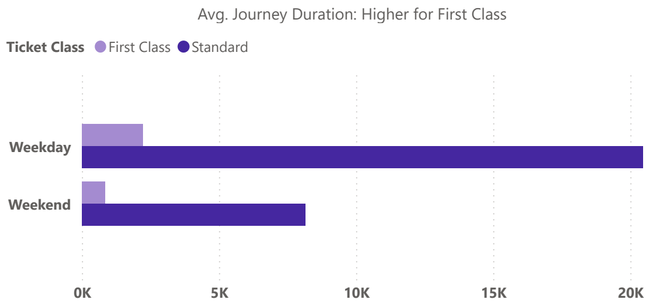
When Do Customers Prefer Online vs Station Purchases?



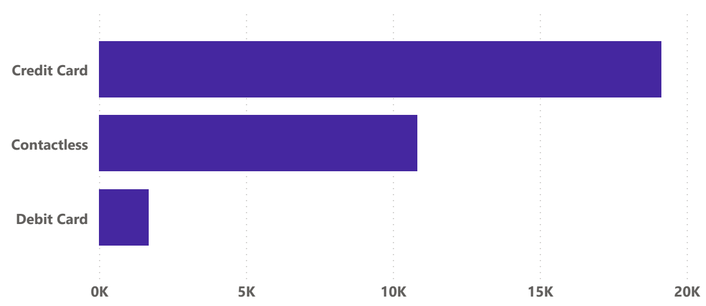
How Much Earlier Do People Buy Tickets?



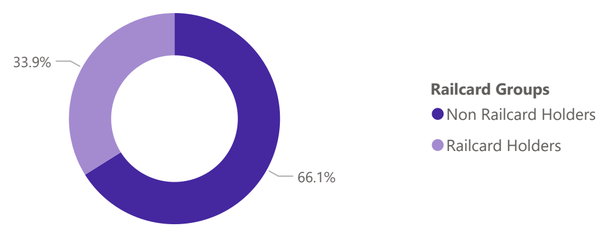
Do Most Journeys Occur on Weekdays or Weekends?



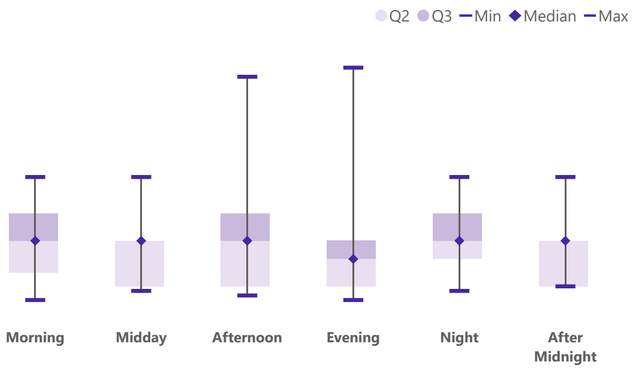
Which is the Most Popular Payment Method?



Do Railcard Holders Make More Journeys Than Non-Railcard Holders?



How is Journey Duration Distributed by Departure Time?



Peak travel times occur in the **morning (9316** journeys) and **afternoon** (**7264** journeys).

Most journeys occur **during the week** for both First and Standard class passengers. On average, **First Class trips** have a **longer journey duration** than Standard Class trips, with an average journey time of **73.26** minutes.

Journey Duration based on Departure Time.

Morning, **Midday**, **Evening, Night & After Midnight** journeys show **stable and predictable** durations.
Afternoon tends to have **more variability.**
The **Evening** exhibits **the shortest** journey duration, with 50% of journeys lasting 60.00 minutes or less.

Insights: Most day parts align with typical commuting patterns. **Leisure travelers** are more likely to travel in the **Afternoon**. The **After Midnight** period likely reflects **shift workers**, or alternatively, **leisure travelers** heading to or from **airports/hubs**, where travel times are more standardized.

On Line vs Station Ticket Puchases

Peak **online ticket purchases** occur in the **morning** (**69.0%**) and at **night** (**35.1%**), likely reflecting people booking tickets either before starting their workday or after work hours.

Station ticket purchases show an increase in the **afternoon** (**51.2%**) and **peak late at night (64.9%).** This may be due to 24/7 service availability or last-minute travel decisions for overnight or early-morning transportation.

Payment Mehtod

Credit cards is the most popular method, likely due to their convenience (**19136).**

Leading Time Ticket Puchase

1-3 Days before: This is the most common booking period, with the total number of journeys being the highest (**14395**). As expected, the **Advanced ticket type** dominates this period.
Same day: Follows closely (**14092**), with the Off-Peak ticket type being the most popular.

Railcard Holders Total Journeys.

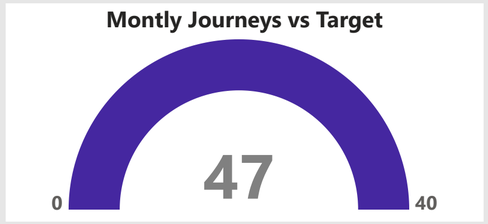
Non Railcard holders account for a significant portion of the total journeys, making up 66.1% of all journeys., This suggests that frequent travelers may not always rely on discounts, possibly because:

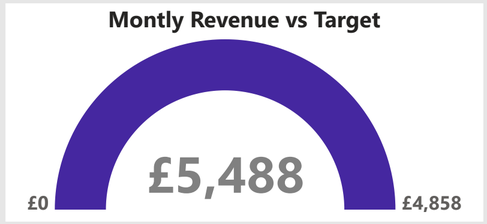
- Thay travel for work and are reimbursed.
- They haven't found a railcard that fits their travel pattern.

Routes' Revenue Insights

Selected Route:

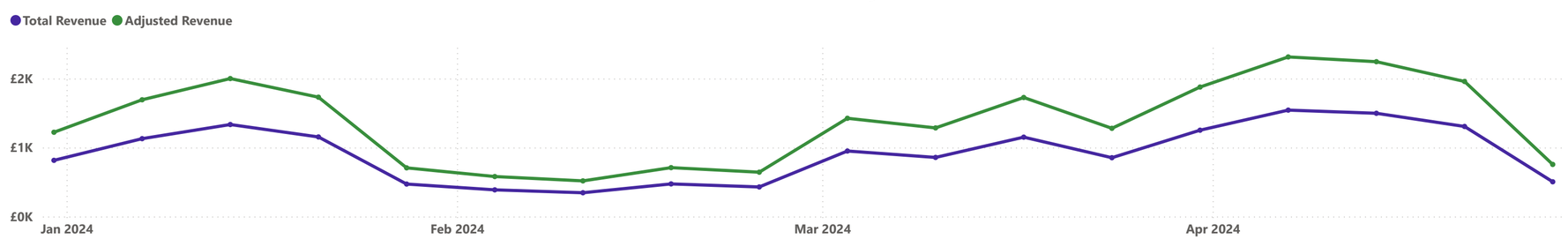
Manchester Piccadilly to London Paddington

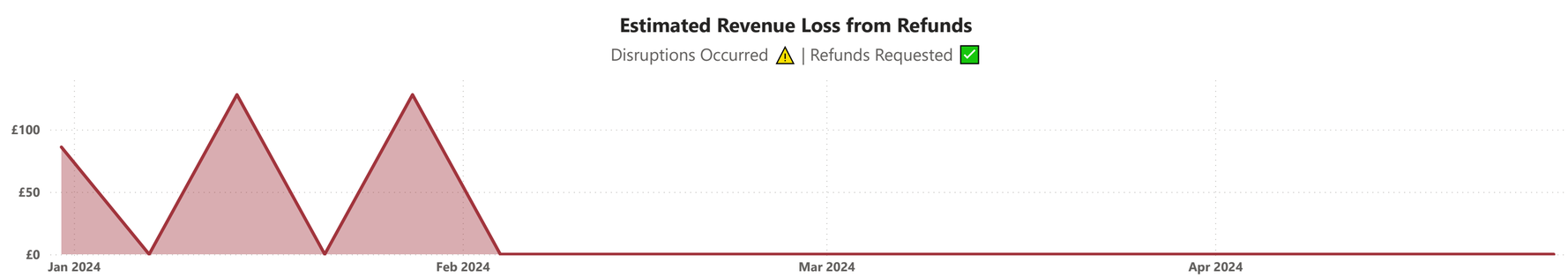




Price Adjustment (%)

0.50





Assumes all refunds are processed at full ticket price due to unavailable data.