**National Rail 200+ Dashboard Documentation: Passenger Usage Analysis**

This document provides a detailed overview of the "National Rail 200+" dashboard, specifically focusing on passenger usage. The dashboard aims to provide key insights into travel patterns and popular routes. The data presented covers the period up to April 2024.

**I. Overview**

The dashboard presents a focused view of passenger data, encompassing journey trends, peak travel times, popular stations, and common ticket types. The data presented covers the period up to April 2024.

**II. Key Sections and Metrics**

The dashboard is organized into several key sections, each providing specific insights into passenger usage:

**1. Passenger Usage Trends:**

* **Visual:** A line chart displaying the number of journeys over time, specifically from January to April.
* **Key Metrics:**
  + **Journeys:** The total number of journeys recorded during the specified period (31,653).
  + **Cancelled:** The total number of cancelled journeys (1,880).
* **Insights:** This section highlights the overall trend in passenger usage. The accompanying text indicates a 4.36% decrease in actual journeys between January 2024 and April 2024. This could prompt further investigation into the reasons behind this decline (e.g., seasonal variations, external factors).

**2. What is the best Railcard and Non-Railcard Holder Distribution?**

* **Visual:** A pie chart illustrating the proportion of passengers using railcards versus those who are non-railcard holders. Additionally, a bar chart shows the distribution of different railcard types among railcard holders and the age distribution of non-railcard holders.
* **Key Metrics:**
  + **Non-Railcard Holder:** Percentage of passengers without a railcard (19.54%).
  + **Railcard Holder:** Percentage of passengers using a railcard (80.46%).
  + **Adult (Non-Railcard):** Percentage of adult non-railcard holders (4.62%).
  + **Senior (Non-Railcard):** Percentage of senior non-railcard holders (2.86%).
  + **Child (Non-Railcard):** Percentage of child non-railcard holders (2.40%).
  + **Specific Railcard Type Percentages:** Percentages for various railcard types (e.g., 16-25 Railcard, Two Together Railcard, Family & Friends Railcard, Senior Railcard, Disabled Persons Railcard, Network Railcard). 1

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* **Insights:** This section reveals that the majority of passengers (80.46%) utilize railcards. The text below the charts emphasizes that 66% of passengers are non-railcard holders or adult railcard holders, suggesting these are the most prevalent passenger groups. Understanding the distribution of railcard types can inform targeted promotions and fare strategies.

**3. What is the Most Common Ticket Class Type?**

* **Visual:** A pie chart showing the distribution of different ticket class types.
* **Key Metrics:**
  + **Standard Class:** Percentage of passengers traveling in Standard Class (26.89%).
  + **Advance:** Percentage of passengers with Advance tickets (55%).
  + **First Class:** Percentage of passengers traveling in First Class (2.97%).
  + **Off-Peak:** Percentage of passengers with Off-Peak tickets (8.27%).
  + **Other:** Percentage of passengers with other ticket types (4.91%).
* **Insights:** The data clearly indicates that "Advance" tickets are the most common ticket type (55%), followed by "Standard Class" (26.89%). The text reinforces this, stating that Standard Class is the most common class and that within this class, Advance tickets are the most common at 14,665 (55%). This information is crucial for capacity planning and understanding passenger booking behavior.

**4. What are the Peak Hours for Passenger Journeys in the AM Period?**

* **Visual:** A bar chart displaying the number of journeys for each hour from 1 AM to 12 PM (AM).
* **Key Metrics:** Number of journeys for each hour (e.g., 621 at 1 AM, 878 at 2 AM, peaking at 2,931 at 8 AM). Data is broken down by day of the week.
* **Insights:** This section identifies the busiest travel times during the morning. The highest number of journeys consistently occurs around **8 AM** across most days of the week. The accompanying text also notes that the PM peak hours are from 4 PM to 7 PM, indicating the highest demand for rail services during these periods. This information is vital for resource allocation, staffing, and potentially adjusting timetables to meet passenger demand.

**5. What are the Top 7 Departure Stations?**

* **Visual:** A horizontal bar chart listing the top 7 departure stations based on the number of journeys.
* **Key Metrics:** Number of departures from each station:
  + Liverpool Lime Street: 2,715
  + Manchester Piccadilly: 2,555
  + London Paddington: 2,050
  + London Kings Cross: 1,850
  + London Euston: 1,845
  + London St Pancras: 1,721
  + Birmingham New Street: 1,311
* **Insights:** This section highlights the most frequently used departure stations. Liverpool Lime Street and Manchester Piccadilly are identified as the busiest. This information is crucial for infrastructure planning, managing station capacity, and potentially focusing customer service efforts at these key locations.

**6. What are the Top 7 Arrival Stations?**

* **Visual:** A horizontal bar chart listing the top 7 arrival stations based on the number of journeys.
* **Key Metrics:** Number of arrivals at each station:
  + Birmingham New Street: 2,845
  + Manchester Piccadilly: 2,341
  + Liverpool Lime Street: 2,193
  + York: 2,077
  + Reading: 1,715
  + London Euston: 1,699
  + London St Pancras: 1,535
* **Insights:** Similar to departure stations, this section identifies the most common arrival points. Birmingham New Street and Manchester Piccadilly are again prominent. Comparing top departure and arrival stations can reveal key travel corridors and inform route planning.

**III. Potential Use Cases and Insights**

This dashboard provides valuable insights for various stakeholders within National Rail 200+ focusing on passenger usage:

* **Operations Management:** Understanding peak travel times and busy stations allows for better resource allocation (staffing, train scheduling, platform management).
* **Marketing and Sales:** Knowledge of common ticket types and railcard usage can inform targeted marketing campaigns and fare promotions. Understanding popular routes can help optimize service offerings.
* **Infrastructure Planning:** Identifying consistently busy stations can inform decisions about future infrastructure investments and capacity upgrades.
* **Customer Service:** Awareness of peak travel times and popular routes can help customer service teams prepare for increased inquiries and manage passenger flow.
* **Strategic Planning:** The overall trends in passenger usage provide valuable data for long-term strategic planning and decision-making related to service demand.

**IV. Recommendations for Further Analysis**

To gain even deeper insights into passenger usage, further analysis could be conducted:

* **Demographic Analysis:** Explore passenger demographics in relation to ticket type and railcard usage for more targeted marketing.
* **Route-Specific Analysis:** Analyze passenger usage for specific routes to understand demand patterns and inform service adjustments.
* **Trend Analysis Over Longer Periods:** Examine data over a longer timeframe (e.g., year-on-year) to identify seasonal patterns and long-term trends in passenger behavior.
* **Integration with External Data:** Incorporate external factors such as major events to understand their impact on passenger usage.

**V. Conclusion**

The National Rail 200+ Passenger Usage dashboard provides a clear and informative overview of key passenger travel patterns. By monitoring these metrics and conducting further analysis, National Rail 200+ can make data-driven decisions to enhance passenger experience and optimize operations based on demand.

**National Rail 200+ Dashboard Documentation: Sales Performance Analysis**

This document provides a detailed overview of the "National Rail 200+" dashboard, specifically focusing on sales performance. The dashboard aims to provide key insights into revenue trends, refund patterns, and top-performing routes. The data presented covers the period up to April 2024.

**I. Overview**

The dashboard presents a focused view of sales-related data, encompassing net revenue, refunds, payment methods, and route performance. The data presented covers the period up to April 2024.

**II. Key Sections and Metrics**

The dashboard is organized into several key sections, each providing specific insights into sales performance:

**1. Which Payment Method has the Highest Refund?**

* **Visual:** A line chart displaying the trend of Net Revenue and Refunds over time (January to April). To the right, summary metrics for Total Net Revenue and Total Refunds are displayed. Below the line chart, a horizontal bar chart shows the Total Refund amount for different payment methods.
* **Key Metrics:**
  + **Total Net Revenue:** £703,219
  + **Total Refund:** £38,702
  + **Refund by Payment Method:**
    - Credit Card: £24,743
    - Contactless: £9,521
    - Contribution: £4,438
* **Insights:** The line chart illustrates the fluctuations in net revenue and refunds over the four-month period. The summary metrics provide the overall financial context. The bar chart clearly indicates that **Credit Card payments account for the highest proportion of refunds (£24,743)**, followed by Contactless (£9,521) and Contribution (£4,438). The accompanying text highlights this finding. This information can prompt an investigation into the reasons for higher refunds associated with credit card transactions.

**2. Which Journey Status has the Highest Refund?**

* **Visual:** A horizontal bar chart showing the Total Refund amount for different journey statuses.
* **Key Metrics:**
  + **Delayed:** £26,165
  + **Cancelled:** £12,537
* **Insights:** This section reveals that **delayed journeys result in significantly higher refunds (£26,165) compared to cancelled journeys (£12,537)**. The text below the chart reinforces this, stating the total refund for delayed journeys and for cancelled journeys. This highlights the financial impact of delays and underscores the importance of minimizing them.

**3. What is the Distribution of Net Revenue by Ticket Type?**

* **Visual:** A stacked bar chart showing the Net Revenue generated by different ticket types across the months from January to April. To the right, summary metrics for the total Net Revenue for each ticket type are displayed.
* **Key Metrics:**
  + **Advance:** £294k
  + **Off-Peak:** £200k
  + **Standard:** £209k
* **Insights:** The stacked bar chart illustrates the monthly revenue contribution of each ticket type. The summary metrics on the right provide the total net revenue generated by each ticket type over the four-month period. **Advance tickets generated the highest net revenue (£294k)**, followed by Standard (£209k) and Off-Peak (£200k). The accompanying text describes the revenue trends for each ticket type over the months, noting the peak performance of Off-Peak in February and the consistent strong performance of Advance tickets. This information is crucial for understanding revenue drivers and optimizing pricing strategies.

**4. What is the Impact of Dealy Duration on Refunds?**

* **Visual:** A table displaying the relationship between Delay Minutes, Delay Net Revenue, Refund ,andRefund∗∗∗KeyMetrics:∗∗∗DelayDurationcategories(15−30Min,5−15Min,1−5Min,30−60Min,0Min,>1Min)∗DelayNetRevenueforeachcategory∗RefundAmount() for each category
  + Refund Percentage (%) for each category
* **Insights:** This table clearly demonstrates the impact of delay duration on refunds. As expected, longer delays are associated with higher refund amounts and percentages. Notably, the highest refund amount (£14,080) and percentage (48.2%) are for delays between 15 and 30 minutes. Interestingly, there are also refunds associated with journeys with 0 minutes delay and even journeys with a negative delay (potentially indicating early arrivals, though this might require further investigation). The accompanying text provides additional context, highlighting that a significant portion of refunds (40.05%) are for delays between 5 and 60 minutes. This analysis is vital for understanding the financial consequences of delays of varying lengths.

**5. Top 5 Routes by Revenue**

* **Visual:** A horizontal bar chart displaying the top 5 routes based on Net Revenue.
* **Key Metrics:** Net Revenue for each of the top 5 routes:
  + London Kings Cross To York: £179,498
  + Liverpool Lime Street To London Euston: £100,171
  + London Paddington To Reading: £53,841
  + Manchester Piccadilly To Liverpool Lime Street: £53,230
  + London Euston To Birmingham New Street: £52,038
* **Insights:** This section identifies the most profitable routes based on net revenue. **The London Kings Cross to York route generates the highest revenue (£179,498)**, significantly outperforming the other top routes. This information is crucial for understanding key revenue-generating corridors and potentially focusing service improvements or marketing efforts on these routes.

**6. Bottom 5 Routes by Revenue**

* **Visual:** A horizontal bar chart displaying the bottom 5 routes based on Net Revenue.
* **Key Metrics:** Net Revenue for each of the bottom 5 routes:
  + Bristol Temple Meads To Cardiff Central: £50
  + York To Leeds: £78
  + Birmingham New Street To Wolverhampton: £93
  + Manchester Piccadilly To Warrington: £533
  + London Euston To Oxford: £541
* **Insights:** This section identifies the least profitable routes based on net revenue. The **Bristol Temple Meads to Cardiff Central route generates the lowest revenue (£50)**. Understanding these underperforming routes can prompt a review of their operational efficiency, pricing strategy, or overall demand.

**III. Potential Use Cases and Insights**

This dashboard provides valuable insights for various stakeholders within National Rail 200+ focusing on sales performance:

* **Finance Department:** Monitoring revenue trends, refund amounts, and payment method analysis is crucial for financial planning and reporting. Understanding the financial impact of delays is also vital.
* **Commercial Teams:** Identifying top and bottom-performing routes, as well as revenue by ticket type, informs pricing strategies, marketing campaigns, and service development decisions.
* **Operations Management:** The link between delay duration and refunds highlights the financial importance of minimizing disruptions.
* **Customer Service:** Understanding refund patterns by payment method and journey status can help streamline refund processes and address customer concerns effectively.

**IV. Recommendations for Further Analysis**

To gain even deeper insights into sales performance, further analysis could be conducted:

* **Profitability Analysis:** Incorporate cost data to analyze the profitability of different routes and ticket types, rather than just revenue.
* **Refund Reason Analysis:** Collect and analyze the reasons for refunds to identify recurring issues and implement preventative measures.
* **Customer Segmentation:** Analyze sales performance based on customer demographics or travel patterns to identify key customer segments and their purchasing behavior.
* **Promotional Performance:** Track the impact of specific promotions on sales revenue and refund rates.
* **Seasonal Analysis:** Examine sales performance trends across different seasons or periods to identify seasonality and adjust strategies accordingly.

**V. Conclusion**

The National Rail 200+ Sales Performance dashboard provides a clear and informative overview of key revenue streams, refund patterns, and route performance. By monitoring these metrics and conducting further analysis, National Rail 200+ can make data-driven decisions to optimize pricing, improve service reliability, and maximize revenue generation.