

# TRB Annual Meeting

## A Smart-card Based Analysis of During and Post-Disruption Impacts on Public Transport Passengers' Travel Patterns.

--Manuscript Draft--

<b>Full Title:</b>	A Smart-card Based Analysis of During and Post-Disruption Impacts on Public Transport Passengers' Travel Patterns.
<b>Abstract:</b>	<p>Disruptions in public transport (PT) often cause moderate to severe impacts, affecting other modes beyond the PT network. This study examines the impacts of planned disruptions on PT systems and passengers, using a drivers' strike in the Stockholm commuter rail as a case study. A systematic framework is proposed for a data-driven analysis at two levels: 1) Aggregate level: Examines demand patterns across the system (network-wide), line, and station levels, and 2) Individual Level: Focuses on the travel diaries of commuter rail passengers and their patterns, considering the impact of the affected group on the onboard loads. The analysis considers three periods: pre-disruption (baseline), during-disruption, and post-disruption.</p> <p>The results show that the disruption led to a dramatic decrease in passenger demand for the commuter rail, and an increase for the metro system. Demand decreased more at transfer stations, compared to other key stations. The disruption had a marked lasting effect, as post-disruption passenger demand remained low at many stations compared to pre-disruption levels, and demand remained elevated on close-by alternative public transport modes such as the metro. The analysis shows network-wide impacts beyond the affected mode, lasting beyond the disruptions. These results provide valuable insights to traffic planners and operators in decision-making and transport planning. In particular, we find that certain stations and segments are more vulnerable to disruptive events, indicating where effective disruption management might be needed for a more resilient transport system.</p>
<b>Additional Information:</b>	
<b>Question</b>	<b>Response</b>
The total word count limit is 7500 words including tables. Each table equals 250 words and must be included in your count. Papers exceeding the word limit may be rejected. My word count is:	4901
<b>Manuscript Classifications:</b>	Public Transportation; Transformative Trends in Transit Data AP090; Automated Passenger counters (APC); Automatic Vehicle Location (AVL); General Transit Feed Specification (GTFS); Automatic Fare Collection (AFC) /Smart card data
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