

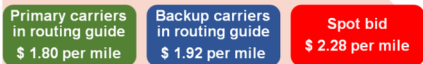
# Reducing Unplanned Transportation Costs

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 Sponsor: TMC| A division of C.H. Robinson

## Motivation / Background

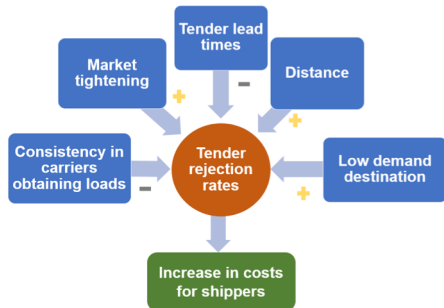
- Tender rejection indicates deviation from planned activity
- Positive correlation between tender rejection rates and costs
- Tender rejection by primary carrier increased from 18% in 2016 to 33% in 2018

### Tender escalation process

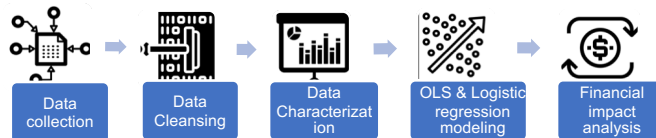


## Key Question / Hypothesis

What are the causes for tender rejection?



## Methodology



**Data**

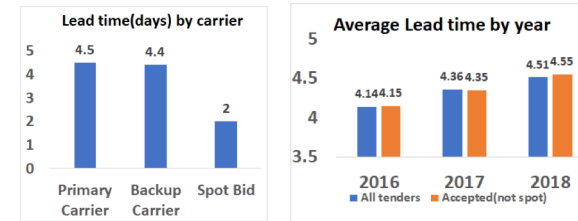
- Data from Sep 2015-Sep 2018
- Full Truckload shipments
- Dry van
- Distance > 250 miles

**Software Tools**

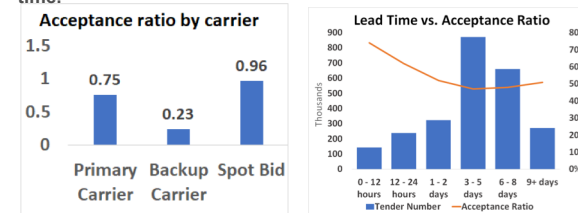
<b>Data cleansing</b>	<b>Data characterization</b>	<b>Data modelling</b>
• R Studio	• Tableau	• R Studio
• Python	• MySQL	• Python

## Initial Results

No significant difference in lead time between primary and backup carriers. Lead time increases by year.



Acceptance ratio drops in backup carriers and varies by lead time.



## Expected Contribution

- Root cause analysis of tender rejection
- Predict routing guide failure based on different attributes
- Recommendations to optimize business process and the associated cost benefits

## Relevant Literature

- Caplice, C. (2009). Electronic Markets for Truckload Transportation. *Production and Operations Management*, 16(4), 423-436.
- Caldwell, E. R., Fisher, B. C. (2008). The impact of lead time on truckload transportation rates (Thesis).

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