

# Paving the Way for LTL Success

## Motivation / Background

Less than truckload transportation (LTL) is experiencing pressure in a growing e-commerce retail market - freight shipments are smaller, but more frequent. Thus more tonnage of freight is being routed via LTL.

- Smaller, more frequent shipments
- Concentrated Revenue
- Declining Capacity
- Potential Labor Shortage



## Key Question / Hypothesis

What attributes have the greatest bearing on the success of an LTL shipment?

### Deliverable Objectives:

- Develop an explanatory model that captures significant factors predicting perfect order.

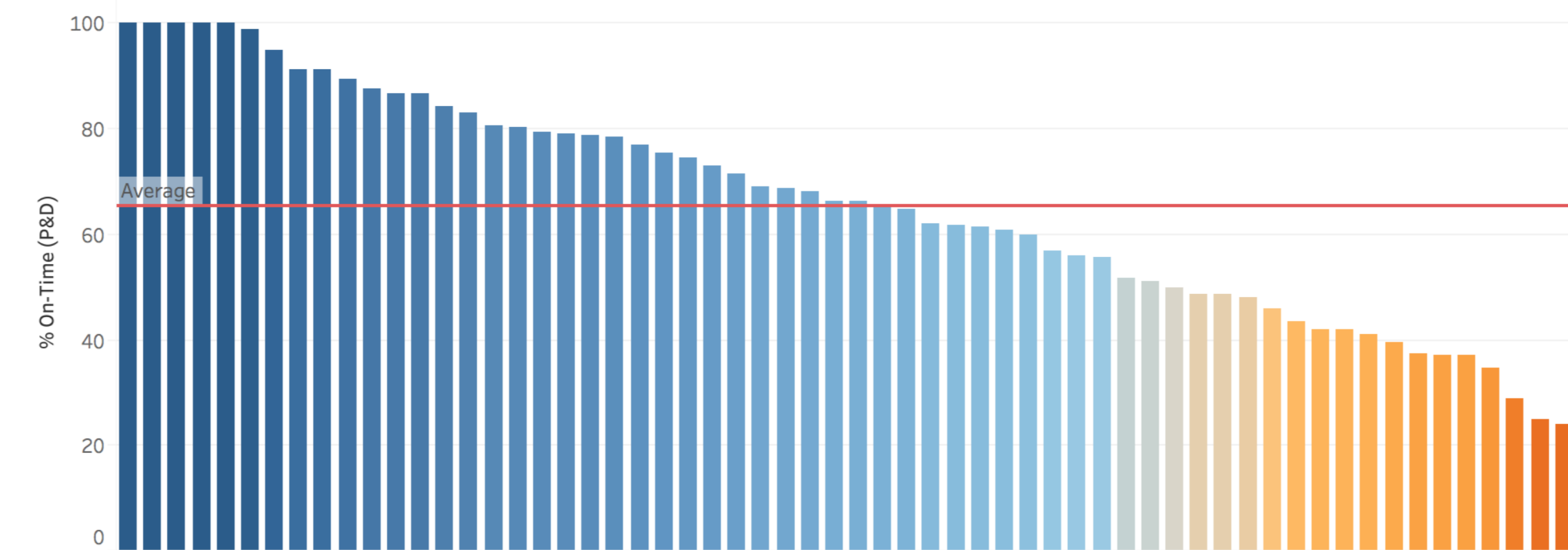
### Model Targets:

- OTP = Origin Arrive Date <= Origin Schedule Close Date
- OTD = Destination Arrive Date <= Destination Schedule Close Date
- Perfect Shipment = OTP \* OTD

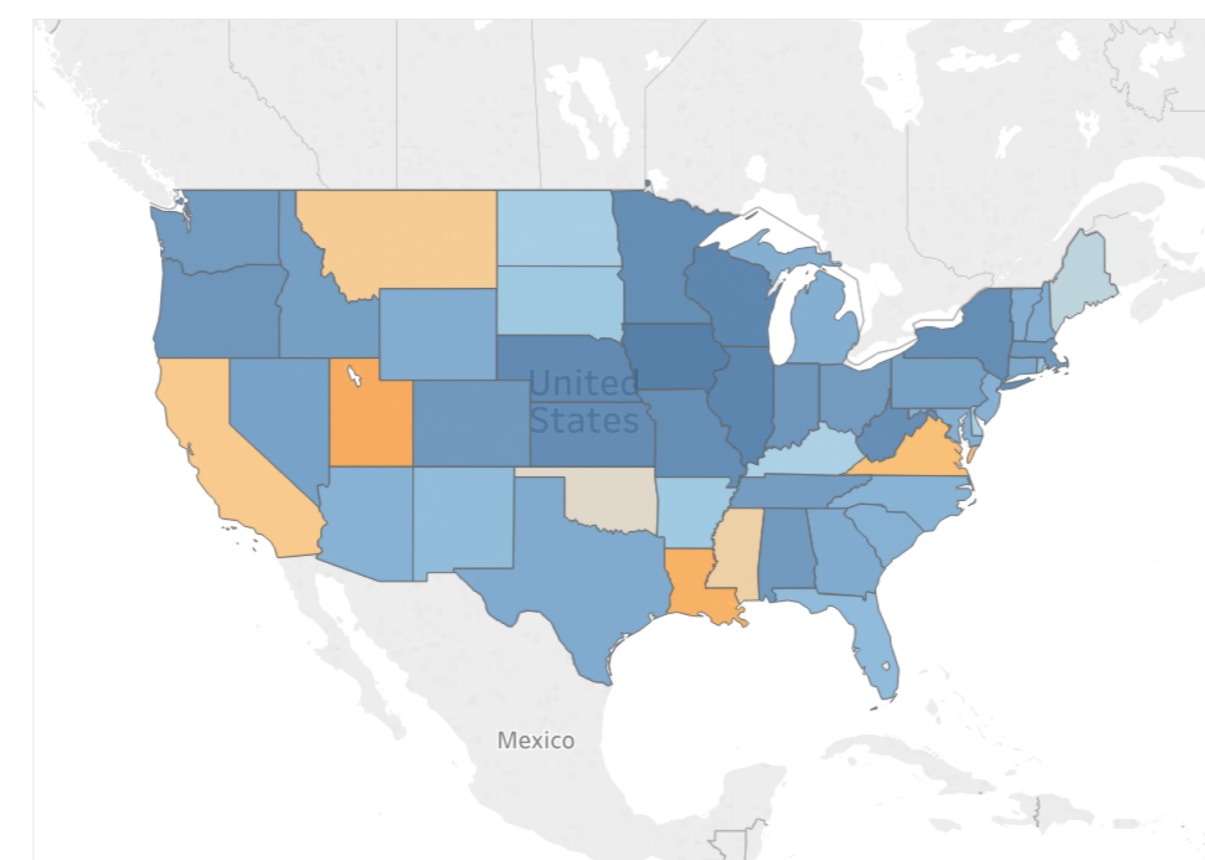


## Initial Results

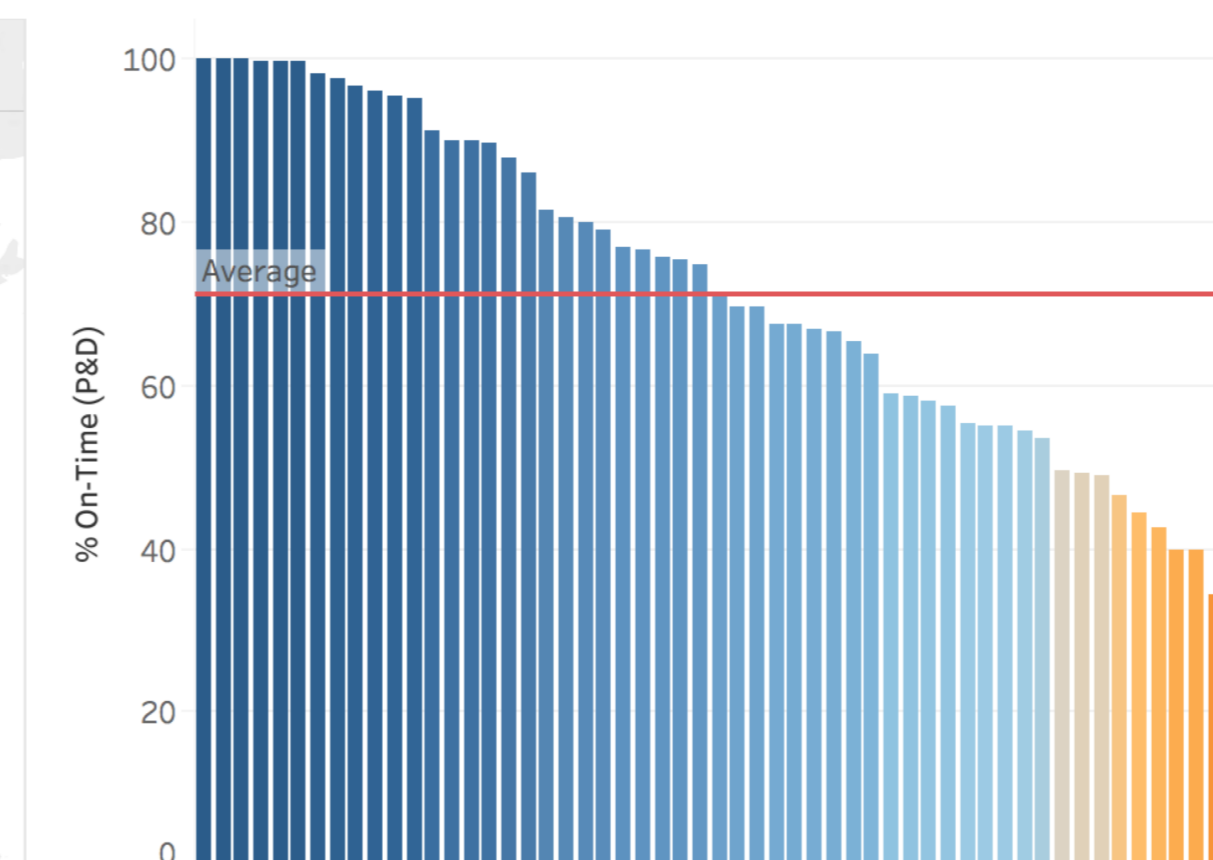
Shipper OTP & OTD



Origin OTP & OTD



Carrier OTP & OTD



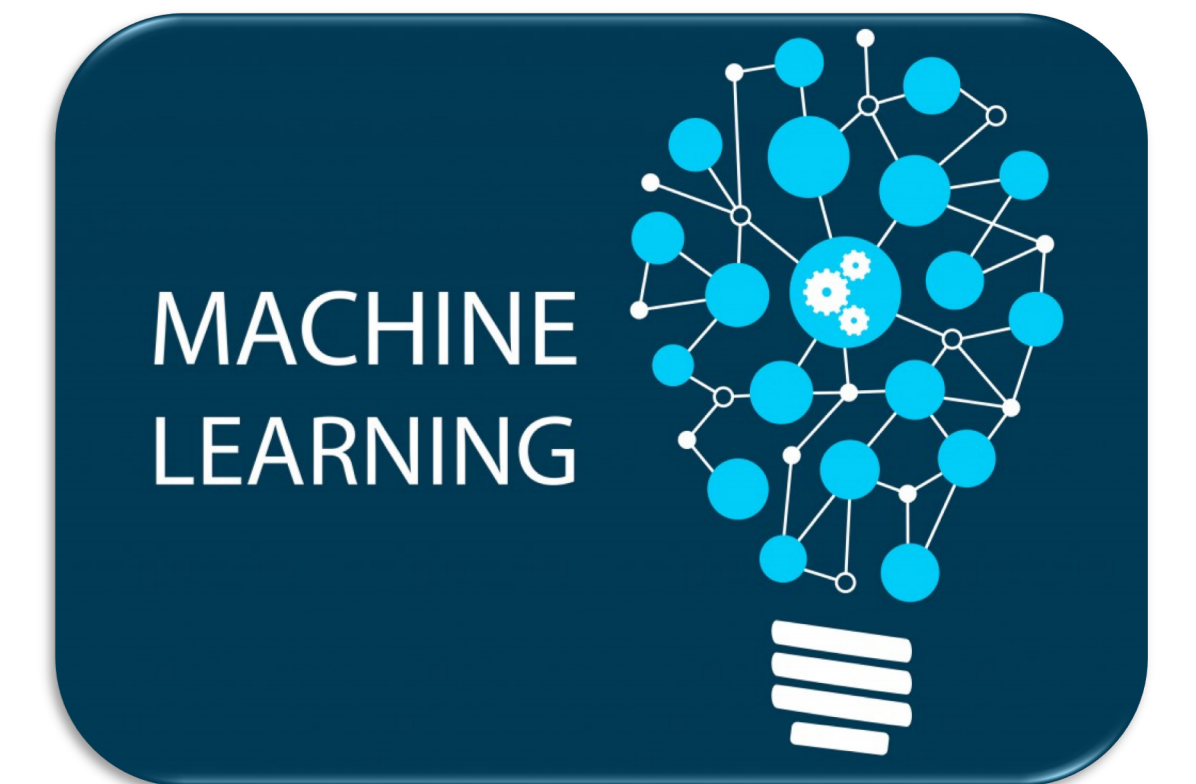
## Methodology & Variables

### Methodology:

- Supervised machine learning techniques, including linear regression, logistics regression etc.
- Dimension reduction techniques such as principle component analysis

### Variables:

- Location, Industry, Carrier, Shipment Type, Miles, Rate, Weight, Volume, Hazmat, Detention, Delivery Charge Accessorial



## Expected Contribution

Provide shippers with valuable data to help drive improvement in their LTL sourcing strategy.

