

Dell Case Study Project

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The Linear Regression Model

The Linear Regression Model: Components

The MWD prediction model will be built based on:

- Carrier
- TotalOrderQuantity
- TotalOrders
- WeekInt
- The *interaction* between TotalOrderQuantity and ServiceLevel

The following formula is passed through the lm() function:

- $MWD \sim Carrier + TotalOrderQuantity + TotalOrders + TotalOrderQuantity:ServiceLevel + WeekInt + 0$

The Linear Regression Model: Coefficient Estimates

Variable	Coefficient Estimate Explanation
Carrier	Given a carrier, the predicted number of predicted missing, wrong, or damaged is increased / decreased by the carrier's associated coefficient estimate.
TotalOrderQuantity	The predicted number of predicted missing, wrong, or damaged is increased / decreased by the product of total order quantity and the coefficient estimate.
TotalOrders	The predicted number of predicted missing, wrong, or damaged is increased / decreased by the product of total orders and the coefficient estimate.
WeekInt	The predicted number of predicted missing, wrong, or damaged is increased / decreased by the product of week integer and the coefficient estimate.
TotalOrderQuantity:ServiceLevel	The predicted number of predicted missing, wrong, or damaged is increased / decreased by the product of total order quantity and the coefficient estimate related to a given service level.

Using the model to predict the MWD rates for the Q2P2_Labeled data

The MWD prediction model built based on the train dataset (including Q1P1, Q1P2, Q1P3 and Q2P1) is used to predict the missing, wronged or lost order units for the Q2P2 data.

MWD predictions are saved in the MWD_predict column in the Q2P2 dataset. The results can be compared with the actual MWD values to assess the performance of the model.

▲	FiscalWeek	Carrier	ServiceLevel	SpamFacilityCode	Quarter	TotalOrderQuantity	TotalOrders	MWD	WeekInt	MWD_predict
7	2023-W19	Carrier 2	LTL	3EP	Q2	5435	955	0	6	3.085646229
8	2023-W19	Carrier 2	LTL	3NV	Q2	2088	181	1	6	1.083569912
9	2023-W19	Carrier 2	LTL	3PA	Q2	1832	105	5	6	0.986120523

Train Dataset:

.1882

Adjusted R-Squared

The Linear Regression
Model: Performance
Metrics

49.48

Residual Mean Standard
Error

Test Dataset:

.3826

Adjusted R-Squared

24.61

Residual Mean Standard
Error

Model Prediction Results

Discussion of the Performance Metrics and Prediction Results

The adjusted R-Squared value provides the percentage of variance which the model is able to account for, adjusted for the number of variables in the model.

- With regards to the train dataset, which was used to build the model, the model is able to account for 18.82% of the variance.
- With regards to the test dataset, the model is able to account for 38.26% of the variance.
 - Though, this larger R-Squared value is likely due to the smaller number of observations within the test dataset when compared to the train dataset.
- The model is valid if only the R-Squared metric from the test dataset is not significantly lower than that from the train dataset. In this case, the R-Squared in the test dataset is higher than in the train dataset. Therefore, the model is valid to use on the test dataset.

The residual mean standard error is the normalized distance between the predicted values and the actual values—in this case, the predicted values are the predicted MWD and the actual values are the actual MWD.

- The train dataset has a larger RMSE than the test dataset. However, RMSE is not scale invariant and hence comparison of models using this measure is affected by the scale of the data. Because the train dataset has more than three times the number of observations than the test dataset, this is one of the reasons why the RMSE of the train dataset is larger.

Discussion of the Performance Metrics and Prediction Results (Continued)

The model, and the predicted MWD values it generated, allow us to explore the general trends within the data—the primary trend being that total order quantity appears to be inversely related with occurrences of MWD percentage exceeding one percent. This will be explored more in the Tableau and RShiny Analysis sections.

However, the insights we are able to derive from the information generated by this model is limited. This is due to a number of factors:

- There are a limited number of predictor variables, which together are only able to account for so much of the variance in the data.
- Information and detail is lost in the aggregation of the data, limiting both the accuracy of the model and the insights we are able to derive.
- This lack of detail is exacerbated by the lack of access to internal data from the carriers, which would provide additional variables that would help in this and similar analysis.

Linear Regression Assumptions

Assumption 1: There exists a linear relationship between the Outcome and the Predictor variables

Based on the plots demonstrating the correlation between MWD and other predictors in the Correlation - Bivariate Analysis part, there is:

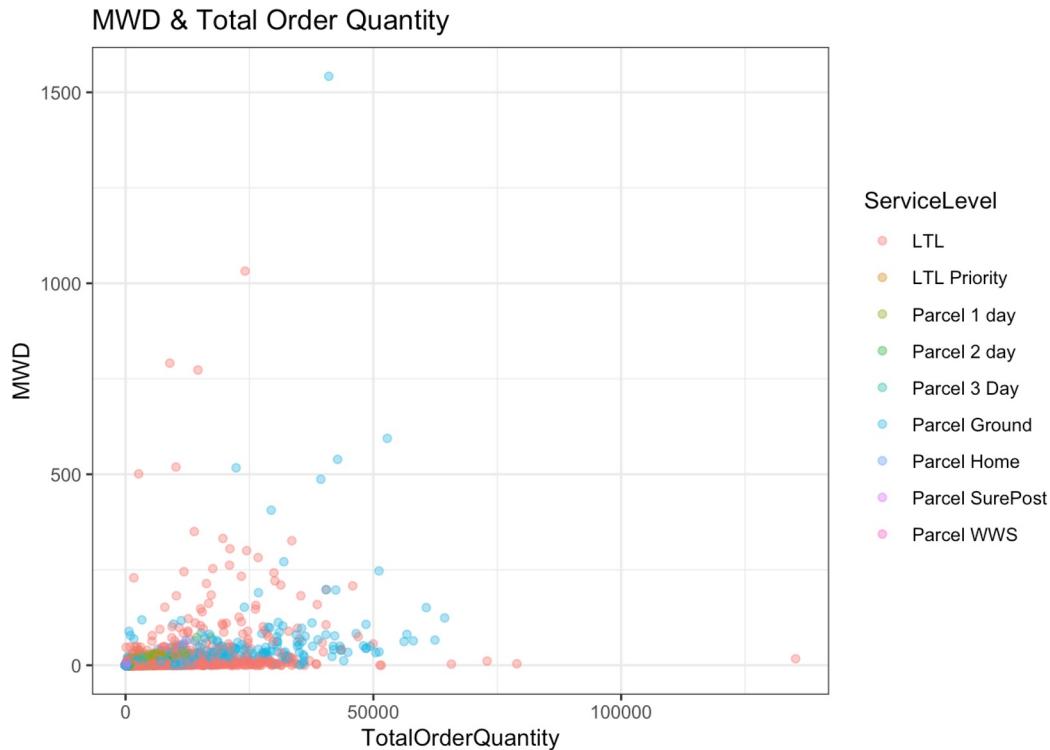
- A positive linear relationship between MWD and TotalOrderQuantity.
- A positive linear relationship between MWD and TotalOrders.
- A minimal negative linear relationship between MWD and WeekInt.

Thus, there exists a linear relationship between MWD and other numeric predictors included in the model.

MWD & TotalOrderQuantity

The scatter plot of Total Order Quantity relative to MWD confirms that there is a positive association between the two variables. In particular, the correlation is 0.36.

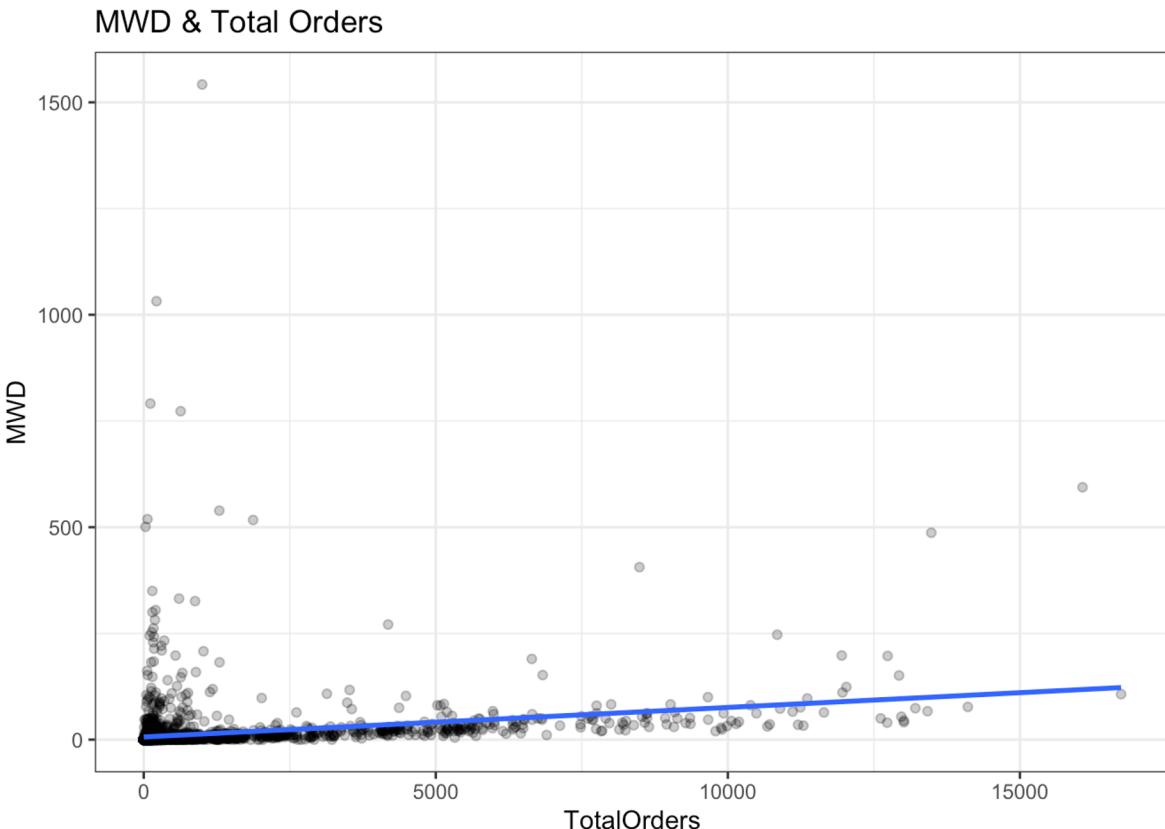
In general, the higher the total order quantity a carrier has, the higher the number of missing, wrong or damaged order units.



MWD & TotalOrders

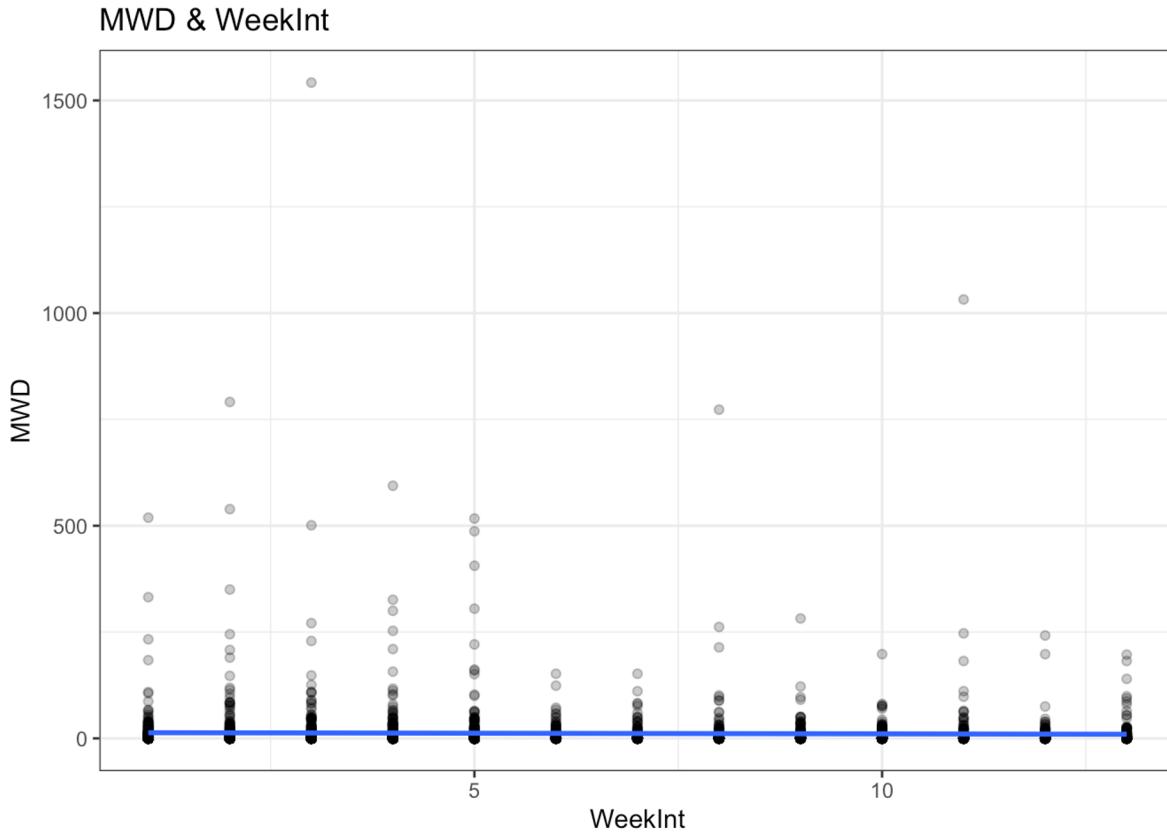
The scatter plot of Total Orders relative to MWD confirms that there is a positive association between the two variables. In particular, the correlation is 0.25.

In general, the higher the total orders a carrier has, the higher the number of missing, wrong or damaged order units.



MWD & WeekInt

The plot of WeekInt relative to MWD shows that the numbers of missing, wrong or damaged order units remain relatively constant as WeekInt increases. In particular, the correlation between two variables is -0.02.



Assumption 2: The error terms are normally distributed with a mean of 0

According to the Residual Stats in the model summary:

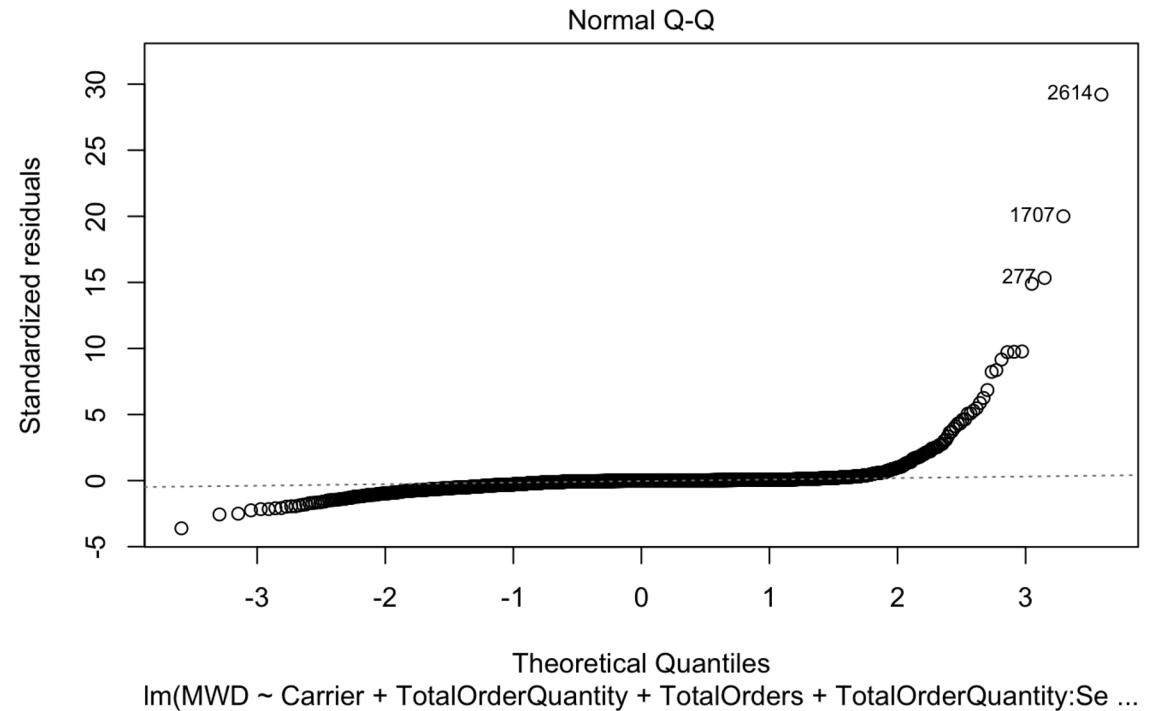
- Although the error terms are not perfectly normally distributed, the median is close to 0.
- The max is much further away from the median than the min (max = 1411.61 and min = -164.96).
- Additionally, the first quartile is further away from the median than the third quartile (1Q = -5.79 and 3Q = 1.89).

In conjunction with the information provided by the Q-Q graph, however, this assumption can be verified.

Normal Q-Q Plot

The Normal QQ plot shows that the model residuals the residuals are very closely aligned with a normal distribution between -2 to 2 standard deviation. Because the majority of points between -2 to 2 standard deviation lie on the dashed line.

However, at other quartiles, the residuals deviate from normality with positive larger theoretical quantiles deviating more.



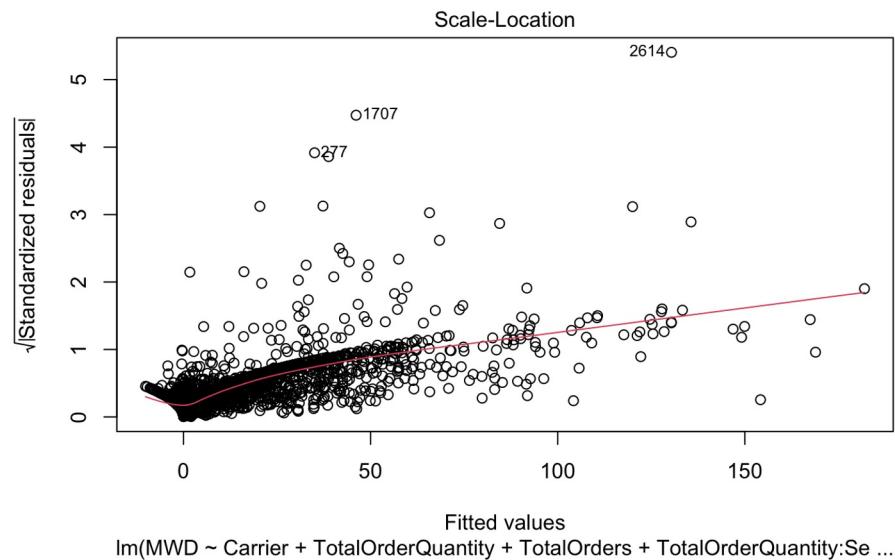
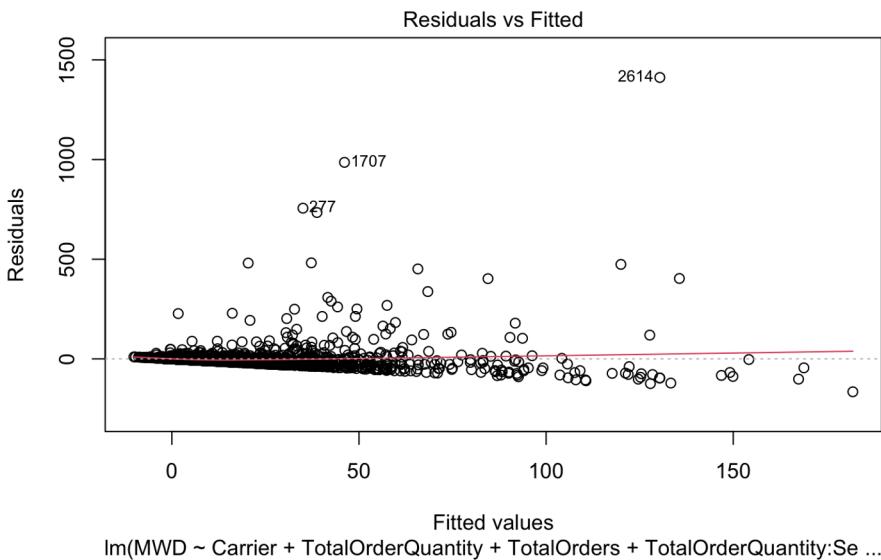
Assumption 3: The variance of the error terms is not related predicted outcomes

With regards to this assumption:

- The Residual vs Fitted plot and the Scale-Location plot show randomness in the residual distribution and the mean is close to 0. However, some outliers that make the residual range at some parts larger than the other.
- Additionally, there is a slight curve pattern in the Scale-Location plot, signaling heteroskedasticity.

The model does not have perfect homoskedasticity. Although heteroskedasticity is a concern, it is not to great extent. Because there are a few outliers that affect the variance of the error terms.

Residuals vs Fitted Plot & Scale-Location Plot



Assumption 4: No multicollinearity between the predictor variables.

Running a vif() function on the model returns the following results:

	GVIF	Df	GVIF^(1/(2*Df))
Carrier	8.590457	23	1.047863
TotalOrderQuantity	3.088399	1	1.757384
TotalOrders	7.320920	1	2.705720
WeekInt	3.517572	1	1.875519
TotalOrderQuantity:ServiceLevel	13.064296	8	1.174236

As the GVIF values for each variable are below 3, multicollinearity can be considered a non-issue.

Use the model to predict when MWD% exceeds 1% for each Carrier, Service level combination

According to the linear regression model, Total Order Quantity has the highest correlation with MWD. Therefore, further exploration is conducted to find the Total Order Quantity turning point above or below which the MWD percentage would exceed the 15 threshold.

Two approaches to find the TOQ turning points:

- Tableau assists analysis based on available data
- Rshiny interactive web application assists analysis for every possible Carrier & Service Level combinations

Tableau Analysis

Tableau Visualization Overview

After generating predicted MWD values for each observation in the train and test datasets, we merged them into a single dataset and imported the data into Tableau to derive insights through data visualization.

We built a dashboard that shows each observation as a bar in a bar graph, with the height of the bar being determined by its total order quantity. The bars are sorted from smallest to largest total order quantity. The bars are colored by whether or not the predicted MWD values exceed one percent of the total order quantity, with the red bars being representative of observations with a predicted MWD% above 1%, and the green bars being representative of observations with a predicted MWD% below 1%.

We then allowed for the observations to be filtered by service level and carrier.

Tableau Visualization Insights

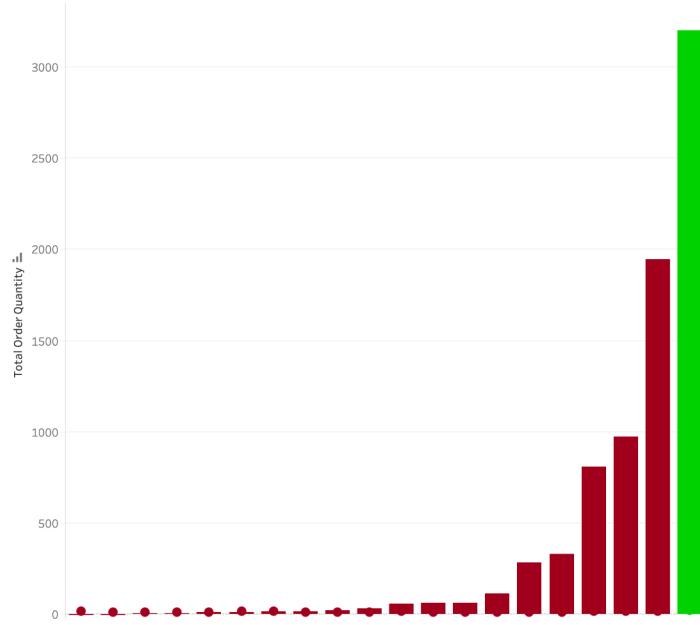
Using Tableau to analyze the combined dataset, we were able to derive the following insights:

- Instances of predicted MWD% exceeding 1% tend to increase when total order quantity levels are lower, and vice versa
- When total order quantity falls below a certain level (or rather, a range), instances of predicted MWD% exceeding 1% increase. This level may change based upon carrier and service level.
- As Parcel service levels are associated with smaller total order quantities, instances of predicted MWD% exceeding 1% are more common with than with LTL service levels
 - Carriers with the highest number of observations in which predicted MWD% exceeds 1% relative to their total number of observations tended to be Parcel service level carriers, and vice versa
- These trends are consistent with the numbers gathered from the RShiny analysis

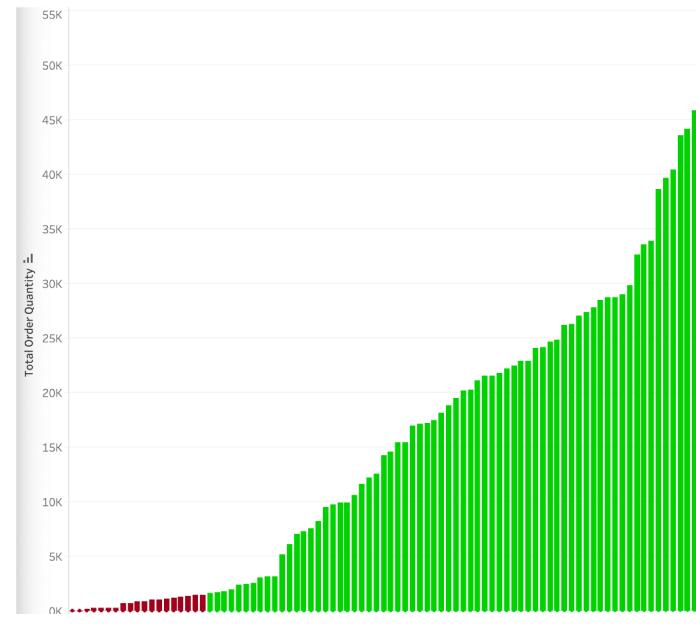
These trends will be illustrated in the following slides through a few examples.

Carrier 8

Carrier 8 has both LTL and Parcel service level observations:



Carrier 8, Parcel service levels



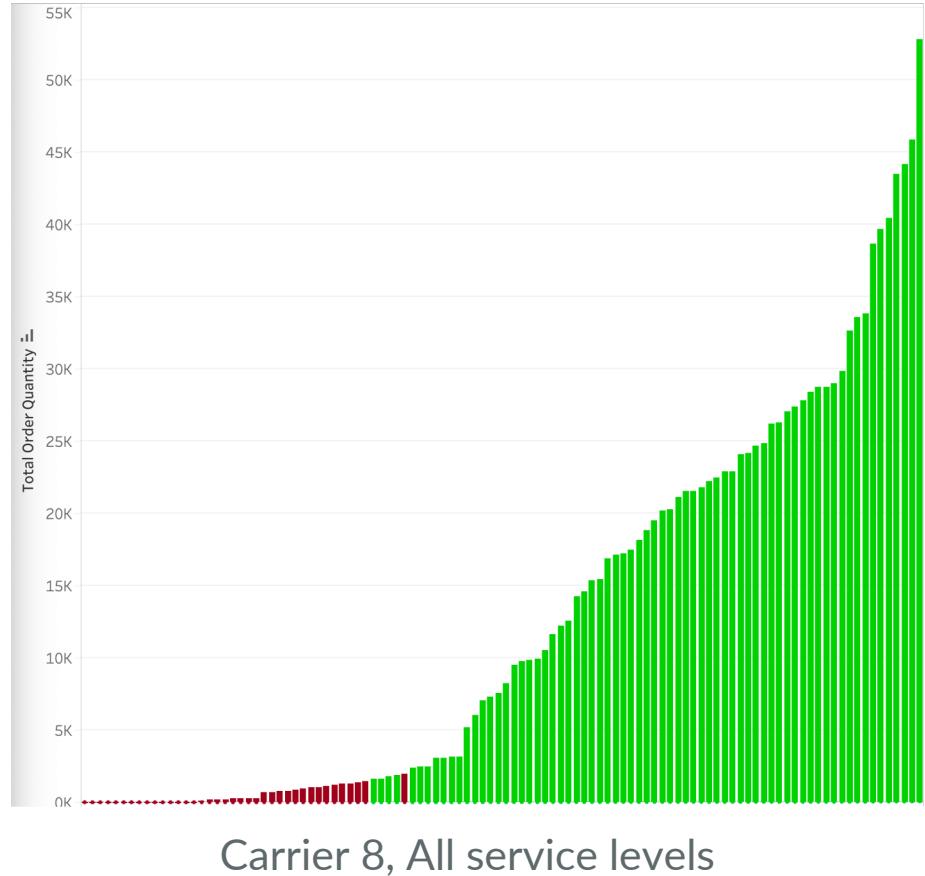
Carrier 8, LTL service levels

Carrier 8 (Continued)

As can be seen, the parcel service level observations from Carrier 8 have a relatively large number of predicted MWD percentages above 1%, while also having relatively low total order quantities

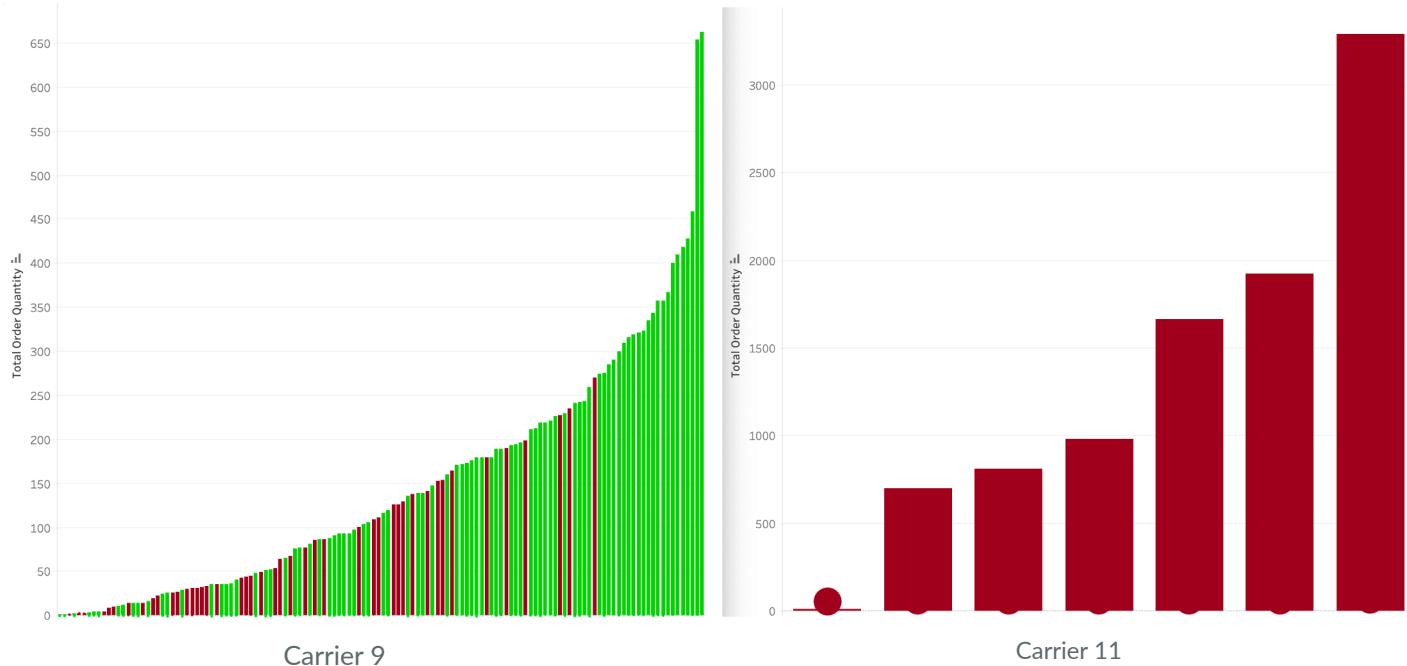
The LTL service level observations tend to have larger total order quantities, and so, a relatively small number of relatively large number of predicted MWD percentages above 1%

- The few observations with an LTL service level but are predicted to have a MWD% exceeding 1% are within the same total order quantity range as the Parcel service level observations with a predicted MWD% exceeding 1%



Carrier 9 and Carrier 11

Carriers 9 and 11 are both Parcel service level carriers. Their total order quantities are both relatively low. The model predicts, rather accurately in these instances, that a relatively high number of their observations will have MWD percentages above 1%.



RShiny Analysis

Explore Total Order Quantity and the 1% threshold of MWD percentage

Based on the MWD prediction model, an interactive web application was developed to assist the exploration of MWD percentage ($MWD/TotalOrderQuantity$) and Total Order Quantity.

The main difference of using the this machine learning interactive app and using Tableau is that the former method covers every possible Carrier and Service Level combinations (including combinations not available in the provided datasets). Meanwhile, analysis from Tableau includes only provided data.

- Source code can be found at:
github.com/nhngoc02/DellProject_R

Figure: User interface of the web application

MWD Predictor

The screenshot shows the user interface of the 'MWD Predictor' web application. On the left, there is a large input form titled 'Input parameters' containing five dropdown fields: 'Carrier' (set to 'Carrier 1'), 'Service Level' (set to 'LTL'), 'Total Orders' (set to '10'), 'Total Order Quantity' (set to '20'), and 'Week number in quarter' (set to '1'). At the bottom of this section is a blue 'Submit' button. To the right of the input form is a 'Status/Output' panel. It displays a message '[1] "Calculation complete."'. Below this, there is a table with two columns: 'Prediction' and 'MWD.Percentage'. The table shows one row with values '1.67' and '8.34 %' respectively. The entire interface has a light gray background with a white input form.

Prediction	MWD.Percentage
1.67	8.34 %

Explore Total Order Quantity and the 1% threshold of MWD percentage

On average, a carrier would exceed the 1% MWD% threshold if it has a Total Order Quantity below 976 units per order.

The Total Order Quantity levels where carriers exceed the 1% threshold vary according to each carrier.

- The min Total Order Quantity level is 4 units (for Carrier 20 with Parcel SurePost Service Level).
- The max Total Order Quantity level is 16,000 units (for Carrier 11 with Parcel Home Service Level).

All Carrier Summary	
Average	976
Min	4
Max	16000

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers

The Total Order Quantity levels where carriers exceed the 1% threshold vary according to each carrier.

Interestingly, as on the MWD prediction model, Carrier 13 and Carrier 21 would not have their MWD percentage exceed the 1% under any Total Order Quantity. Their maximum possible MWD percentage is 0.65%.

Carrier 11 has the highest Total Order Quantity level where it exceeds the 1% threshold (the average TOQ of 8,668 units). In other words, on average, Carrier 11 would exceed the 1% MWD% threshold if it has a Total Order Quantity below 8,668 units per order.

Carrier 20 has the lowest Total Order Quantity level where it exceeds the 1% threshold (the average TOQ of 34 units). In other words, on average, Carrier 20 would exceed the 1% MWD% threshold if it has a Total Order Quantity below 34 units per order.

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers (Detailed data)

Carrier	Carrier 1	Carrier 2	Carrier 3	Carrier 4	Carrier 5	Carrier 6
Average TOQ	262	111	179	209	2771	252
Min TOQ	25	11	17	20	260	24
Max TOQ	480	205	330	380	5100	460

Carrier	Carrier 7	Carrier 8	Carrier 9	Carrier 10	Carrier 11	Carrier 12
Average TOQ	95	2448	364	113	8668	3687
Min TOQ	9	230	35	11	813	347
Max TOQ	175	4500	660	210	16000	6700

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers (Detailed data)

Carrier	Carrier 13	Carrier 14	Carrier 15	Carrier 16	Carrier 17	Carrier 18
Average TOQ	MWD percentage not exceed 1%	232	1451	235	319	56
Min TOQ		22	137	23	30	6
Max TOQ		430	2650	430	580	104

Carrier	Carrier 19	Carrier 20	Carrier 21	Carrier 22	Carrier 23
Average TOQ	284	34	MWD percentage not exceed 1%	354	325
Min TOQ	27	4		34	31
Max TOQ	520	62		650	600

Rank the Carriers based on their likelihood of exceeding the 1% MWD percentage threshold

Because everything below a TOQ turning point would make a carrier exceed 1% MWD percentage, a high TOQ turning point means more likelihood of exceeding 1% MWD percentage. In contrast, a low TOQ turning point means less likelihood of exceeding 1% MWD percentage.

Since Carrier 13 and Carrier 21 would not have their MWD percentage exceed the 1% under any Total Order Quantity based on the model, they stand the lowest likelihood of exceeding 1% MWD%.

Because Carrier 11 has the highest Total Order Quantity level where it exceeds the 1% threshold and Carrier 20 has the lowest Total Order Quantity level where it exceeds the 1% threshold:

- Carrier 11 stands the highest chance of exceeding the threshold.
- Carrier 20 is the third least likely to exceed the threshold (after Carrier 13 and Carrier 21).

Rank the Carriers based on their likelihood of exceeding the 1% MWD percentage threshold

Rank	Carrier	Average TOQ
1	Carrier 13	
1	Carrier 21	
3	Carrier 20	34
4	Carrier 18	56
5	Carrier 7	95
6	Carrier 2	111
7	Carrier 10	113
8	Carrier 3	179
9	Carrier 4	209
10	Carrier 14	232
11	Carrier 16	235
12	Carrier 6	252

Rank	Carrier	Average TOQ
13	Carrier 1	262
14	Carrier 19	284
15	Carrier 17	319
16	Carrier 23	325
17	Carrier 22	354
18	Carrier 9	364
19	Carrier 15	1,451
20	Carrier 8	2,448
21	Carrier 5	2,771
22	Carrier 12	3,687
23	Carrier 11	8,668

Least likely

Most likely

Full ranking of Carriers
based on their likelihood
of exceeding 1% MWD%
(from least to most likely)

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Service Levels

The Total Order Quantity levels where one carrier exceeds the 1% threshold also vary depending on which Service Level that carrier has.

For example:

- Service Level Parcel Home has the highest Total Order Quantity level below which a carrier exceeds the 1% threshold. Because everything below that TOQ turning point would make a carrier exceed 1% MWD percentage, a high TOQ turning point means more likelihood of exceeding 1% MWD percentage. Therefore, Parcel Home is the Service Level with the highest likelihood of exceeding the threshold.
- Service Level Parcel SurePost has the lowest Total Order Quantity level with which a carrier exceeds the 1% threshold. Because everything below that TOQ turning point would make a carrier exceed 1% MWD percentage, a low TOQ turning point means less likelihood of exceeding 1% MWD percentage. Therefore, Parcel SurePost is the Service Level with the lowest likelihood of exceeding the threshold.

Rank the Service Level based on their likelihood of exceeding the 1% MWD percentage threshold

Full ranking of Service Levels based on their likelihood of exceeding 1% MWD% (from least to most likely)

Rank	Service Level	Average TOQ	Min TOQ	Max TOQ
1	Parcel SurePost	101	4	813
2	LTL	791	25	6,400
3	LTL Priority	938	30	7,600
4	Parcel Ground	1,011	32	8,200
5	Parcel 2 Day	1,099	35	8,900
6	Parcel WWS	1,105	35	9,000
7	Parcel 1 day	1,226	39	9,900
8	Parcel 3 Day	1,386	44	11,200
9	Parcel Home	1,963	62	16,000

Least likely

Most likely

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers & Service Levels

Beside the summarized data based on different Carriers and Service Levels, more detailed statistics on the Total Order Quantity turning point below which a carrier would exceed 1% MWD% will provided in the following.

These data tables are created from the results of exploring the Rshiny interactive web application.

The statistics can be used to further optimize the Total Order Quantity for each carrier per order with a particular service level to avoid having 1% or higher MWD percentage.

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers & Service Levels (Detailed data)

Carrier	Service Level	TOQ
Carrier 1	LTL	193
	LTL Priority	230
	Parcel 1 day	300
	Parcel 2 Day	270
	Parcel 3 Day	340
	Parcel WWS	270
	Parcel SurePost	25
	Parcel Home	480
	Parcel Ground	248
	Average	262
	Min	25
	Max	480
Carrier 2	LTL	82
	LTL Priority	98
	Parcel 1 day	127
	Parcel 2 Day	115
	Parcel 3 Day	145
	Parcel WWS	115
	Parcel SurePost	11
	Parcel Home	205
	Parcel Ground	105
	Average	111
	Min	11
	Max	205

Carrier	Service Level	TOQ
Carrier 3	LTL	132
	LTL Priority	156
	Parcel 1 day	205
	Parcel 2 Day	185
	Parcel 3 Day	235
	Parcel WWS	185
	Parcel SurePost	17
	Parcel Home	330
	Parcel Ground	170
	Average	179
	Min	17
	Max	330
Carrier 4	LTL	155
	LTL Priority	183
	Parcel 1 day	240
	Parcel 2 Day	215
	Parcel 3 Day	270
	Parcel WWS	215
	Parcel SurePost	20
	Parcel Home	380
	Parcel Ground	199
	Average	209
	Min	20
	Max	380

Carrier	Service Level	TOQ
Carrier 5	LTL	2050
	LTL Priority	2430
	Parcel 1 day	3200
	Parcel 2 Day	2850
	Parcel 3 Day	3600
	Parcel WWS	2850
	Parcel SurePost	260
	Parcel Home	5100
	Parcel Ground	2600
	Average	2771
	Min	260
	Max	5100
Carrier 6	LTL	186
	LTL Priority	220
	Parcel 1 day	290
	Parcel 2 Day	260
	Parcel 3 Day	330
	Parcel WWS	260
	Parcel SurePost	24
	Parcel Home	460
	Parcel Ground	238
	Average	252
	Min	24
	Max	460

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers & Service Levels (Detailed data)

Carrier	Service Level	TOQ
Carrier 9	LTL	270
	LTL Priority	318
	Parcel 1 day	420
	Parcel 2 Day	375
	Parcel 3 Day	475
	Parcel WWS	375
	Parcel SurePost	35
	Parcel Home	660
	Parcel Ground	345
	Average	364
	Min	35
	Max	660
Carrier 10	LTL	84
	LTL Priority	99
	Parcel 1 day	129
	Parcel 2 Day	116
	Parcel 3 Day	146
	Parcel WWS	116
	Parcel SurePost	11
	Parcel Home	210
	Parcel Ground	107
	Average	113
	Min	11
	Max	210

Carrier	Service Level	TOQ
Carrier 11	LTL	6400
	LTL Priority	7600
	Parcel 1 day	9900
	Parcel 2 Day	8900
	Parcel 3 Day	11200
	Parcel WWS	9000
	Parcel SurePost	813
	Parcel Home	16000
	Parcel Ground	8200
	Average	8668
	Min	813
	Max	16000
Carrier 12	LTL	2740
	LTL Priority	3250
	Parcel 1 day	4250
	Parcel 2 Day	3800
	Parcel 3 Day	4800
	Parcel WWS	3800
	Parcel SurePost	347
	Parcel Home	6700
	Parcel Ground	3500
	Average	3687
	Min	347
	Max	6700

Carrier	Service Level	Max MWD%
Carrier 13	LTL	0.14%
	LTL Priority	0.27%
	Parcel 1 day	0.44%
	Parcel 2 Day	0.38%
	Parcel 3 Day	0.51%
	Parcel WWS	0.38%
	Parcel SurePost	-5.79% or 0%
	Parcel Home	0.65%
	Parcel Ground	0.33%
	Average MWD%	0.34%
	Min MWD%	0%
	Max MWD%	0.65%
Carrier 21	LTL	0.13%
	LTL Priority	0.27%
	Parcel 1 day	0.45%
	Parcel 2 Day	0.38%
	Parcel 3 Day	0.51%
	Parcel WWS	0.38%
	Parcel SurePost	-5.79% or 0%
	Parcel Home	0.65%
	Parcel Ground	0.33%
	Average MWD%	0.34%
	Min MWD%	0%
	Max MWD%	0.65%

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers & Service Levels (Detailed data)

Carrier	Service Level	TOQ
Carrier 14	LTL	171
	LTL Priority	202
	Parcel 1 day	265
	Parcel 2 Day	237
	Parcel 3 Day	300
	Parcel WWS	237
	Parcel SurePost	22
	Parcel Home	430
	Parcel Ground	220
	Average	232
	Min	22
	Max	430
Carrier 15	LTL	1070
	LTL Priority	1270
	Parcel 1 day	1660
	Parcel 2 Day	1500
	Parcel 3 Day	1900
	Parcel WWS	1500
	Parcel SurePost	137
	Parcel Home	2650
	Parcel Ground	1370
	Average	1451
	Min	137
	Max	2650

Carrier	Service Level	TOQ
Carrier 16	LTL	175
	LTL Priority	205
	Parcel 1 day	270
	Parcel 2 Day	242
	Parcel 3 Day	305
	Parcel WWS	242
	Parcel SurePost	23
	Parcel Home	430
	Parcel Ground	222
	Average	235
	Min	23
	Max	430
Carrier 17	LTL	235
	LTL Priority	280
	Parcel 1 day	370
	Parcel 2 Day	330
	Parcel 3 Day	415
	Parcel WWS	330
	Parcel SurePost	30
	Parcel Home	580
	Parcel Ground	300
	Average	319
	Min	30
	Max	580

Carrier	Service Level	TOQ
Carrier 18	LTL	42
	LTL Priority	49
	Parcel 1 day	65
	Parcel 2 Day	58
	Parcel 3 Day	73
	Parcel WWS	58
	Parcel SurePost	6
	Parcel Home	104
	Parcel Ground	53
	Average	56
	Min	6
	Max	104
Carrier 19	LTL	210
	LTL Priority	250
	Parcel 1 day	325
	Parcel 2 Day	290
	Parcel 3 Day	370
	Parcel WWS	295
	Parcel SurePost	27
	Parcel Home	520
	Parcel Ground	270
	Average	284
	Min	27
	Max	520

Explore Total Order Quantity and the 1% threshold of MWD percentage - Individual Carriers & Service Levels (Detailed data)

Carrier	Service Level	TOQ
Carrier 20	LTL	25
	LTL Priority	30
	Parcel 1 day	39
	Parcel 2 Day	35
	Parcel 3 Day	44
	Parcel WWS	35
	Parcel SurePost	4
	Parcel Home	62
	Parcel Ground	32
	Average	34
	Min	4
	Max	62

Carrier	Service Level	TOQ
Carrier 22	LTL	263
	LTL Priority	310
	Parcel 1 day	405
	Parcel 2 Day	365
	Parcel 3 Day	460
	Parcel WWS	365
	Parcel SurePost	34
	Parcel Home	650
	Parcel Ground	335
	Average	354
	Min	34
	Max	650

Carrier	Service Level	TOQ
Carrier 23	LTL	240
	LTL Priority	285
	Parcel 1 day	375
	Parcel 2 Day	335
	Parcel 3 Day	420
	Parcel WWS	335
	Parcel SurePost	31
	Parcel Home	600
	Parcel Ground	306
	Average	325
	Min	31
	Max	600