

# An Analysis of Troy Teslike's Spreadsheet Data

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## 1 Introduction

The analysis of such a rich supply of Tesla Model 3 spreadsheet data found here is only made possible through the sustained and ongoing maintenance efforts of Troy Teslike. Troy has collected up to 34 pieces of information (data fields) for each Username ordering and completing purchase of a Tesla Model 3 vehicle.

Analyses below are carried using the R statistical programming language in conjunction with the integrated programming environment offered by Rstudio. R is completely open source while RStudio has versions which are open source.

### 1.1 Usernames & Order Dates

Troy's spreadsheet as of today, June 26, 2022, contains 4593 entries (rows). Rows without a corresponding a Username variable have been dropped from further consideration. Accordingly, at the present time, there are 4592 rows corresponding to 4592 Usernames. Order dates range from March 31, 2016 onward.

## 2 Counts Analyses

### 2.1 Model 3: Order & Delivery Numbers by Year

Year	Ordered	Delivered
2016	4	0
2017	7	3
2018	1581	1577
2019	703	693
2020	378	387
2021	790	561
2022	1129	574
Total	4592	3795

### 2.2 Model 3 Orders:

#### 2.2.1 Stratified by Trim Level

Table 2: Counts for Trim Level [2016 thru 2022 to date]

	Trim	count	%
Model 3 LR AWD		2192	47.7
Model 3 SR+		795	17.3
Model 3 Performance		781	17.0
Model 3 LR		672	14.6
Model 3 MR		127	2.8
Model 3 SR		25	0.5
Total		4592	100.0

#### 2.2.2 Stratified by Trim Level & Year

Table 3: Counts for Trim Level Stratified by Year

Trim	2016	2017	2018	2019	2020	2021	2022	Total
Model 3 LR	2	5	628	36	1	0	0	672
Model 3 LR AWD	2	1	613	271	182	406	717	2192
Model 3 Performance	0	1	217	196	83	89	195	781
Model 3 MR	0	0	121	6	0	0	0	127
Model 3 SR	0	0	2	18	5	0	0	25
Model 3 SR+	0	0	0	176	107	295	217	795
Total	4	7	1581	703	378	790	1129	4592

### 2.2.3 Stratified by Paint Color

Table 4: Counts for Paint Color [2016 thru 2022 to date]

Paint Color	count	%
Pearl White Multi-Coat	1305	28.4
Midnight Silver Metallic	1138	24.8
Deep Blue Metallic	923	20.1
Red Multi-Coat	577	12.6
Solid Black	478	10.4
Silver Metallic	98	2.1
Obsidian Black Metallic	58	1.3
Unspecified	15	0.3
Total	4592	100.0

### 2.2.4 Stratified by Paint Color & Year

Table 5: Counts for Paint Color Stratified by Year

Paint Color	2016	2017	2018	2019	2020	2021	2022	Total
Pearl White Multi-Coat	0	2	238	260	160	308	337	1305
Midnight Silver Metallic	1	1	357	128	95	179	377	1138
Deep Blue Metallic	1	1	360	148	53	156	204	923
Red Multi-Coat	0	1	287	74	39	70	106	577
Solid Black	0	0	185	88	31	75	99	478
Silver Metallic	1	1	96	0	0	0	0	98
Obsidian Black Metallic	1	0	57	0	0	0	0	58
Unspecified	0	1	1	5	0	2	6	15
Total	4	7	1581	703	378	790	1129	4592

## 2.2.5 Stratified by Country

Table 6: Model 3 Orders by Country [2016 thru 2022 to date]

Country	count	%
USA	3977	86.6
Canada	373	8.1
Other (include country together with city)	148	3.2
United Kingdom	37	0.8
Germany	15	0.3
France	8	0.2
Belgium	6	0.1
Norway	6	0.1
Spain	6	0.1
Switzerland	5	0.1
Netherlands	4	0.1
Sweden	3	0.1
China	1	0.0
Italy	1	0.0
Japan	1	0.0
Luxembourg	1	0.0
Total	4592	100.0

### 2.2.5.1 Remarks

- Within Troy's spreadsheet American Model 3 orders, as expected, comprise the vast majority of orders. The next section details Country = "USA" Model 3 orders by Region of the Country.

## 2.2.6 Stratified by Region of the Country = "USA"

It is convenient to partition the 50 United States into 10 regions. I have employed the following "standard" Region designation defined here. For Tesla Model 3 purposes it will be convenient to modify the aforementioned assignment of states to regions by assigning California its own distinct region. Those data records lacking geographical information: **City or Town** and **State or Province** have been assigned to the Region designated **Unspecified**.

Table 7: Model 3 Orders by Region of the Country [2016 thru 2022 to date]

Region	count	%
California	1128	28.4
South	727	18.3
Midwest	472	11.9
Southwest	456	11.5
Mid Atlantic	433	10.9
Pacific Northwest	268	6.7
Rocky Mountain	206	5.2
New England	187	4.7
Great Plains	67	1.7
Unspecified	22	0.6
Alaska & Hawaii	11	0.3
Total	3977	100.0

## 2.2.7 Stratified by Region of USA & Year

Table 8: Model 3 Orders Stratified by Region of the Country and Year

Region	2016	2017	2018	2019	2020	2021	2022	Total
California	1	3	415	192	79	182	256	1128
South	0	1	253	105	63	124	181	727
Midwest	1	0	203	58	38	77	95	472
Southwest	0	0	136	74	40	68	138	456
Mid Atlantic	0	1	156	58	41	72	105	433
Pacific Northwest	1	1	126	41	21	34	44	268
Rocky Mountain	1	0	74	46	13	27	45	206
New England	0	0	87	23	13	26	38	187
Great Plains	0	0	25	7	6	18	11	67
Unspecified	0	1	4	5	2	2	8	22
Alaska & Hawaii	0	0	2	3	2	3	1	11
Total	4	7	1481	612	318	633	922	3977

## 3 Analysis of *Wait Time*: Delivery Date *Minus* Order Date

### 3.1 Wait Time by Region of the USA

Below we calculate *wait time* for each Region = “USA” spreadsheet entry subject to:

- Both delivery and order dates are available.
- Order date is January 1 2018 or later.
- Wait time is greater than zero days. Several entries corresponded to **negative** wait times and so were removed from consideration.

Table 9: Waiting Time Statistics by Region of the Country [2016 thru 2022 to date]

Region	Median	Mean	25th Percentile	75th Percentile	Interquartile Range	N
California	44.0 days	50.9 days	26 days	68 days	42 days	958
South	49.0 days	55.2 days	29 days	76 days	47 days	606
Midwest	49.0 days	54.0 days	29 days	77 days	48 days	412
Southwest	52.0 days	54.6 days	30 days	75 days	44 days	375
Mid Atlantic	54.0 days	60.5 days	32 days	84 days	52 days	367
Pacific Northwest	47.0 days	52.1 days	27 days	72 days	45 days	237
Rocky Mountain	50.0 days	51.6 days	26 days	79 days	53 days	177
New England	61.5 days	67.3 days	39 days	88 days	49 days	166
Great Plains	52.0 days	56.9 days	37 days	74 days	37 days	58
Unspecified	32.0 days	42.4 days	16 days	72 days	56 days	15
Alaska & Hawaii	68.0 days	67.1 days	54 days	87 days	33 days	9
Total						3380

#### 3.1.1 Remarks:

- Very few Model 3 orders derive from years 2016 and 2017. For that reason the calculated “**Median Wait Time (Days) by Region of the USA & Year**” section, below, will exclude years 2016 and 2017 from consideration.

- The **median** is listed first above as it generally a more *robust* measure of “central tendency” than is the **mean**. Recall when data is ordered from its smallest value to its largest value, the **median** is defined to be the “middle” value; e.g., the value where half the data values will be larger than the **median** and half the data values will be smaller than the **median**.
- The **Interquartile Range** is the length of the interval centered about the **Median** commencing from the **25th Percentile** and ending at the **75th Percentile**. This interval contains about half of the data observed. For example, for the Region = “California”, we can expect about *half* of the **958** California wait times to lie between *26 days and 68 days* while approximately a *quarter* of the California wait times can be expected to be less than *26 days* and another *quarter* of California wait times can be expected to be greater than *68 days*.

### 3.2 Median Wait Time (Days) by Region of the USA & Year

Table 10: Median Wait Time (Days) by Region of Country over Years: 2018 through 2022 to date

Region	2018	2019	2020	2021	2022
California	43.5	28	34.0	54.0	78
South	50.0	27	45.0	54.0	92
Midwest	55.0	21	36.5	49.0	91
Mid Atlantic	65.0	25	42.0	55.5	86
Southwest	61.0	26	46.5	46.0	87
Pacific Northwest	52.0	26	38.0	58.5	83
New England	75.0	24	43.0	45.5	91
Rocky Mountain	72.0	22	33.0	48.5	81
Great Plains	57.5	25	40.0	58.0	91
Unspecified	31.5	14	39.0	36.0	97
Alaska & Hawaii	67.5	34	101.0	70.5	