

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 22, 2022, contains 4568 entries (rows). Rows without a corresponding a Username variable have been dropped from further consideration. Accordingly, at the present time, there are 4567 rows corresponding to 4567 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	4
2018	1581	1577
2019	703	693
2020	379	387
2021	787	561
2022	1106	557
Total	4567	3779

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		2174	47.6
Model 3 SR+		791	17.3
Model 3 Performance		778	17.0
Model 3 LR		672	14.7
Model 3 MR		127	2.8
Model 3 SR		25	0.5
Total		4567	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	183	404	700	2174
Model 3 Performance		0	1	217	196	83	89	192	778
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	294	214	791
Total		4	7	1581	703	379	787	1106	4567

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	1301	28.5
Midnight Silver Metallic	1130	24.7
Deep Blue Metallic	917	20.1
Red Multi-Coat	571	12.5
Solid Black	476	10.4
Silver Metallic	98	2.1
Obsidian Black Metallic	58	1.3
Unspecified	16	0.4
Total	4567	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	333	1301
Midnight Silver Metallic	1	1	357	128	96	177	370	1130
Deep Blue Metallic	1	1	360	148	53	156	198	917
Red Multi-Coat	0	1	287	74	39	69	101	571
Solid Black	0	0	185	88	31	75	97	476
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	7	16
Total	4	7	1581	703	379	787	1106	4567

2.2.5 Stratified by Country

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

	Country	count	%
	USA	3955	86.6
	Canada	372	8.1
	Other (include country together with city)	147	3.2
	United Kingdom	36	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	4567	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	1121	28.3
	South	725	18.3
	Midwest	466	11.8
	Southwest	454	11.5
	Mid Atlantic	433	10.9
	Pacific Northwest	268	6.8
	Rocky Mountain	202	5.1
	New England	186	4.7
	Great Plains	67	1.7
	Unspecified	22	0.6
	Alaska & Hawaii	11	0.3
	Total	3955	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	80	181	249	1121
South	0	1	253	105	63	124	179	725
Midwest	1	0	203	58	38	77	89	466
Southwest	0	0	136	74	40	68	136	454
Mid Atlantic	0	1	156	58	41	72	105	433
Pacific Northwest	1	1	126	41	21	33	45	268
Rocky Mountain	1	0	74	46	13	27	41	202
New England	0	0	87	23	13	26	37	186
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	319	631	901	3955

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	50.1 days	26 days	67 days	41 days	953
South	49.0 days	55.0 days	28 days	76 days	48 days	603
Midwest	48.5 days	53.7 days	28 days	75 days	47 days	406
Southwest	52.0 days	54.4 days	30 days	74 days	44 days	373
Mid Atlantic	54.0 days	60.4 days	32 days	83 days	51 days	366
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	61.0 days	67.3 days	39 days	89 days	50 days	165
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						3362

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 **953** California wait times to lie between *26 days and 67 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 *67 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	53.5	77.0
South	50.0	27	45.0	54.0	91.5
Midwest	55.0	21	36.5	49.0	91.0
Mid Atlantic	65.0	25	42.0	55.5	86.5
Southwest	61.0	26	46.5	46.0	87.0
Pacific Northwest	52.0	26	38.0	58.5	83.0
New England	75.0	24	43.0	45.5	92.0
Rocky Mountain	72.0	22	33.0	48.5	81.0
Great Plains	57.5	25	40.0	58.0	91.0
Unspecified	31.5	14	39.0	36.0	97.0
Alaska & Hawaii	67.5	34	101.0	70.5	