Notebook

May 1, 2024

1 SB 125

1.1 Cycle 4, Spring FY2024

1.1.1 Freight Truck Economic Competitiveness

Created March 2024
Analysis and write-up completed by Noah Sanchez for Kelly McClendon for a request he received from CTC, Angel, and Hannah
Geodatabase provided by Affi N'Guessan contained data from the FAF5 https://www.bts.gov/faf

TCEP/SCCP Cycle 4 Project's included in the TCEP/SCCP Cycle 4 (https://experience.arcgis.com/experience/1173a09d9f7a452ca7be858c39546678/) were analyzed for freight movement to identify Freight Truck Economic Competitiveness.

Methodology ArcGIS was used to identify the segments in the FAF5 datasets that corresponded with Caltrans' Projects that were included in the TCEP/SCCP Cycle 4. Not all projects were included, only non-rail projects that had project lines that were within the limits of the various projects. Attribute tables that included the segments of the various projects were exported from ArcGIS Pro and imported into JupyterLab for this analysis. Each Project had the values in the column ['TOT_Tons_All_22'] averaged.

Deliverable This analysis is not a comprehensive economic analysis, but is being used to add to the conversation. The final deliverable is a CSV or Excel doc containing the Economic Competitive Analysis results and other general project information. The final deliverable was sent to Kelly McClendon and Affi N'Guessan via email on 3/21/2024.

Additional Research We discussed potential future analysis could be performed, including a more detailed breakdown of the freight being transported per segment in an effort to identify the average value of the freight in a given area.

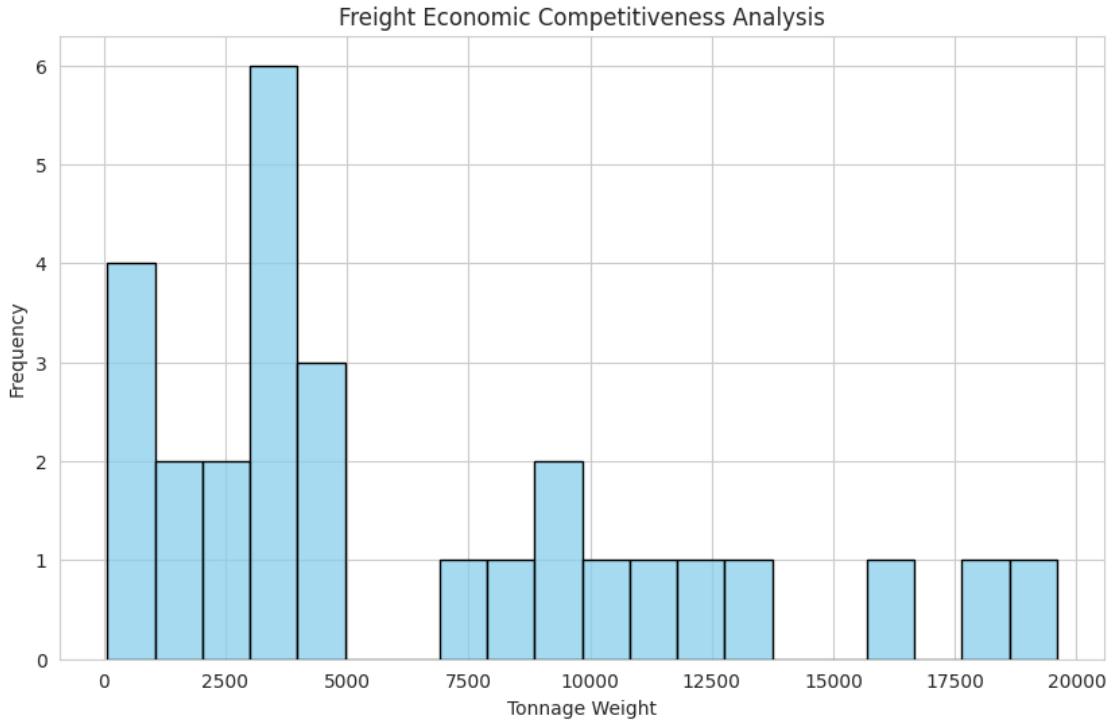
```
/opt/conda/lib/python3.9/site-packages/google/auth/_default.py:78: UserWarning:
Your application has authenticated using end user credentials from Google Cloud
SDK without a quota project. You might receive a "quota exceeded" or "API not
enabled" error. See the following page for troubleshooting:
https://cloud.google.com/docs/authentication/adc-troubleshooting/user-creds.
  warnings.warn(_CLOUD_SDK_CREDENTIALS_WARNING)
```

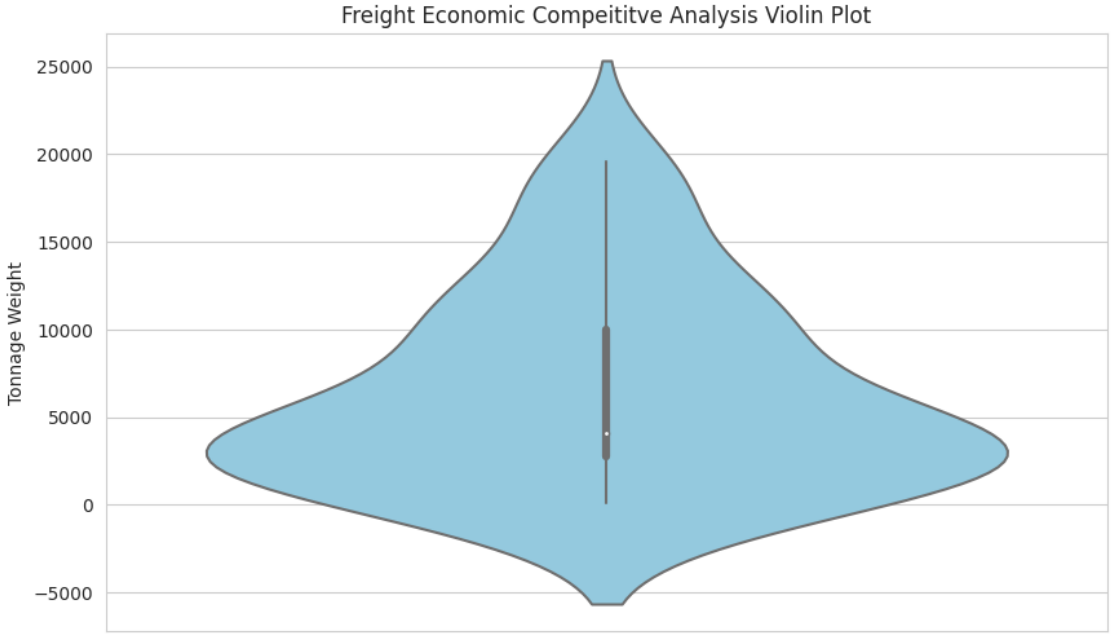
Freight Economic Competitiveness Analysis Results

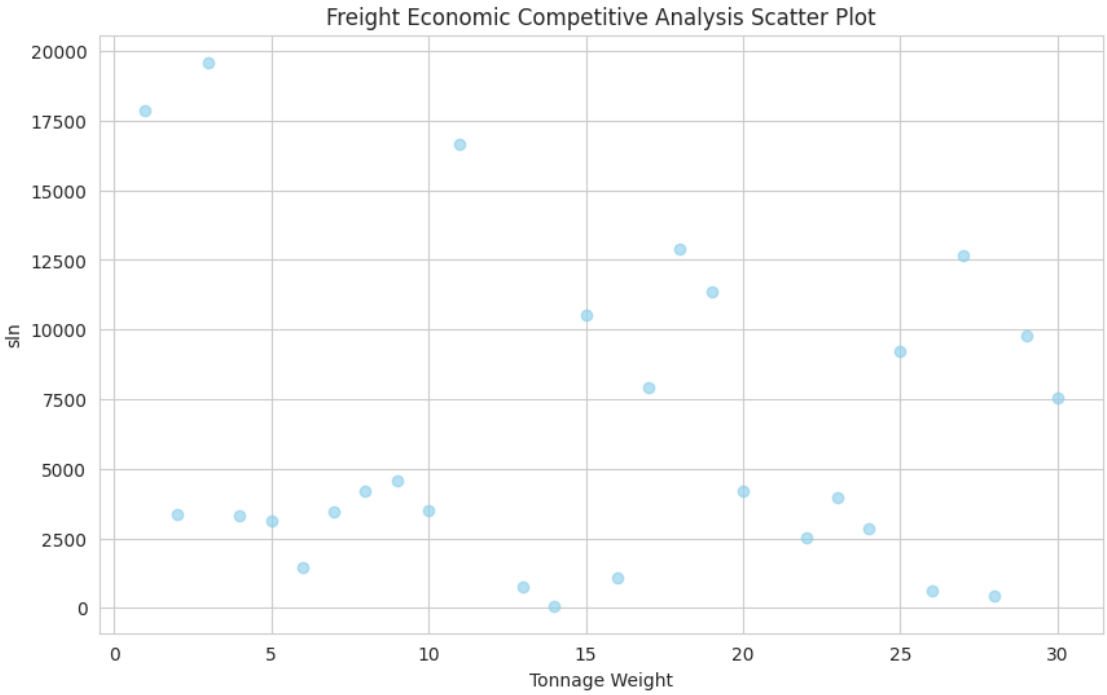
[ ]:

	sln	freight_ec
0	03	NaN
1	04	17860.50
2	05	3370.16
3	07	19599.28
4	10	3323.42
5	11	3119.47
6	12	1467.86
7	15	3473.47
8	18	4199.73
9	19	4555.10
10	22	3479.98
11	23	16643.05
12	25	NaN
13	27	771.96
14	29	72.21
15	30	10533.22
16	32	1085.17
17	37	7913.15
18	39	12896.31
19	40	11352.45
20	42	4181.13
21	43	NaN
22	44	2524.16
23	45	3950.36
24	47	2863.96
25	50	9210.17
26	53	618.38
27	54	12667.98
28	61	443.47
29	62	9753.58
30	63	7552.66

1.1.2 Data Visualizations







Exports

```
Notebook successfully converted to PDF:
freight_truck_ec_analysis_hidden_code.pdf
```

```
Notebook successfully converted to PDF: freight_truck_ec_analysis.pdf
```

```
DataFrame exported to CSV successfully at freight_ec_data.csv
```