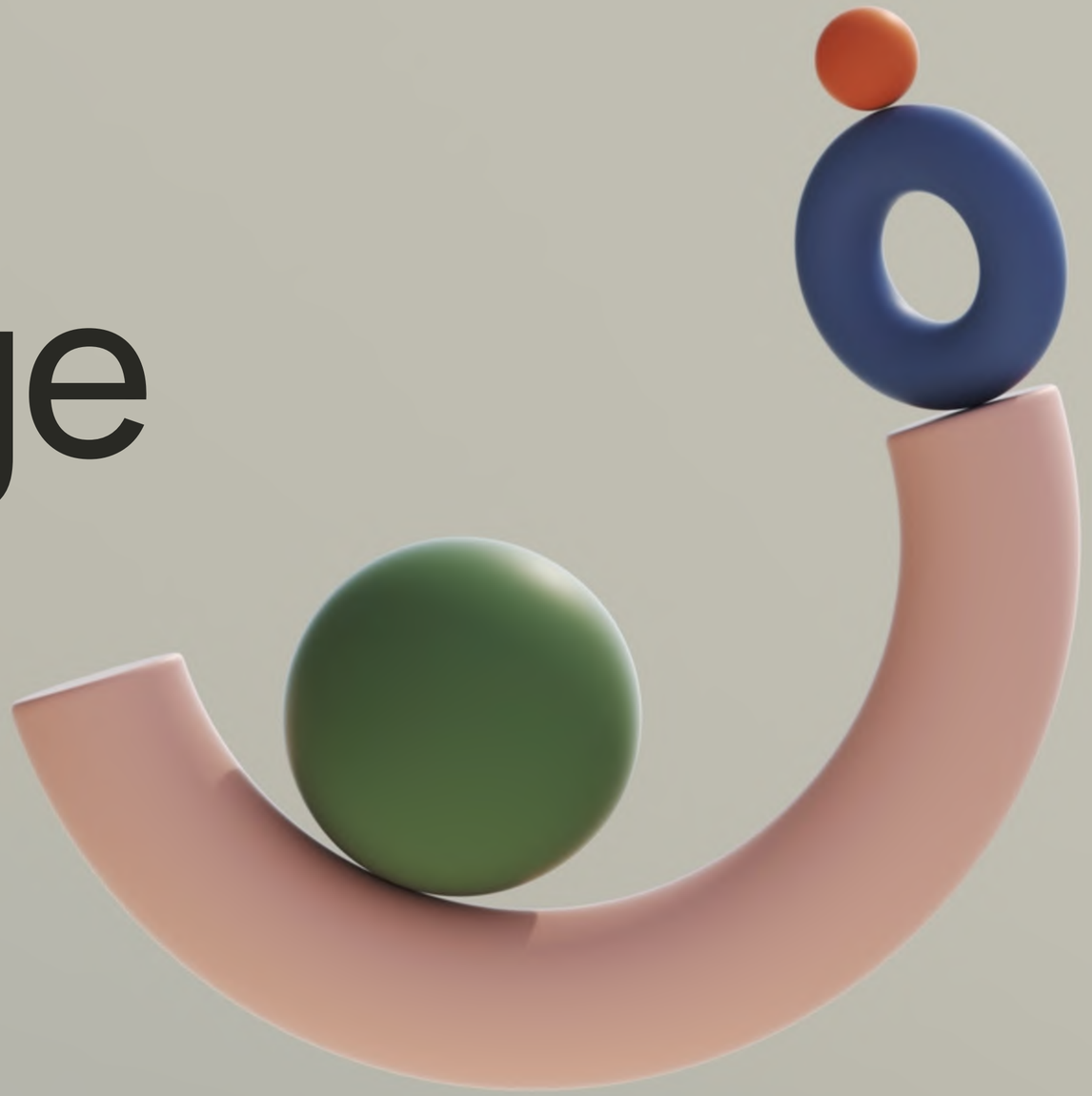
Bolt Challenge

Understand if our supply volume matches demand



2032

Q3

24%

People do not see +1 car during peak hours

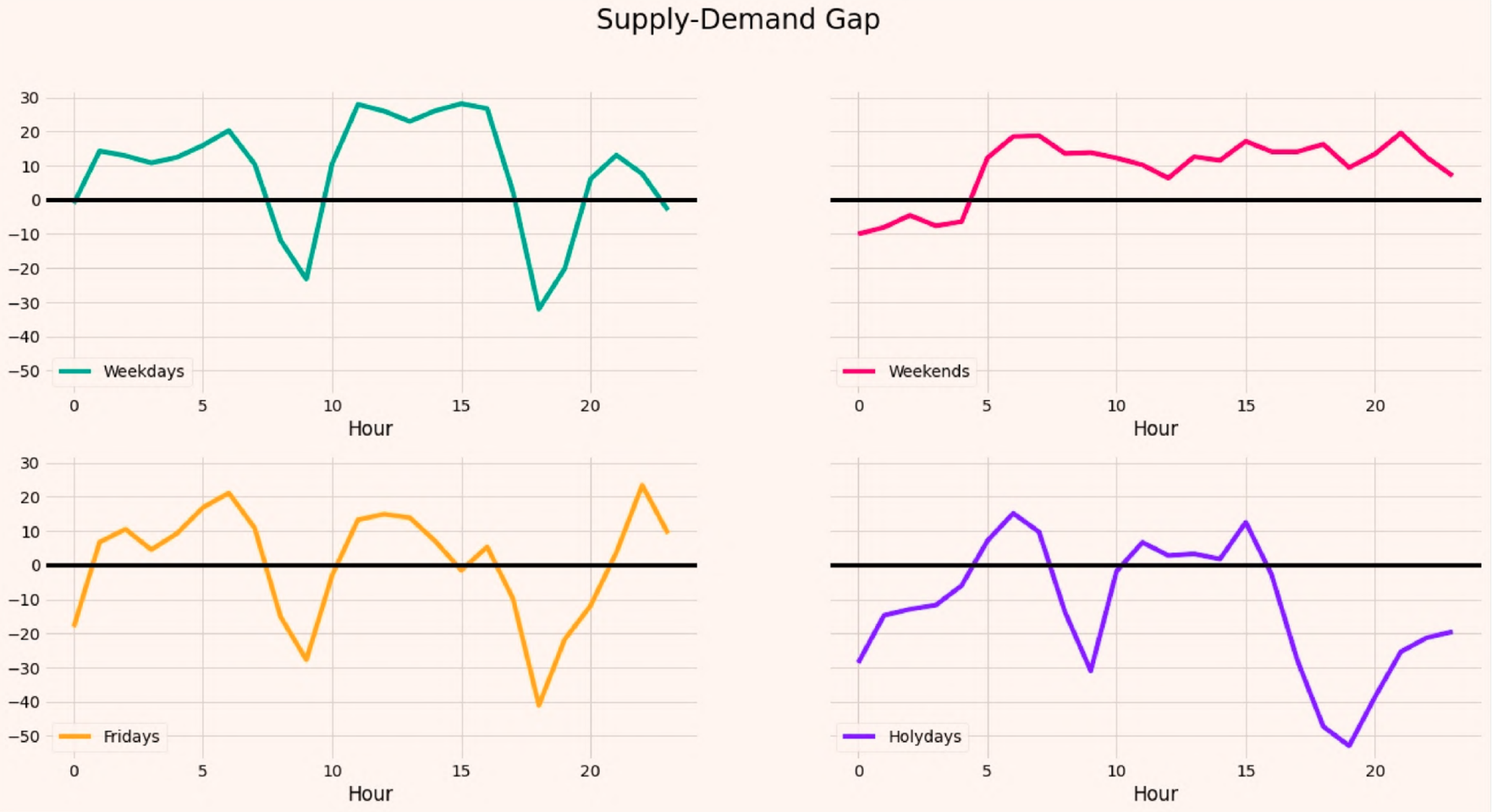
70%

Demand does not convert to Finish Ride

+8€

Revenue lost per Week

When are we undersupplied ?



Peak Hours:

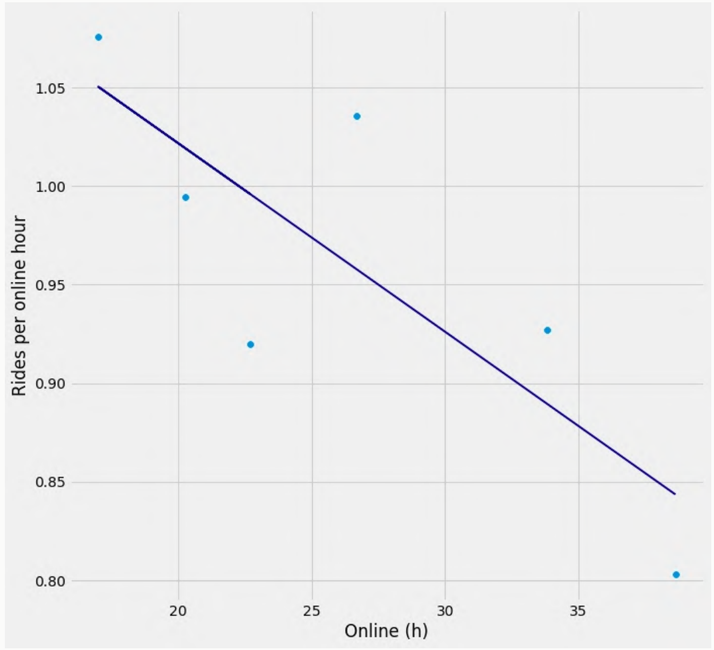
- 8am-9am and 6pm-7pm on weekdays
- 3am-4am Weekends
- Both periods on holidays

How to ensure good Coverage Ratio ?

For a given peak hour, the ratio of rides per online hour (RPH) is known. If we assume that it is a constant, we can derive that:

Nr. Extra hours * RPH = Nr Extra Rides

Hour	People saw 0 cars (unique)	Demand	Coverage Ratio (%)	Rides per online hour	Extra Hours	Extra Hours - V2
3	21.200000	43.300000	80.600000	0.9200	23.043478	105.960153
4	28.000000	31.100000	66.300000	1.0760	26.022305	96.553095
8	32.560000	40.120000	59.120000	0.9944	32.743363	88.326574
9	34.920000	54.760000	64.640000	1.0356	33.719583	82.737365
18	33.560000	73.600000	74.240000	0.9272	36.194996	86.127049
19	26.600000	74.960000	79.280000	0.8032	33.117530	98.695664
Total	29.473333	52.973333	70.696667	0.9594	30.806876	93.219584



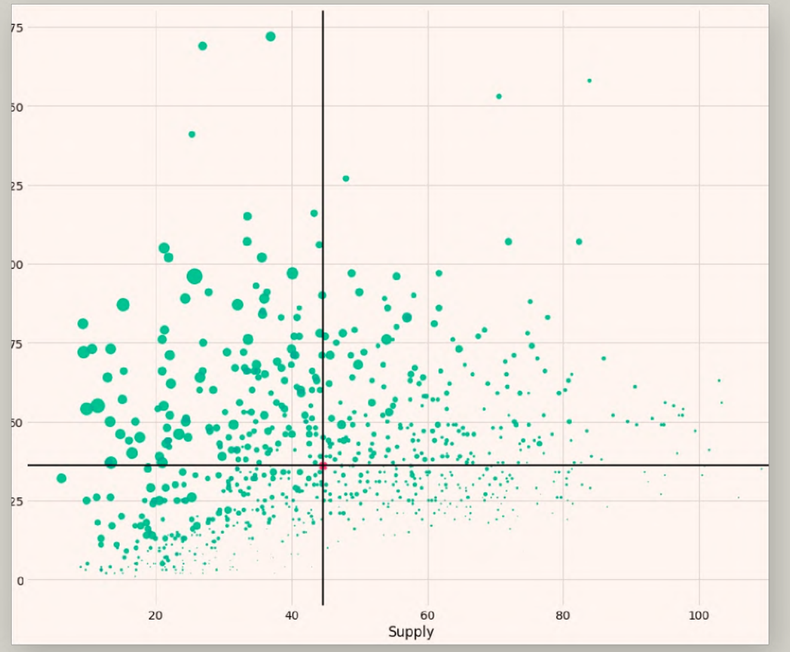
Online Hours * (a*Online Hours + b) = People saw 0 Cars

How much earning can we guarantee ?

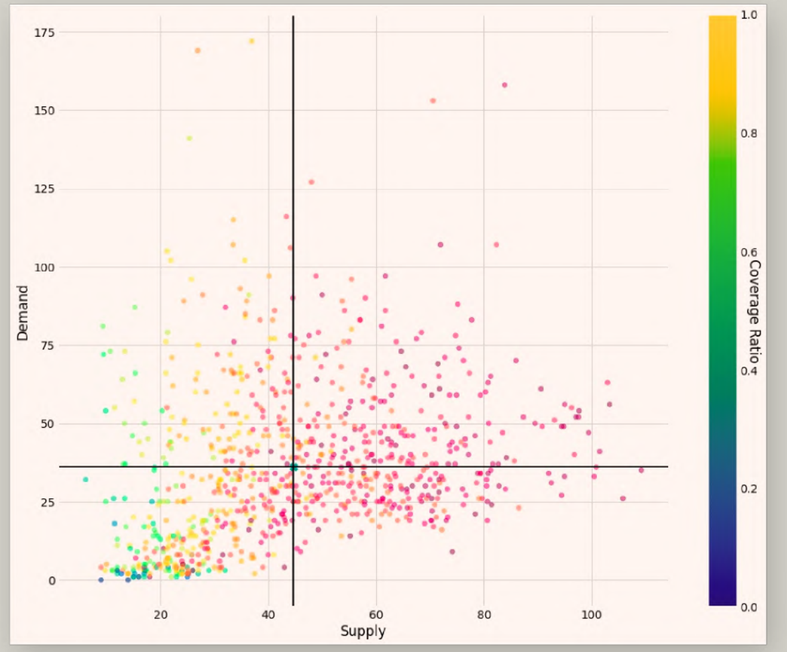
Hour	People saw 0 cars (unique)	Demand	Active drivers	Finished Rides	Income per Online Hour	Online hours to capture all demand	Income per Online Hour - All demand
3	21.200000	43.300000	54.90	20.100000	7.083700	23.043478	7.222888
4	28.000000	31.100000	44.10	17.200000	8.094118	26.022305	8.404943
8	32.560000	40.120000	54.12	19.280000	7.605523	32.743363	7.821458
9	34.920000	54.760000	66.04	26.800000	8.035982	33.719583	8.174891
18	33.560000	73.600000	87.28	30.520000	7.215130	36.194996	7.319769
19	26.600000	74.960000	97.36	29.960000	6.202899	33.117530	6.305680
Total	29.473333	52.973333	67.30	23.976667	7.372892	30.806876	7.541605

Assuming that we will be able to capture all demand, we can guarantee an average income per online hour per driver of 7.5 euros and we will need to atract an extra 30 online hours to do so

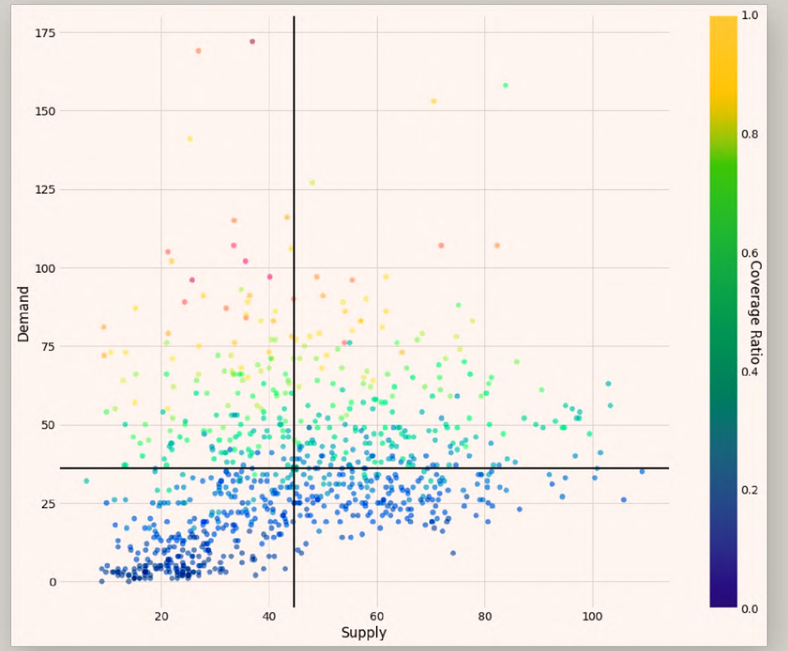
Supply-Demand Quadrants



Income per Driver



Coverage Ratio



Rides per online hour

Conclusions

Identified Peak Hours

- 8am-9am and 6pm-7pm on weekdays
- 3am-4am Weekends

Nr. Online hours to ensure good coverage during those hours

1. Extra 30h per peak hour
2. Extra 93h per peak hour

Guaranteed Income to attract more supply

If we guarantee the average income per peak hour, we will loose money.

If we can capture all demand, we can guarantee 7.5 euros, if we can attract an extra 30 online hours

Limitations

Data

Short period of data, hard to extract seasonality and explore trends with abnormal behaviors, such as holiday period.

Model

With real time data, it would be possible to create a more dynamic model that better reflects reality, e.g. dynamic queue of supply and demand

Features

The data did not contain data around geography and positional data. We could model effective supply with a proximity model.

Time

Limited time and context to explore relation between variables

Website

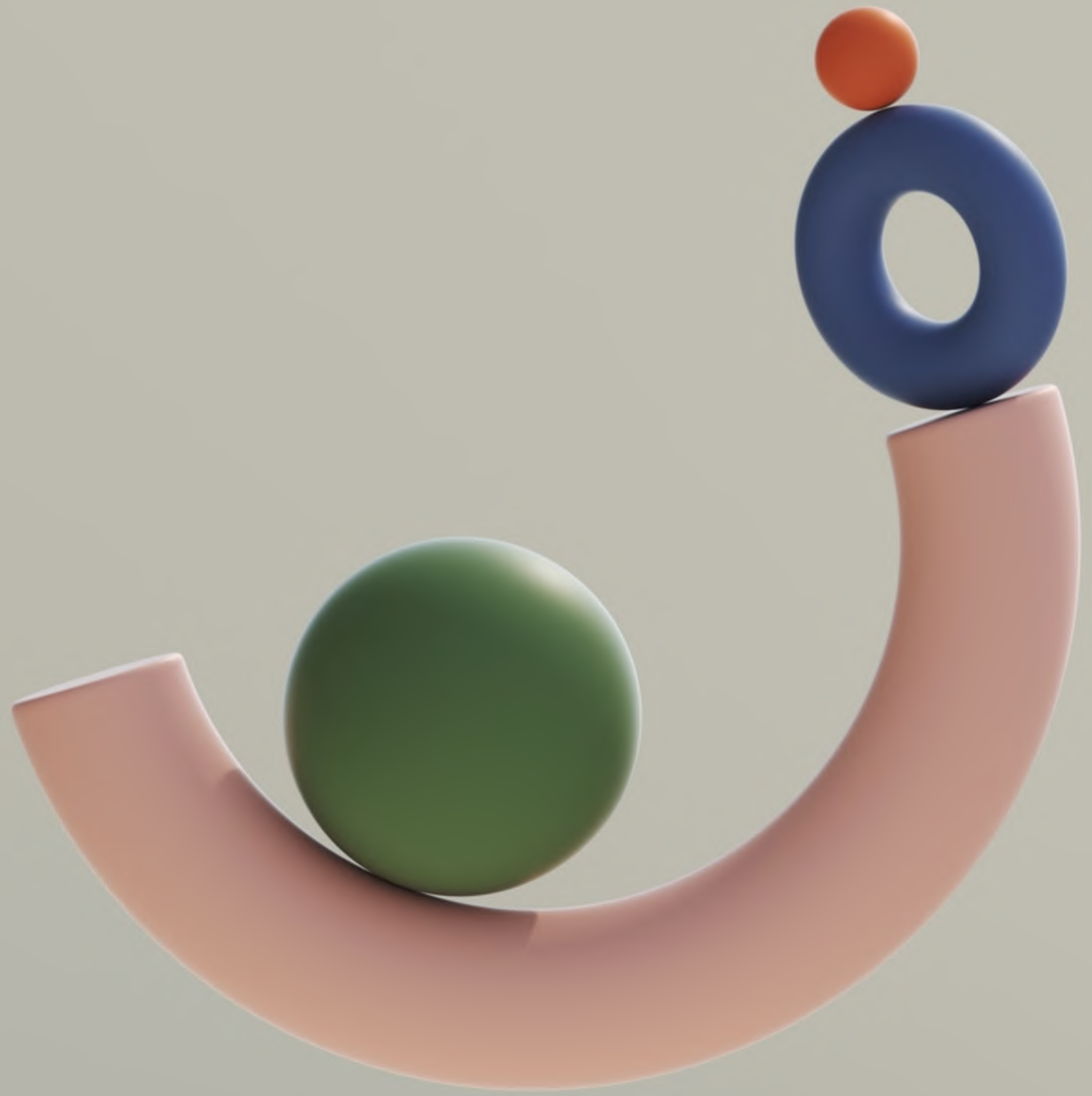
LinkedIn Profile

GitHub Portfolio

jlousada315.github.io

Email

joao.lousada1@gmail.com



Questions ?

Thank you