

ASSUMPTIONS AND OPTIMIZATION

Characteristics used by the model for predicting the Crowd_Energy :

1. Venue_ID
2. Day_of_Week
3. Volume_Level
4. Ticket_Price
5. Band_Outfit

Now we have to find the optimal ticket price for the concert at V_Gamma

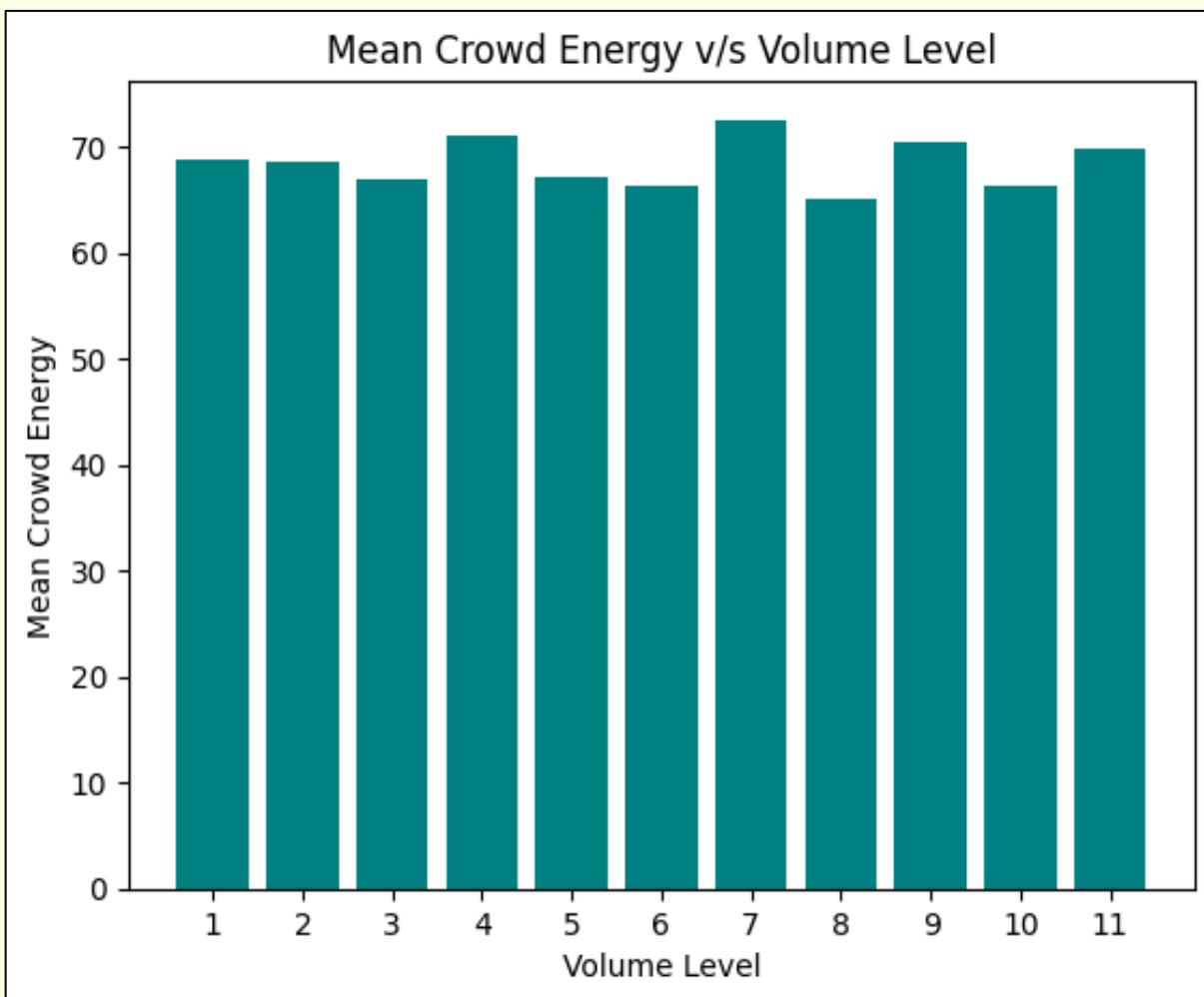
So, Venue_ID = V_Gamma

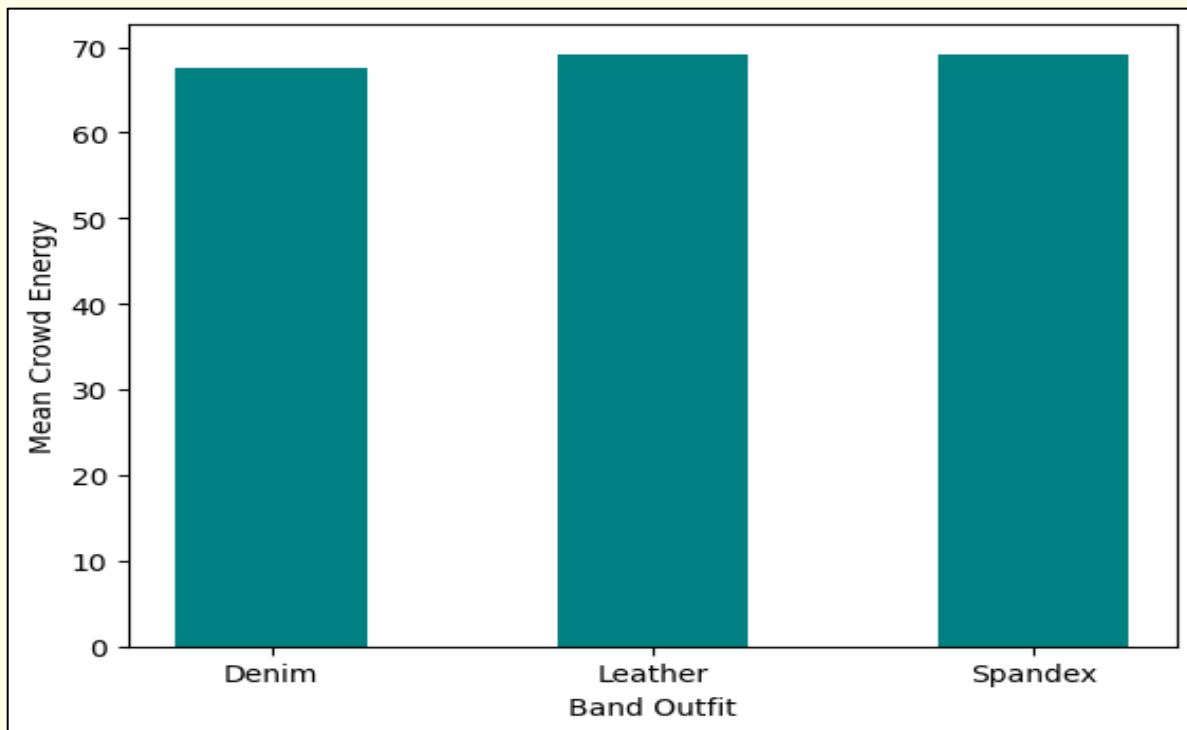
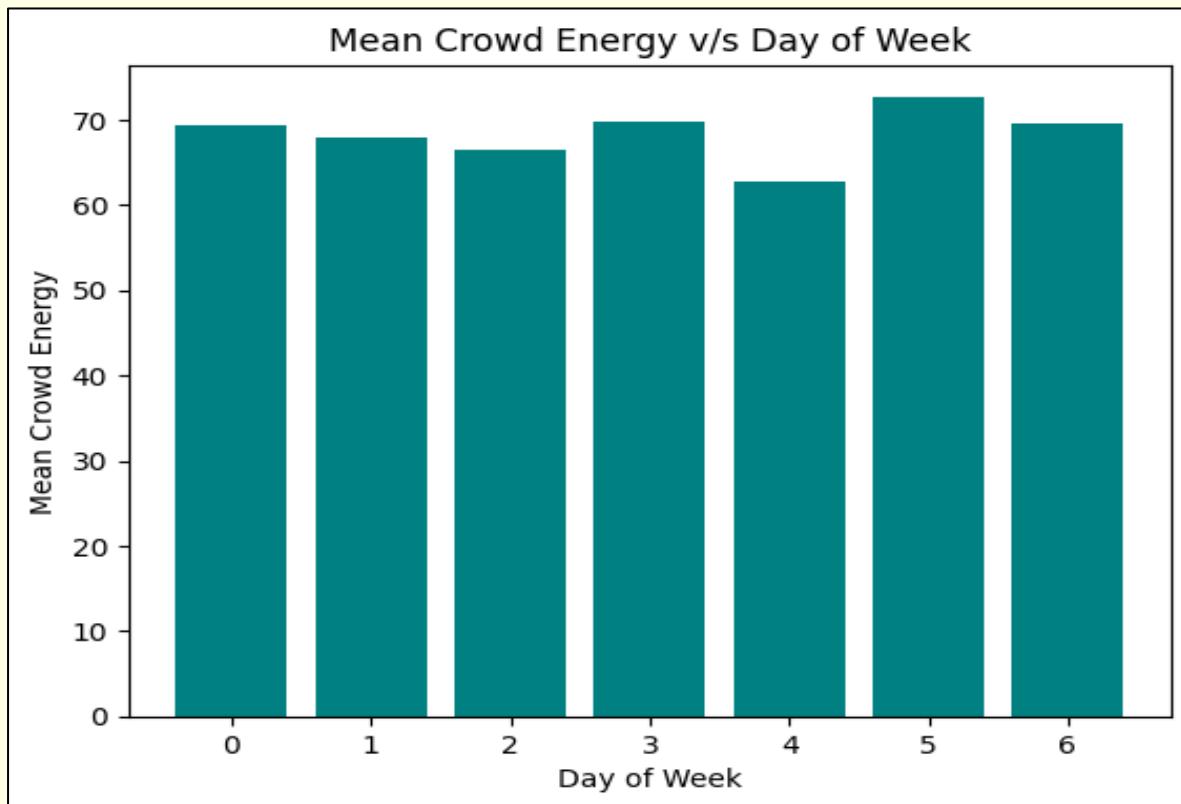
As the Saturday's are the most energetic so choosing Day_of_Week = 5 (Saturday)

Also Volume_Level = 7 is set as inferred from graph for maximum mean.

And Band_Outfit = Spandex

The below graphs justify the choice.

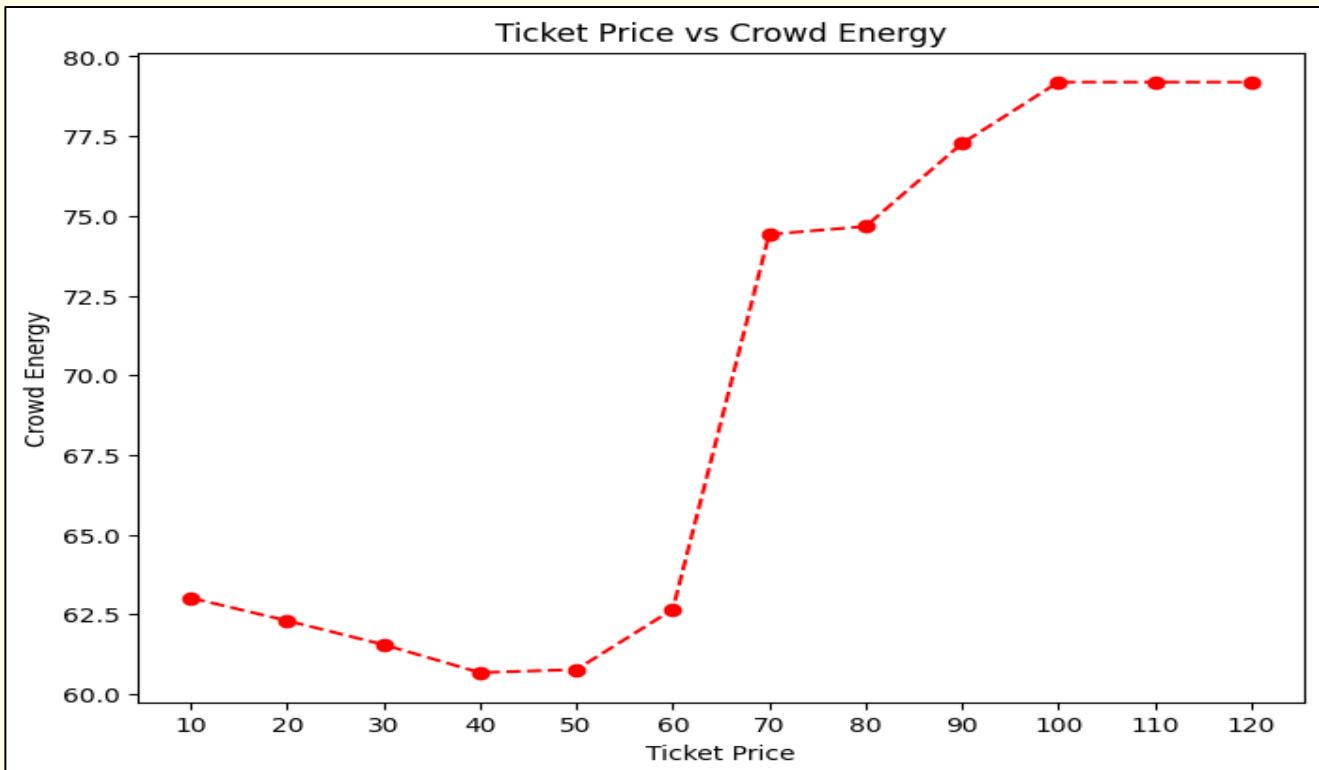




APPROACH FOR FINDING OPTIMAL PRICE

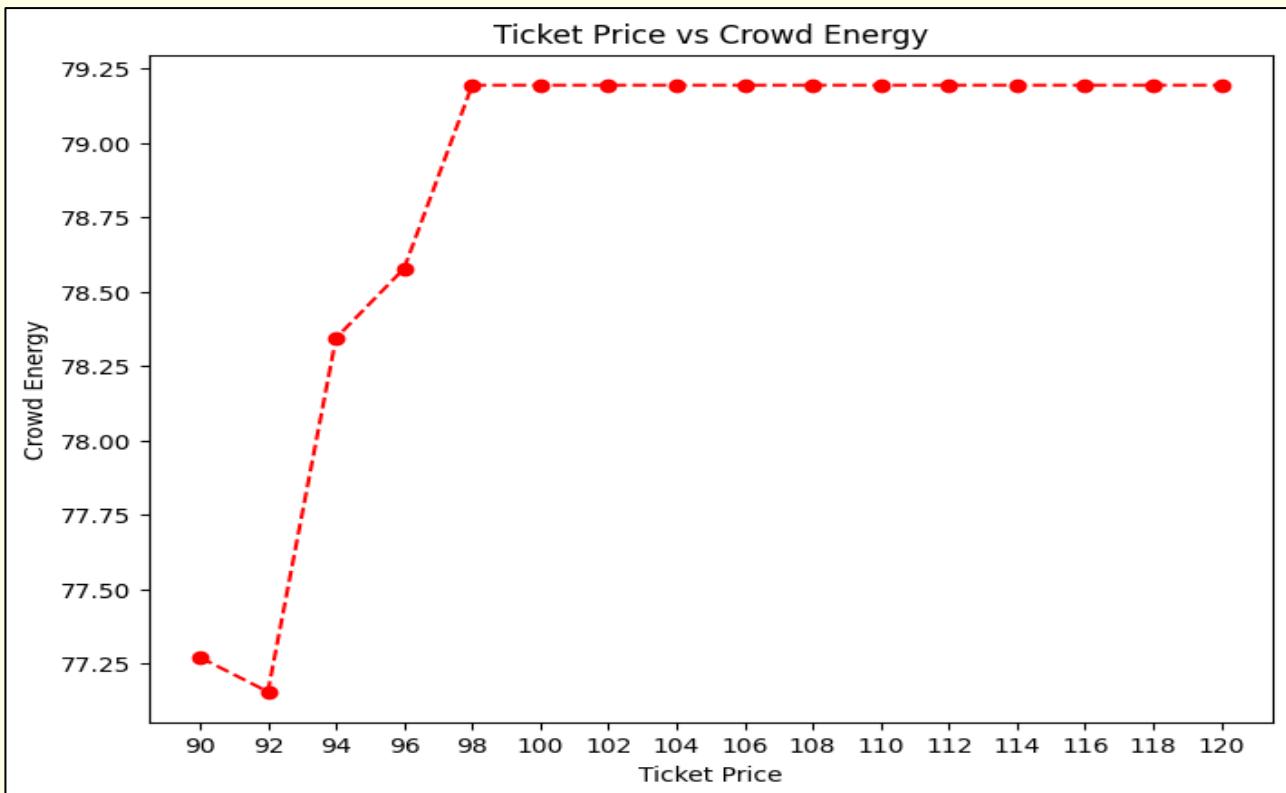
The Crowd_Energy is predicted using the model trained and keeping different values of Ticket_Prices.

Ticket_Prices in range(10,121,10)



This shows that maximum Crowd_energy will be around \$100 - \$120

So now plotting for Ticket_prices in range(90, 121, 2)



Thus it is clear that ticket price in range \$98 – \$120 have the highest predicted crowd_energy. This is also in accordance with EDA carried on V_Gamma which showed that higher priced shows had more energy.

So the optimal value of Ticket_Price could be taken as \$110 as taking more price than this could have opposite effect.

Recommended Optimal Price = \$110

N = no. of tickets sold

The revenue generated with this price = $\$110 \times N$

The total profit = $\$110 \times N - \$8 \times N - \$5000$

$$= \$102 \times N - \$5000$$

which will be profitable when $N \geq 50$, this is highly probable from data of previous shows here.

