Cascade Cup Round 3

By Third Degree Burn

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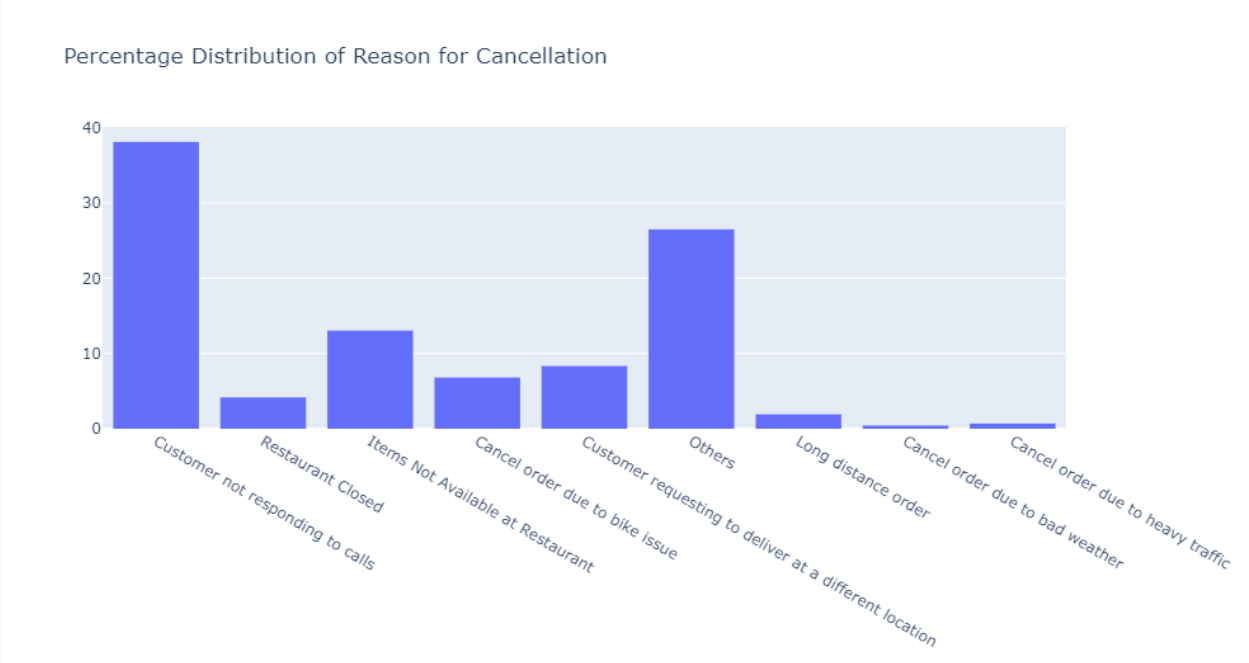
INSIGHTS

We started off with some basic Data Exploration followed by asking a few questions which we thought might give some interesting observations which we shall walk you through in this report.
Throughout this report, we talk about cancellation rate, where we normalize the number of cancellations as the number of orders it took to get one cancellation.

1. **What is the most frequent reason provided by a rider while canceling an order?**

To answer this question we plotted a histogram of the most frequent reason provided by the rider for a single order. We observed that almost 40% of the time the reason for cancellation was “Customer not responding to calls”. Keeping this in mind we move ahead with our analysis as this has a use case in a later question.



2. Does the Cancellation Rate increase with Deliver Distance?

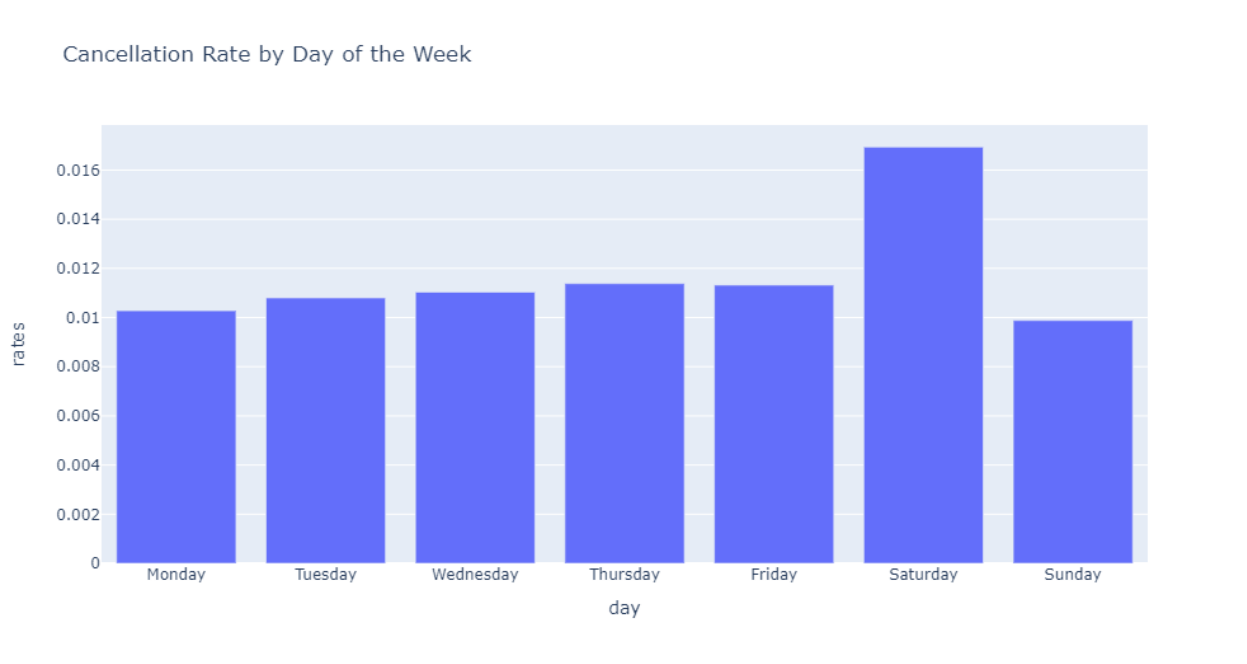
In order to find the answer to this, we first normalized the cancellation rate. We binned the last_mile_distance into 10 bins and found the number of orders placed for each bin. We then found the cancellation rate for each bin and the below given plot is what we observed.

As you can see the cancellation rate increases with increased delivery distance which makes sense because most riders want to complete multiple short deliveries compared to one long delivery as that earns them more revenue.

3. **Are more calls made per order when the order ends up getting canceled?**

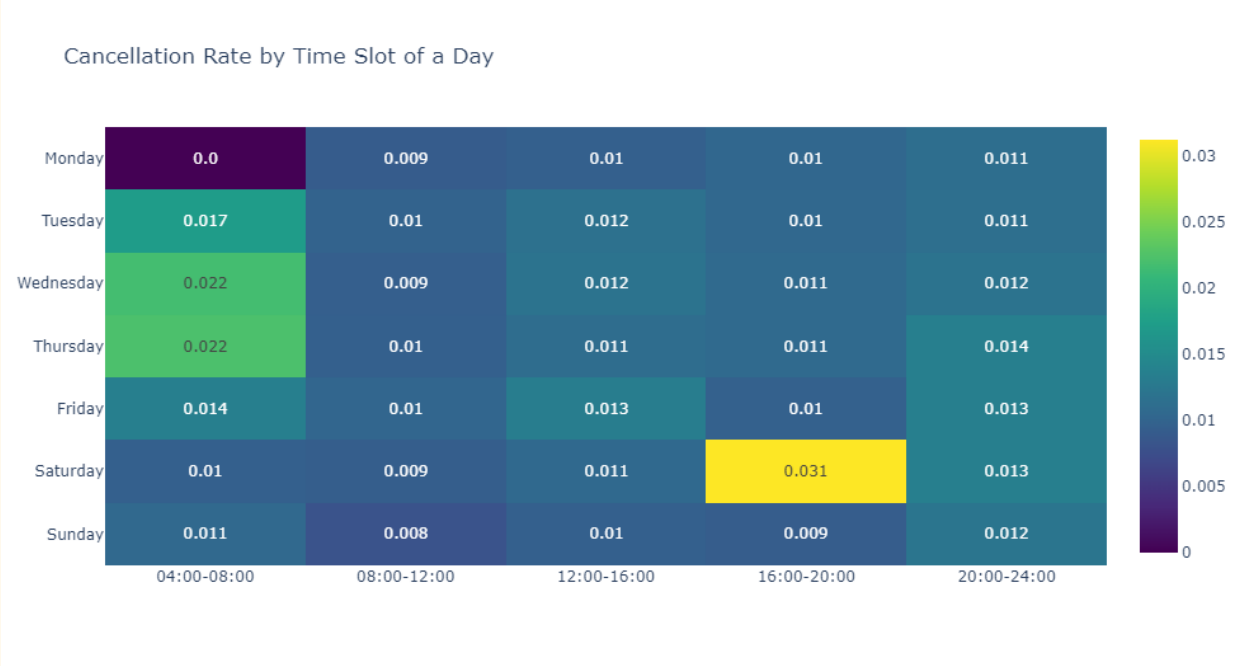
The above given plot gives you the mean number of calls made per order, when the order was canceled vs when the order was not canceled. As you can see almost twice the number of calls are made when an order ends up getting canceled. Any support center can make a fair assumption that if they get more than 2 calls, an order is likely to be canceled.

4. On which days is the cancellation rate the highest?



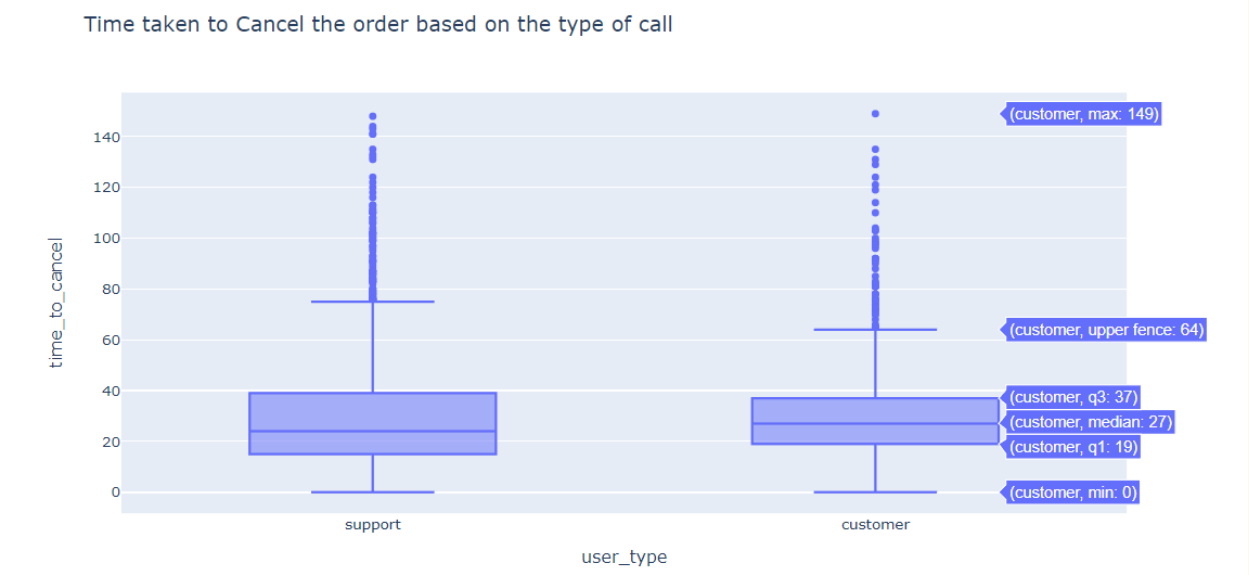
Almost all days have a somewhat equal cancellation rate, except for Saturdays when the cancellation rate is almost 1.5 times higher than the cancellation rates on other days. A simple reason for this could be that a lot of people make plans and change it often on Saturdays leading to a higher cancellation rate.

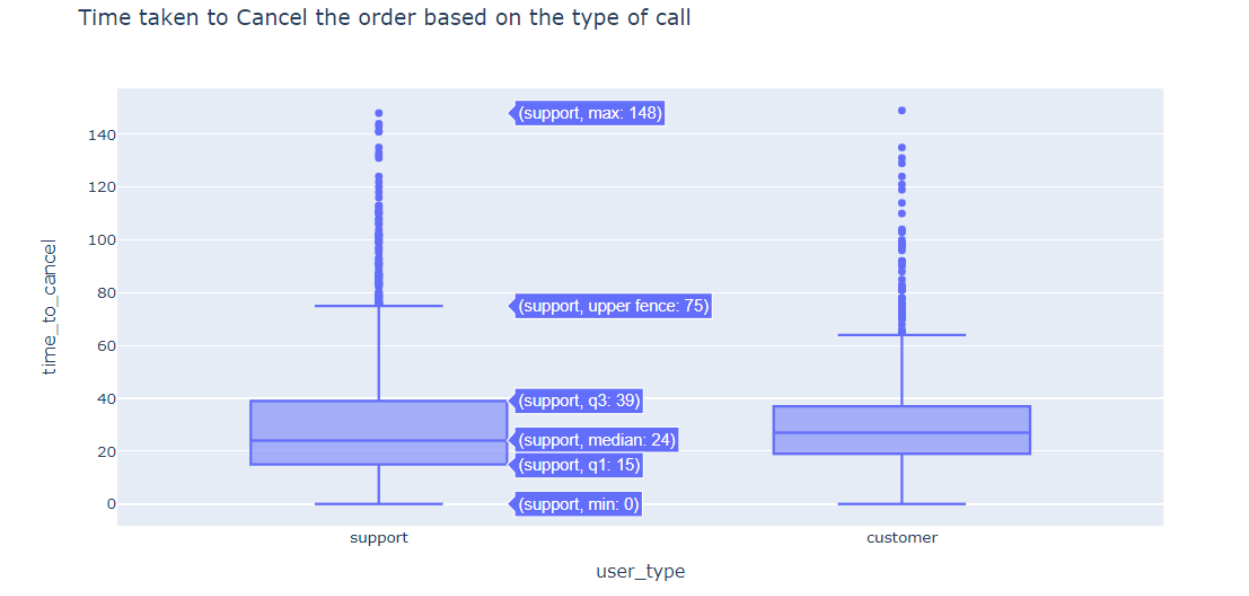
5. In which time slots do we see the highest cancellation rate?



As you can see in the above heatmap, we take the day of the week along the y axis, the time of the day along the x axis and depict what the cancellation rate is for a time slot on a particular day. We can see that Breakfasts on Weekdays excluding Monday and evenings on Saturdays are the time slots when we see the most amount of canceled orders. Since we already know that a huge number of orders get canceled because the customer doesn't pick up calls, one can say that this is happening because the customer is getting ready to either head out to the office or to go out for an event.

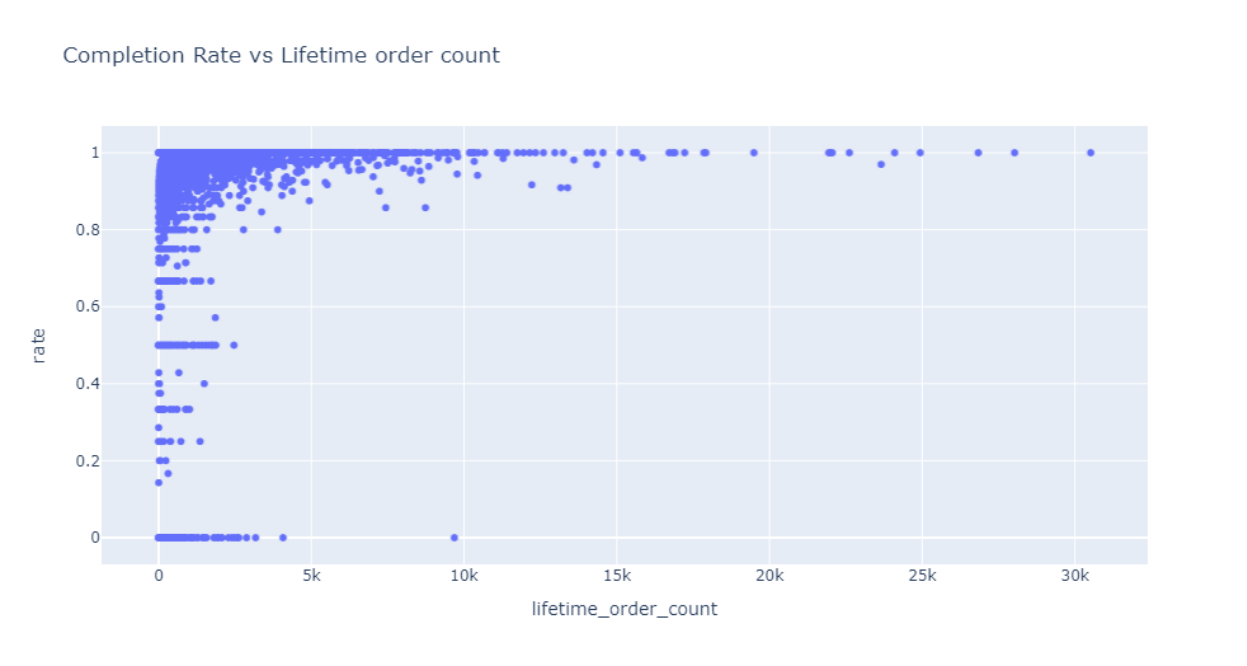
6. Does it take more time to cancel an order if the call is placed to a customer vs support?





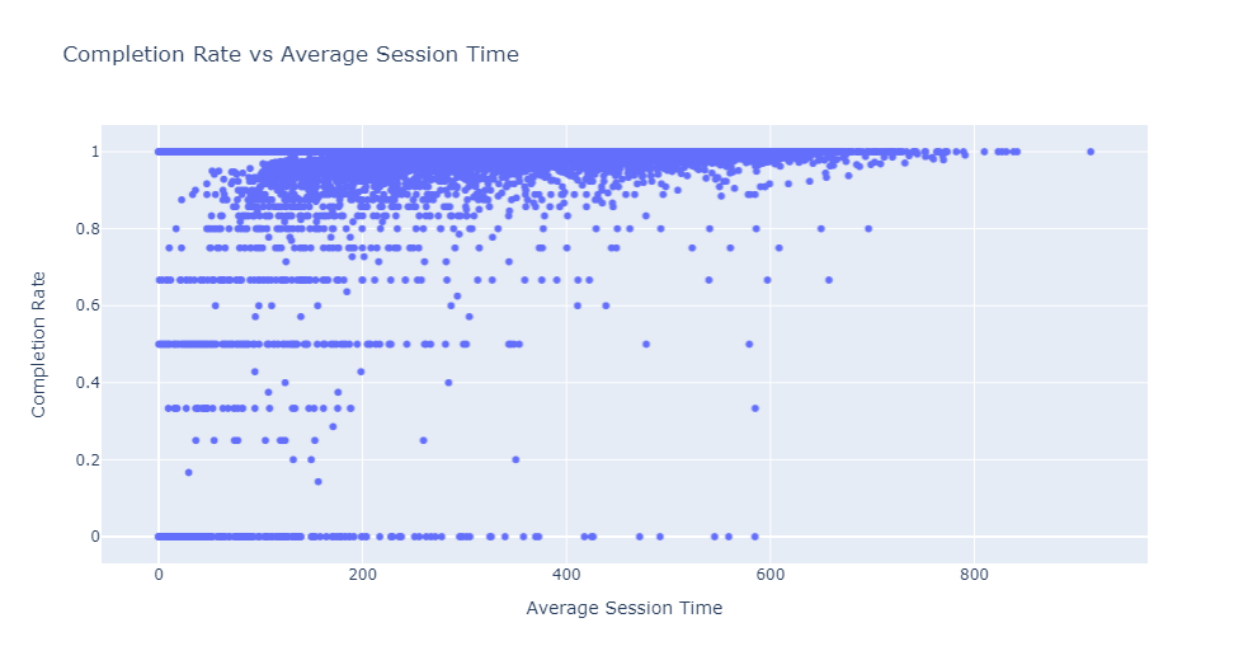
As you can see the median time taken to cancel in the case of the call made to a customer is 3 minutes more than the case of the call made to the support. This isn't a very stark difference but in general calling the customer does take more time even from a logical perspective.

7. **Do riders with a higher lifetime order count have a higher order completion rate?**



As you can see from this graph, while not much can be said about riders with a low lifetime order count, one can say with high confidence that riders with a high lifetime order count are likely to complete their order rather than cancel. Post the 10,000 lifetime orders mark, almost all riders have a 95% + completion rate.

8. Do Riders who are more active have a higher completion rate?



From this graph one can, with a reasonable amount of confidence, say that riders who are more active on any given day will have a higher chance of completing the order rather than canceling it. This statistic gets skewed because of some riders who have a high session time but for some reason have not delivered even one order/ have canceled more than 90% of the times .

Thank you