Rides Requests Cancellation and Waiting Times
Safe Boda Nairobi

SQL request

```
select
        count(_id) as n_rides,
        count(distinct passenger_id)as n_passenger,
        pa.payment_type,
        date_trunc('day', to_timestamp(droppedoff_at, 'YYYY-
        MM-DD HH24:MI:SS'))

from rides as r

full join payments as pa on r._id = pa.ride_id

where
        r.droppedoff_at is not NULL
        and
        r.city_id=2
        and
        date_trunc('day', to_timestamp(droppedoff_at, 'YYYY-
        MM-DD HH24:MI:SS')) ='2019-10-11T00:00:00.000Z'

group by pa.payment_type
                and r.droppedoff_at
```

Results

payment_type	n_pass	n_rides
business	5	5
cash	197	200
credit	86	86
Total	288	291

Ride requests

Ride Status	Number of rides	% of total rides	Passengers	% of total passengers
Completed	42,047	79.8%	28,140	79.4%
Cancelled by Passenger	10,645	20.2%	7,293	20.6%
Total rides	52,692		35,433	

52.6k rides were pinged by 35.4k passengers in the week between 7th and 13th of October 2019. 80% of those were successful. Rides have 3 tipping points during the day, the first is right before 5 am, the second around 11 am and the highest happening around 2:45 pm. In average 1 passenger requests 1.2 trips a week.
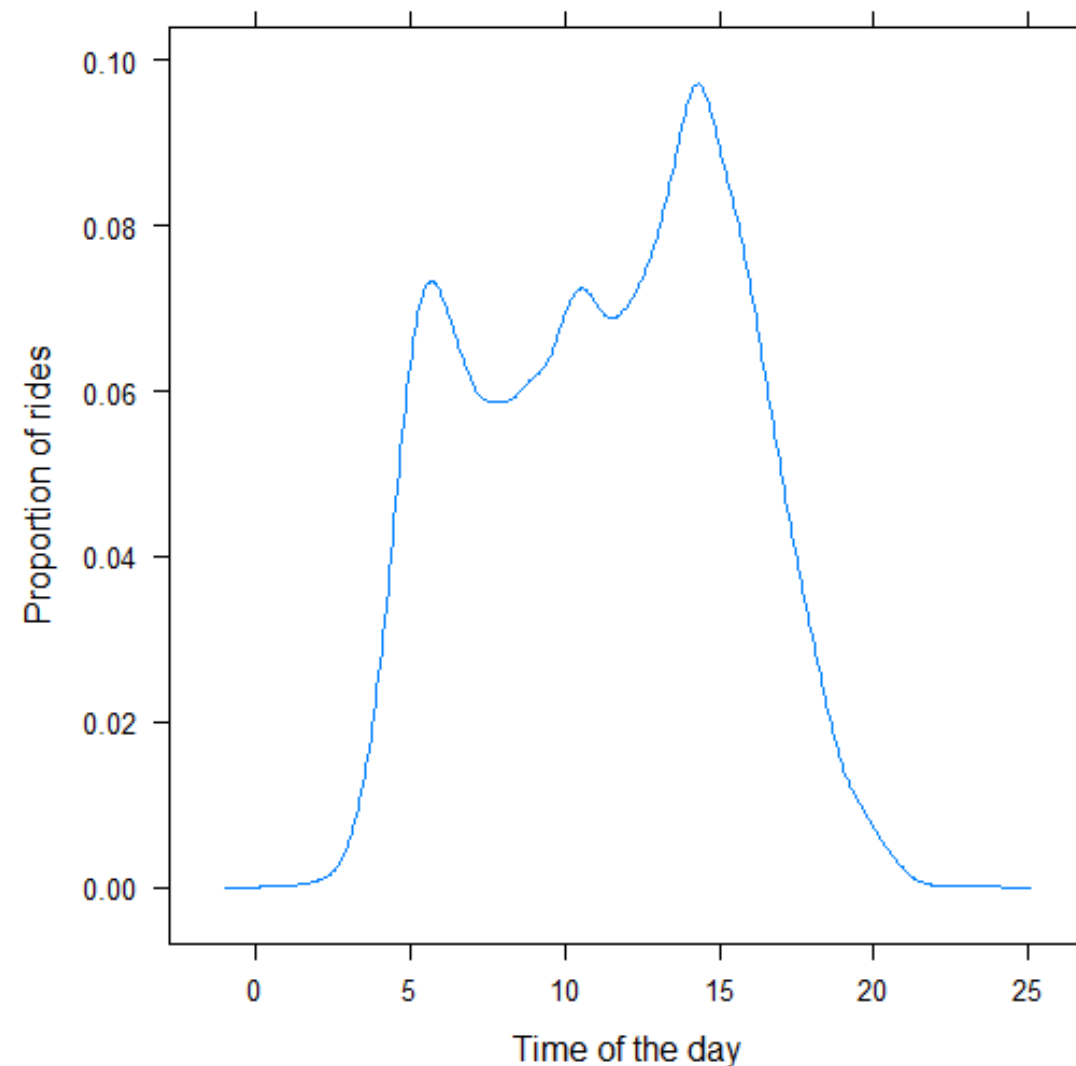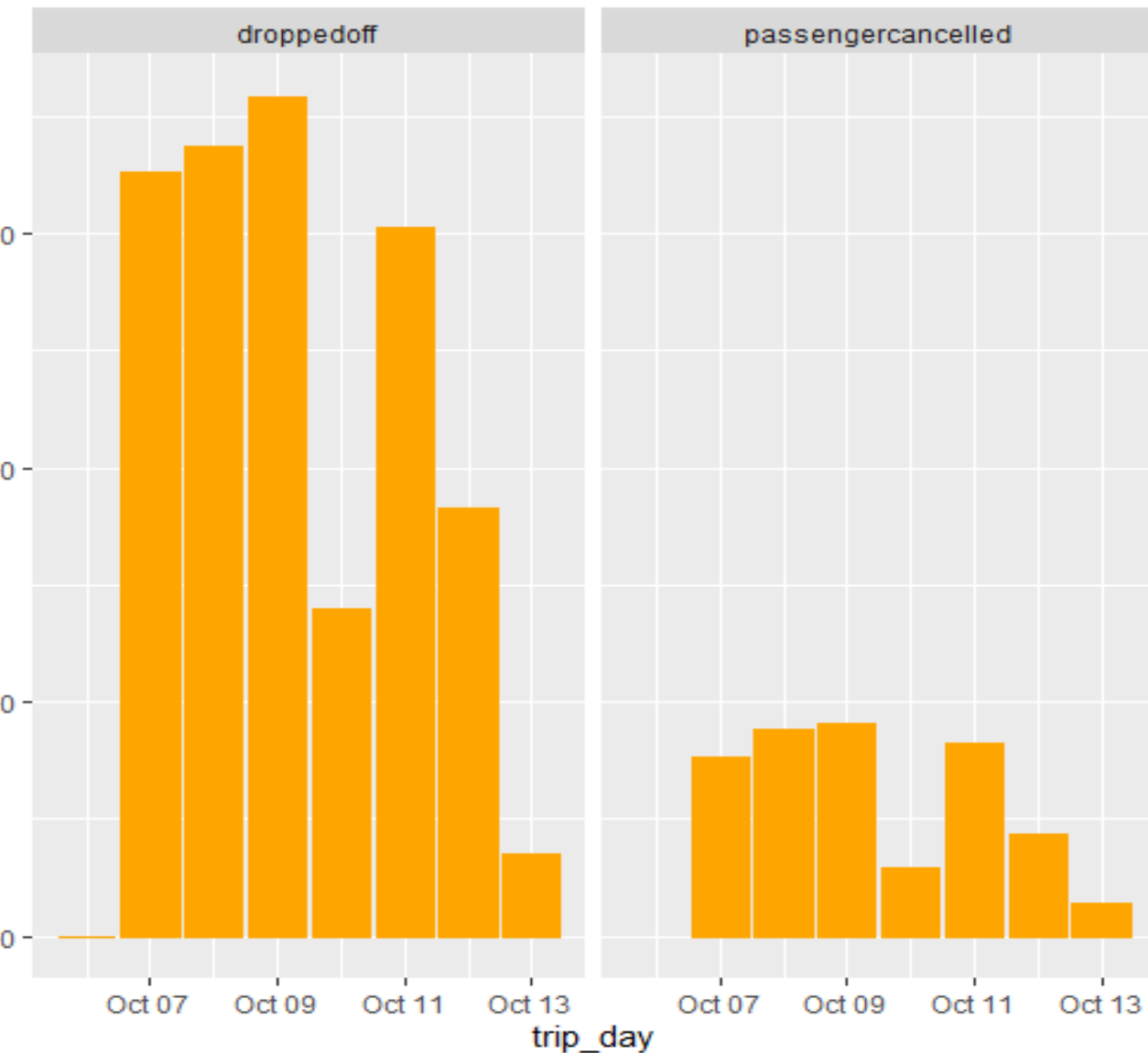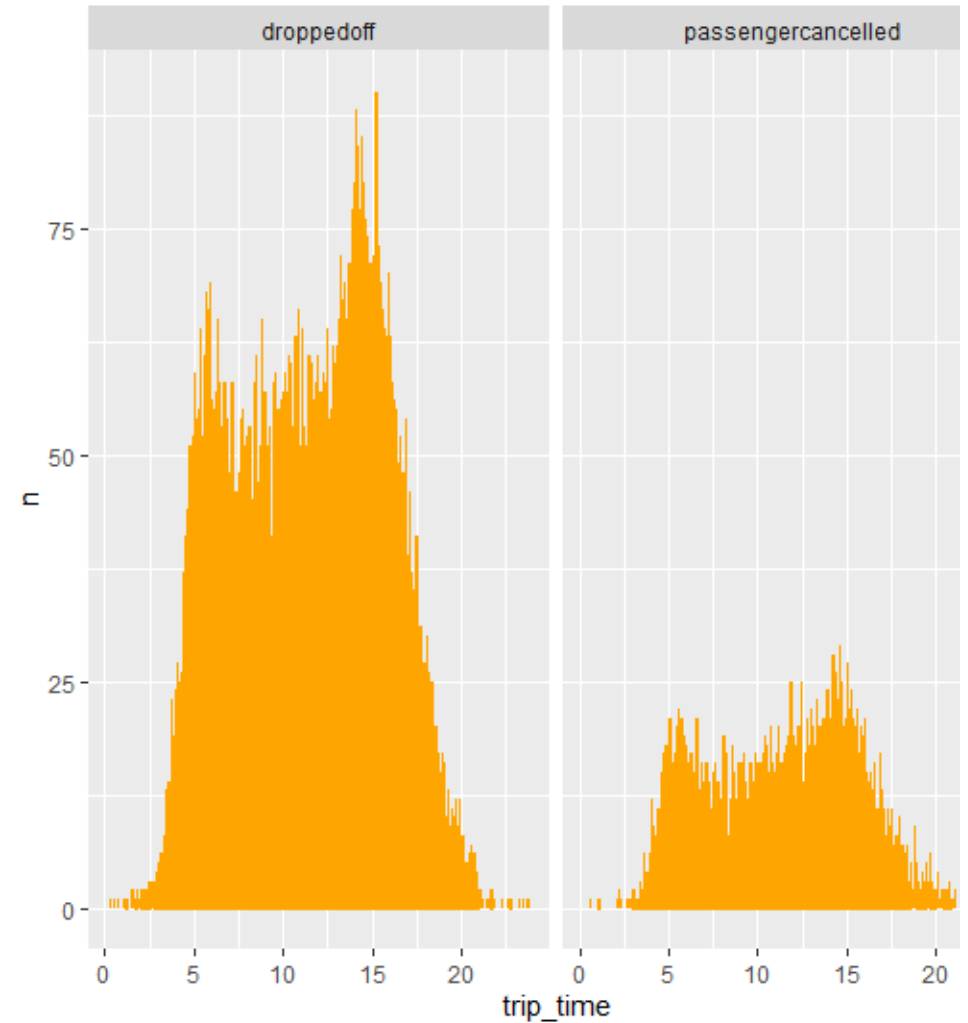
Ride requests per day and status

On the week of analysis the completed and cancelled rides seemed to follow the principle of pareto. With roughly a proportion of 80/20 – completed/cancelled. Cancellations seem to be systemic because they are positively and proportionately related to completed rides. The 10th of October being a holiday in Kenya (Huduma day) had a disproportionate effect over the requests falling below Saturday levels.

Across the day cancellations are distributed mirroring successful rides. However cancellations seem to be less pronounced during the rush hours. This might point out towards the fact that users might take into consideration longer waiting times during the peak hours.


Rides per status and time of day

Ride requests per time, day of the week and status

Clustering rides by weekday reveals that there are two different trends. Rides seem to follow a different distribution during the weekends than during the weekdays. With holidays behaving similarly to the weekend days. Cancellations again seem to be systemic with very similar distributions to completed rides and a positive correlation.
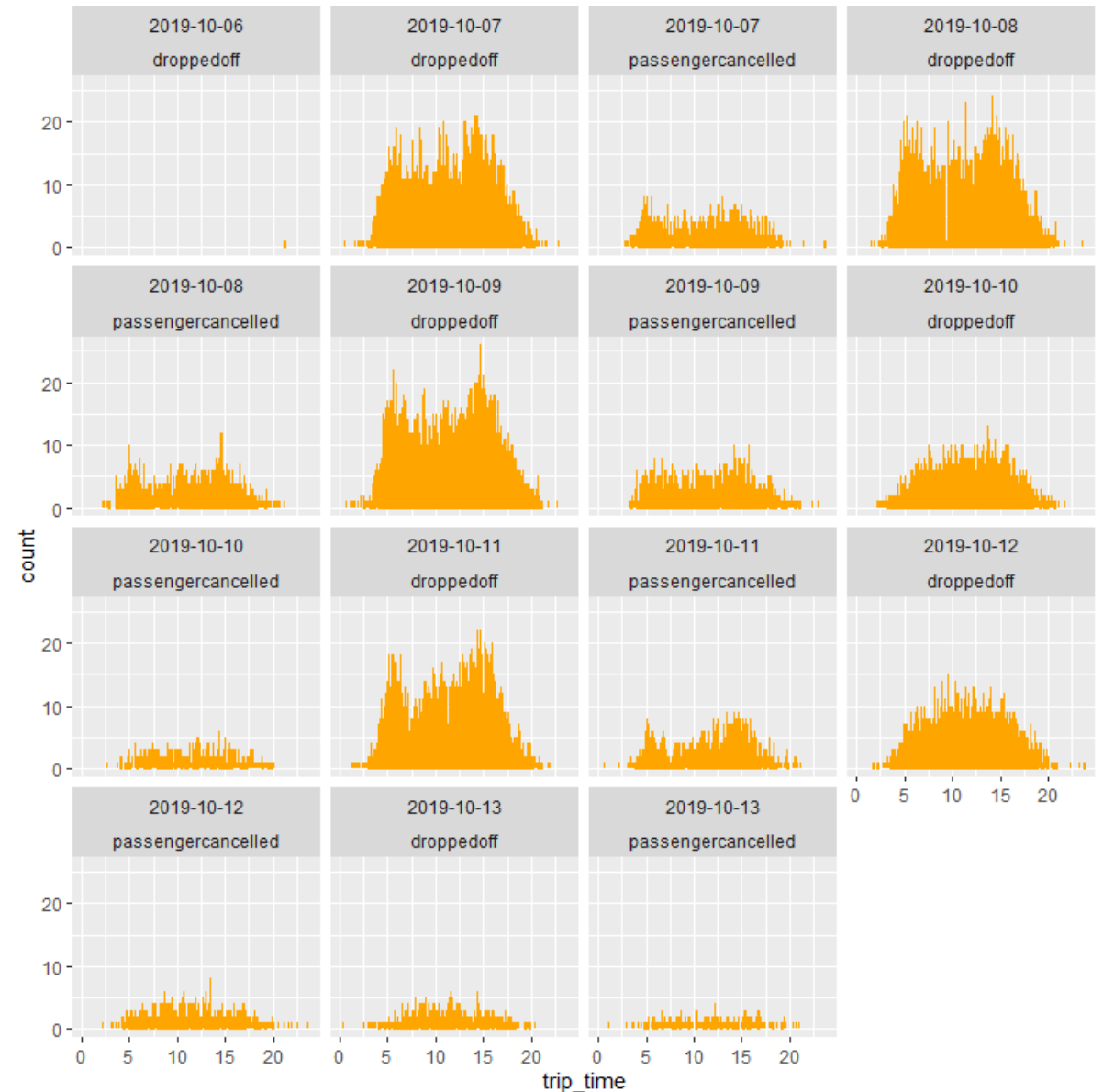
Waiting times per status when the driver arrived

Passengers who cancel seem to be more impatient than those who complete their rides. However, this could also mean that most of cancelled rides are done so regardless of waiting time. Typically passengers that complete rides have to wait around 4 minutes before their Safe Boda arrives. Some of the density plots of the cancelled requests point towards two or more different groups of tolerance time.
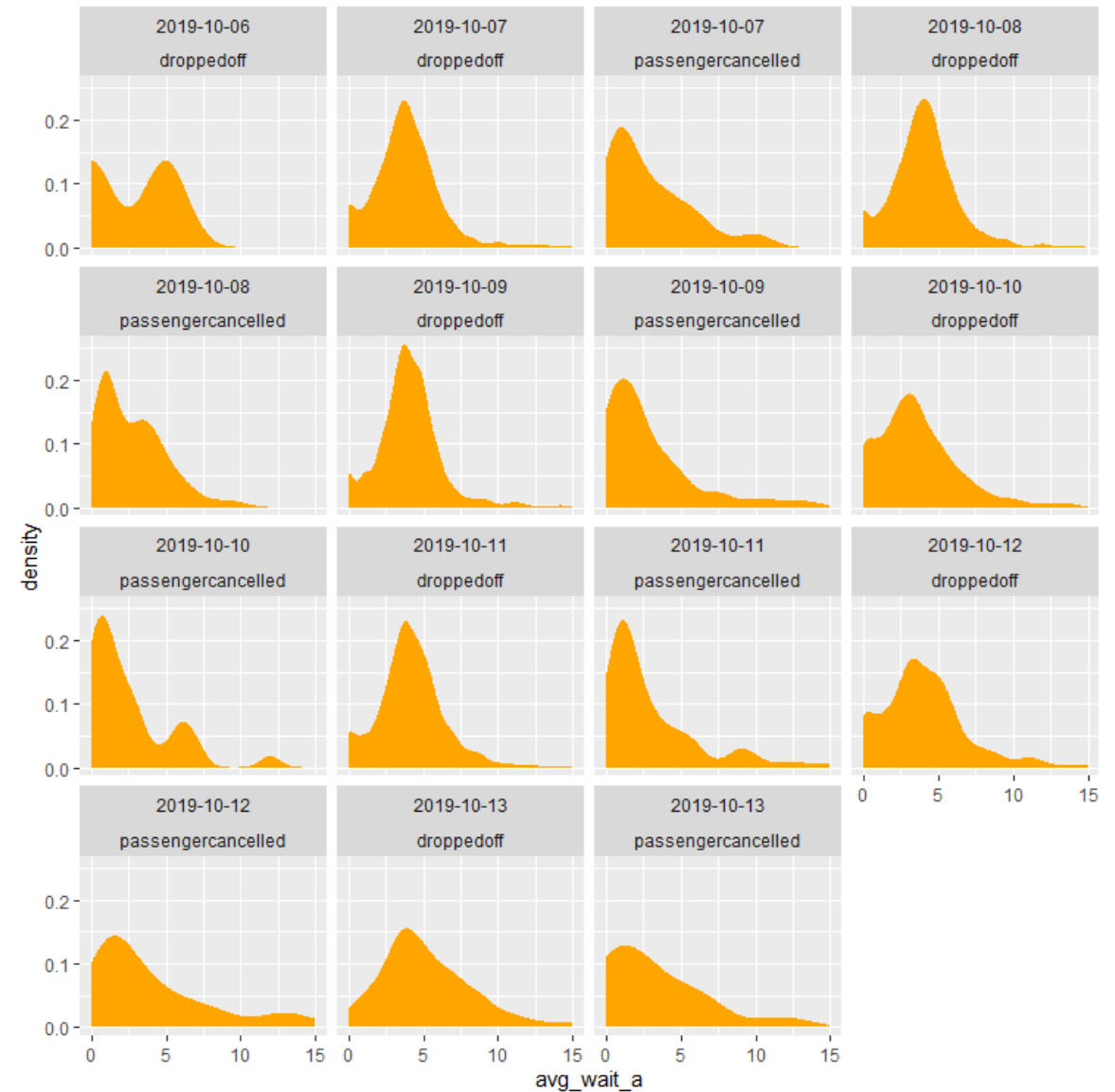
These density plots depict the time elapsed between the ping and the cancellation by the user, for requests in which the rider did not arrive to the pickup point. Waiting times seem to be way higher than the ones for which the rider did arrive and the completed rides. The tolerance threshold seems to be 5 minutes.
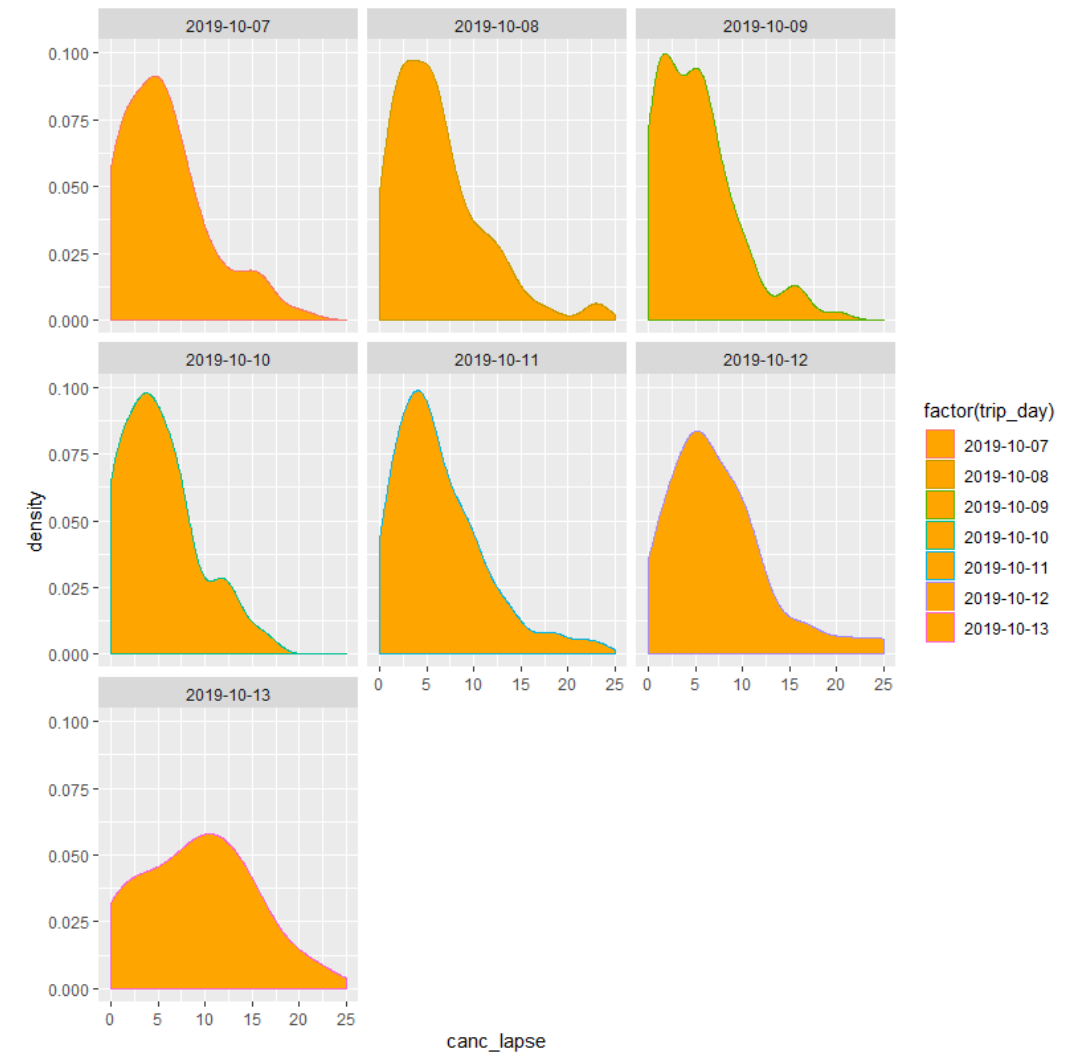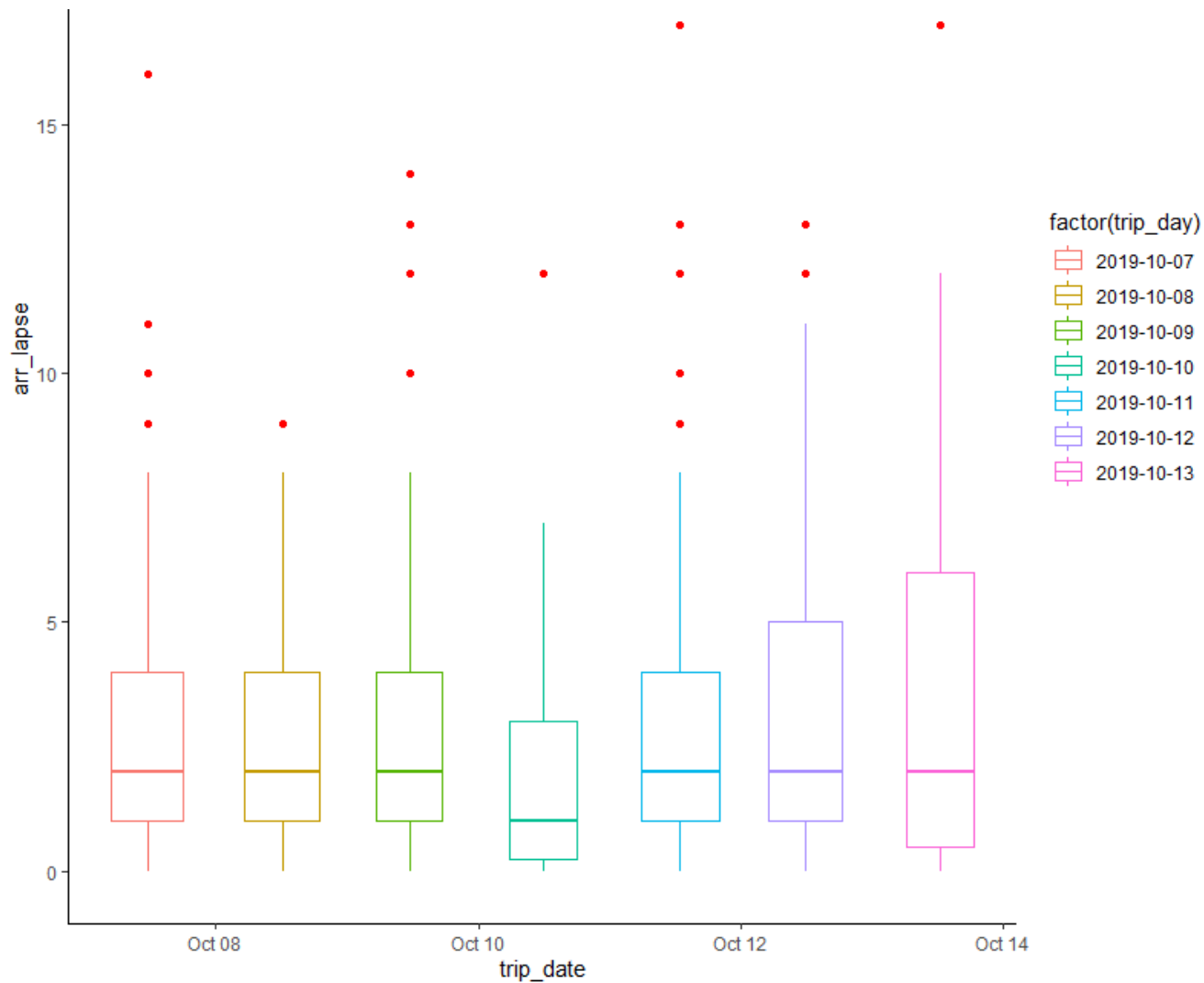

Time between ride request and cancellation when the driver did not arrive
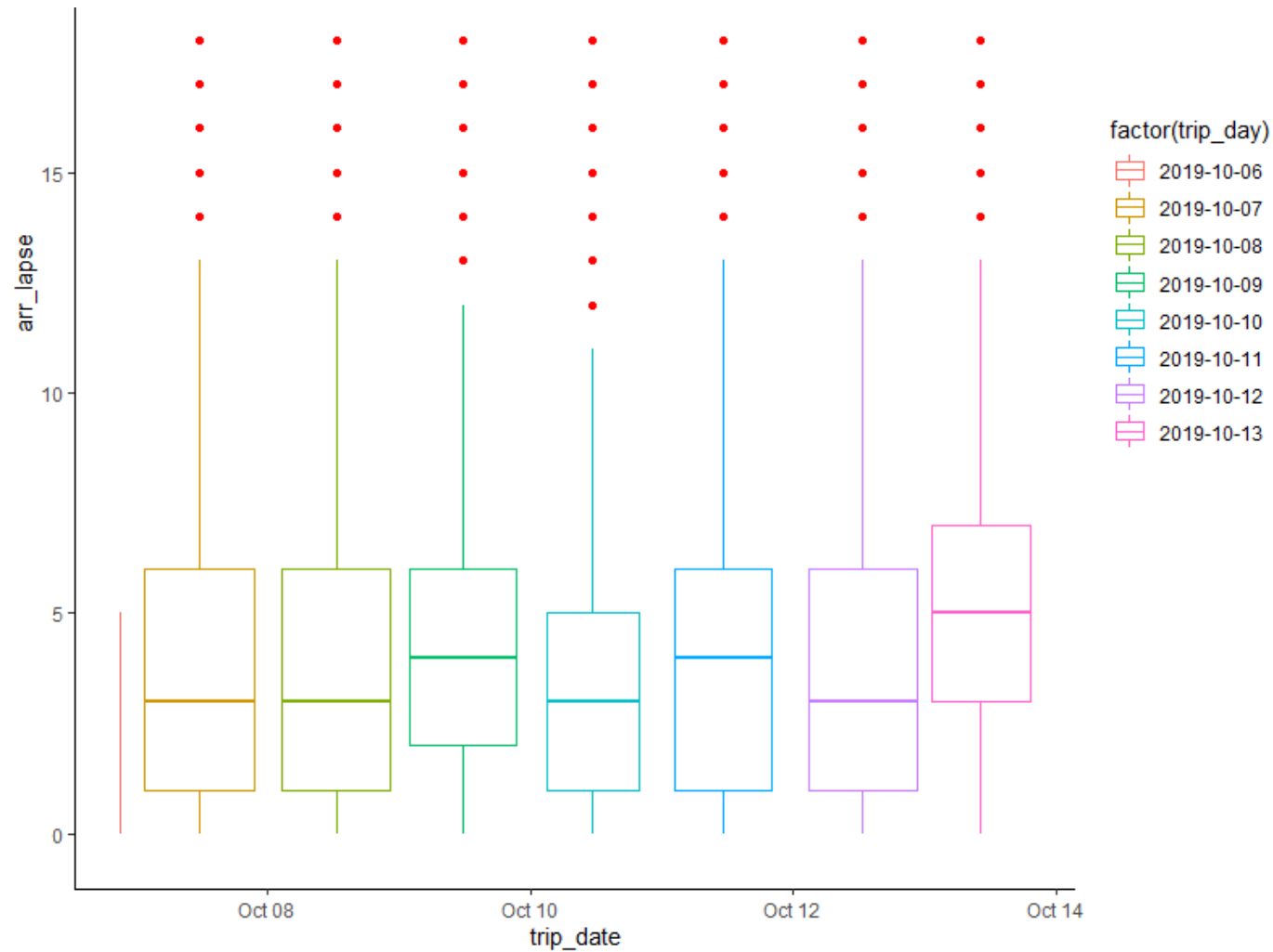
This plot depicts the waiting time between the ride request and the rider's arrival. For this specific week we see that the average waiting time grows as time elapses, with Monday having the lowest waiting times and Sunday the highest.

Rider Arrived - Passenger Dropped Off

This plot depicts the average waiting time between the request and the arrival of the rider for passengers that cancelled their requests. The average time seems to be very consistent and independent to the week of the day. They are also significantly lower than those of the completed rides.

Rider Arrived - Passenger Cancelled
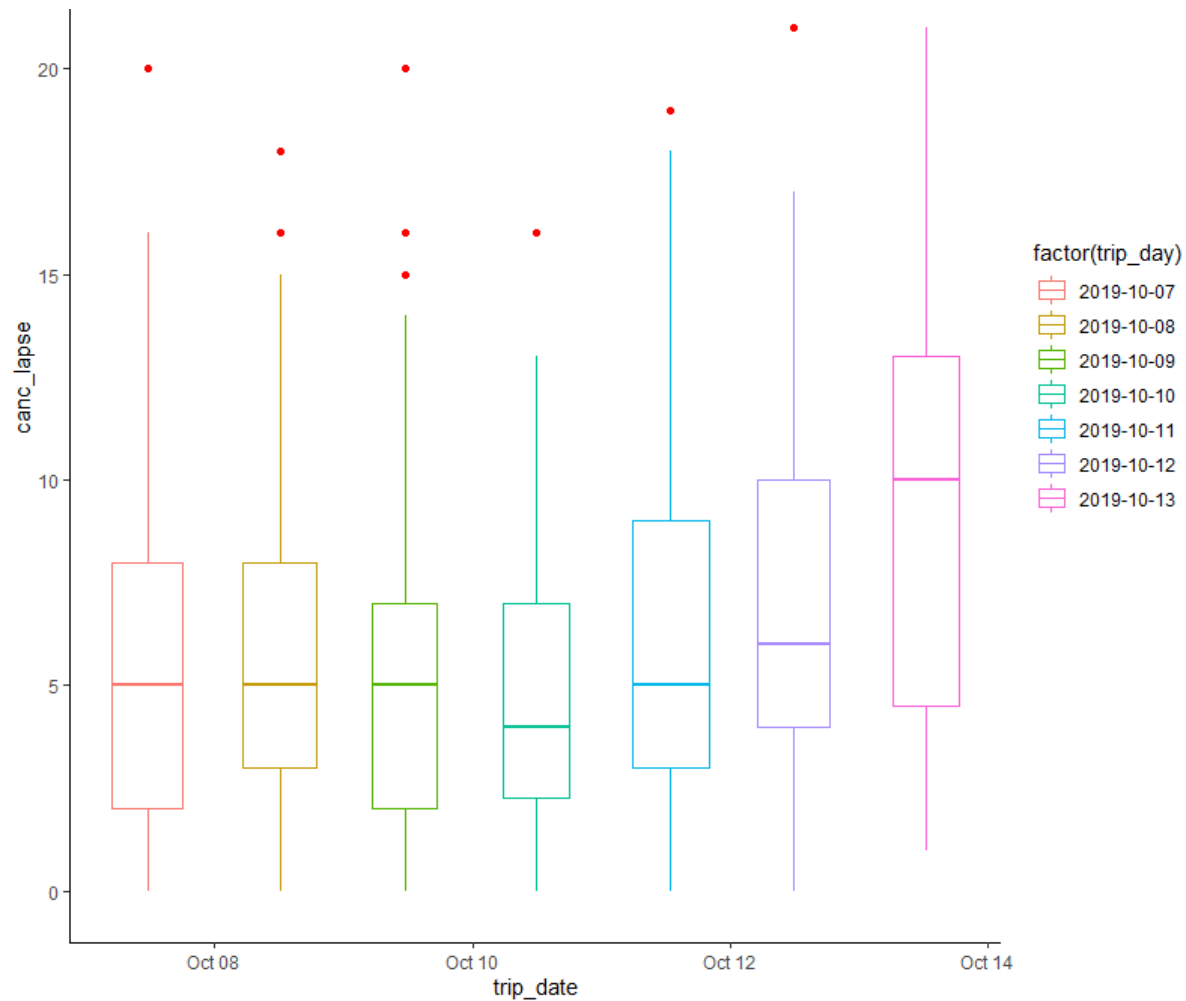
Once again, we see the same trend of average waiting times increasing as the week elapses. With the average waiting time for those where the rider did not arrive and were cancelled being over 5 minutes (except for the holiday). Waiting times are maximum during the weekends.

Cancelled