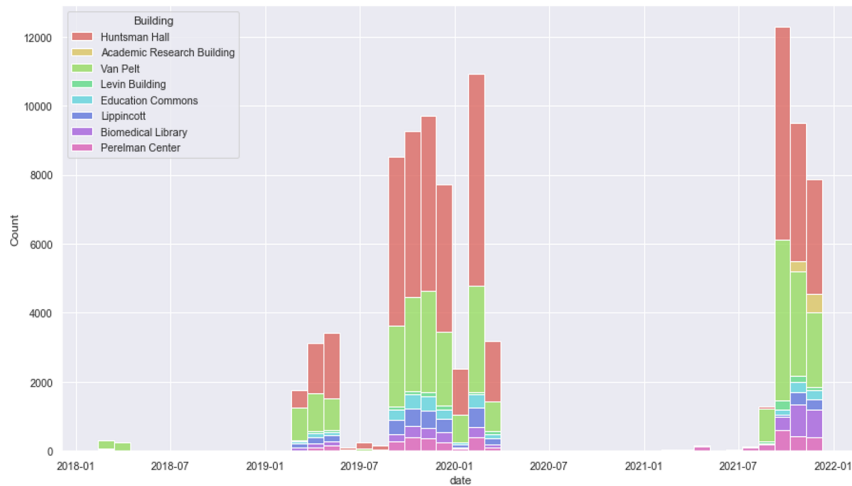


Analyzing GSR Usage at Penn

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Distribution of GSR Bookings across Buildings

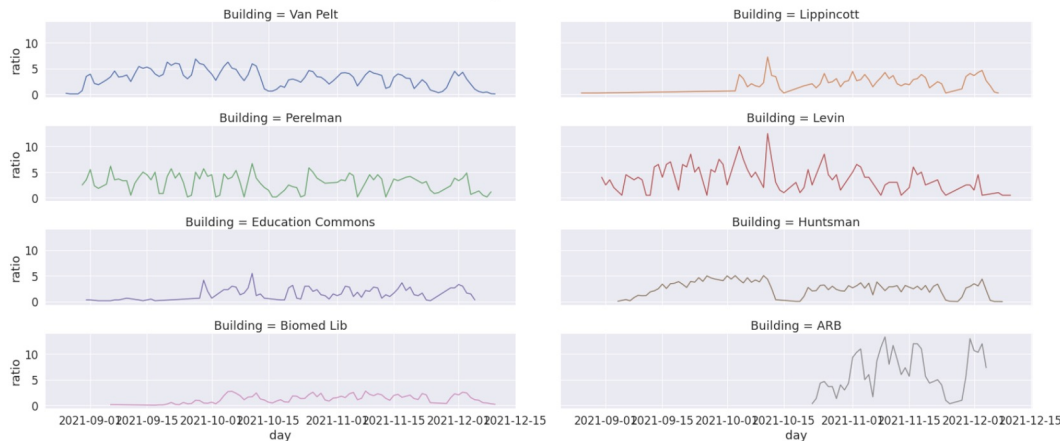


Huntsman most popular in terms of bookings

Though, Huntsman's preferential booking policy may imply a lower number of bookings it actually had the **highest number of bookings** of all buildings. Still, it had one of the lowest **bookings to rooms ratio**

Perception effects: Huntsman also has the highest cancellation rate for all buildings by far. This may be the result of students perceiving high demand for Huntsman GSRs and booking in advance to be safe.

Fall 2021 Bookings to Maximum Rooms Ratio



Booking Trends within Huntsman

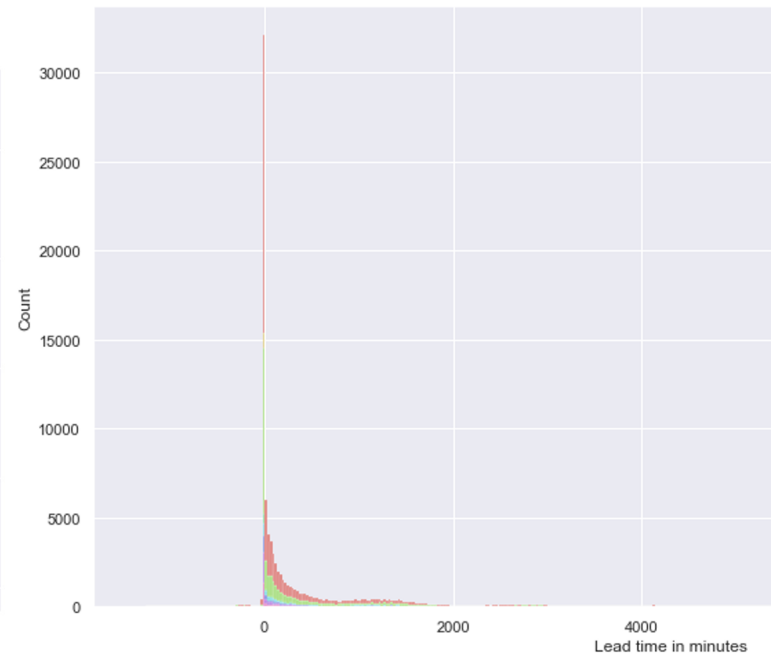
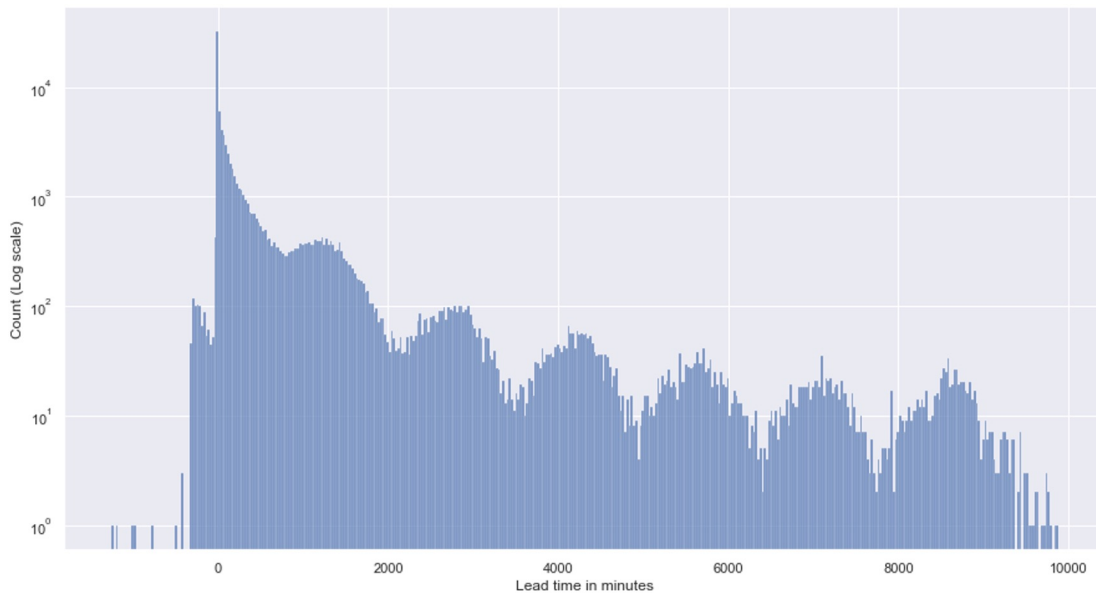
Almost equal preference across floors.
Less walk, more work: Higher number of bookings for rooms closer to the escalators. Potentially due to reduced walking distance.

Save Levin 2022!: Huntsman is relatively underutilized while Levin is has very high bookings per room

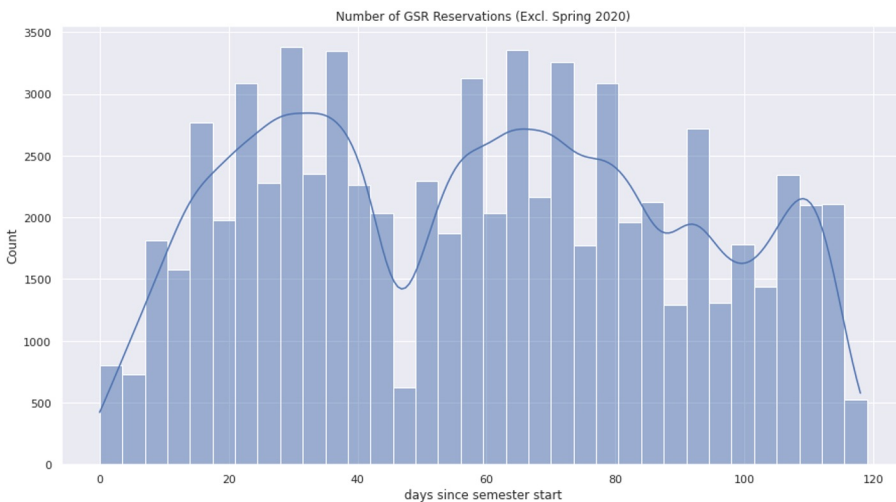
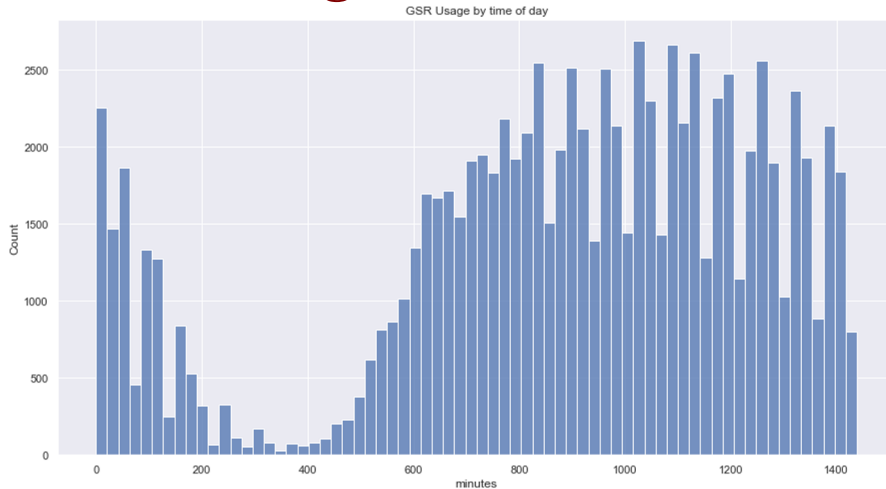


GSR Usage Statistics and Trends

- **Power users:** Some Penn students may be guilty of over-utilizing this resource as the top 5 users made more than 279 bookings each with the **maximum of 687 bookings!**
- **90 minutes is just right?:** ~35% of students booked 90 min slots for GSRs, though this may be skewed by slot variations across buildings e.g. Huntsman.
- **Students procrastinate (surprise surprise!):** Most bookings were made *right* before the booking time. There are even students trying to book GSRs **after the initial start time.**



GSR Usage Statistics and Trends



- **Penn students are night owls:** Bookings surged post 1pm with gradual decline until resurgence at midnight
 - Could be linked to “block schedule”
- **Monday & Sunday we grind:** Most GSR reservations were made for Mondays and Sundays and the least on Friday and Saturday.
- **Where do the Wharton kids go?:** Not to non-Wharton GSRs! Less than 50% of Wharton students booked a non-wharton GSR and 75% of these were < 5 times.
- **Tri-modal reservation trendline:** most likely linked to school breaks

Regression Analysis: Log-Level Linear Regression and Poisson Regression

Y: GSR Utilization

Measured by Log(Total Hours of GSR Reservations)

X:

- Time of day & day of week of GSR reservation
- Lead time (how far in advance reservation was made)
- What buildings has the student ever made a reservation in
- Whether the reservation was cancelled
- Whether a reminder was sent about the reservation

Linear Regression

$$R^2 = 0.622$$

$$\text{Adjusted } R^2 = 0.612$$

Lasso Regression

R^2 maximized with alpha functionally equal to 0

Poisson Regression

$$R^2 = 0.603$$

Findings:

- **Wharton Students love GSRs:** The linear model predicted that, all else held equal, Wharton students had a 53.65% higher GSR utilization than non-Wharton students
- **Procrastinators don't prosper:** A 24-hour increase in average lead time predicted a 8.16% increase in utilization

Conclusion and Suggestions

Review of Key Findings:

- **Huntsman Hall is popular, but under-utilized:** Reservations in Huntsman Hall account for roughly 50% of all GSR reservations at any given time, but they still have the lowest reservations-to-GSR ratio
- **Preferential Access Affects Preferences:** Only 37% of Wharton students made reservations in non-Wharton buildings, and of these people, only 25% made more than 5 reservations in non-Wharton buildings
- **COVID-19 did whaaaat?** We don't know either. It's hard to ascertain whether changes in booking behavior is driven by the new block schedule or COVID-19 restrictions

Recommendations:

- **Democratize Access to Huntsman!** Wharton students have a 54% higher GSR utilization rate, Huntsman Hall has a very low reservations-to-GSR ratio, and Wharton students have the capacity to utilize non-Wharton GSRs more often
- **Stop Procrastinating** 🙄 Our data says that, on average, you're a massive procrastinator. Try booking GSRs farther in advance, why don't you?
- **Tell your friends about ARB:** There are 10 new GSRs in the building that you can book through PennMobile!