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Visualizing Space Usage Patterns in a Health Sciences Library

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The Tompkins-McCaw Library for the Health Sciences collected user location information to analyze public space usage. That data was used to create heat map representations of average occupancy rates at specific locations within the building.

Background:

- Library buildings constructed in 1930s and 1970s at an urban, public research university.
- Most recent partial renovations completed in January 2017.
- New public area floor plan and furniture throughout the first floor.

Methods:

- Collected user location data through direct observation.
- Only non-identifiable information was collected.
- Observations made four times per day, Monday through Friday.
- Library staff marked user locations on a modified floor map.

Questions:

- Do patrons prefer a specific type of furniture?
- Which locations do patrons use most often?
- Does furniture or room location affect usage rates?

Analysis:

- Hand collected data were entered into a spreadsheet.
- The average rate of occupancy was derived as a percentage.
- Data were then imported into the Tableau analytics platform.
- Individual data points were assigned to their corresponding location on a floor plan image.
- Each location then displayed a color based on its associated data point's occupancy rate.



Results:

- Locations with the highest occupancy (60% - 72%) include café-style seating areas, group study rooms, and isolated, quiet spaces.
- Locations with the lowest occupancy included lounge-style seating, computer workstations, and study carrels near highly trafficked areas.

Conclusions:

- Patrons appear to prefer locations with ample table space that can accommodate multiple users.
- Library users preferred group study rooms with ample natural light.
- Patrons preferred silent study spaces if they were as secluded as possible and away from travel pathways.
- Traditional computer workstations are not desirable for our users.

Next Steps:

- Refine the method of data collection to ease the burden on library staff.
- Data from this study will be used to help plan a new library building in the future.

