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“Last Call in the Big Apple”: Individual Visualisation Report

This visualisation is an interactive map of destinations for New York City (NYC) yellow taxi trips that began on weekends between 2:00 and 3:00AM in 2020, grouped by month. Since NYC only provides the taxi zone ID for pickup and dropoff locations, the map displays the centroids of these zones. The map explores how the Covid-related closure of nightlife and departure of wealthy residents (Quealy, 2020) changed the demographics of late-night mobility patterns.

Trip destinations at this hour were visualised to highlight who moves around the city. Under New York state law, “last call” is at 4:00AM. For this visualisation, however, the “last call” was defined as 2:00AM. Nightlife establishments begin closing at 2:00AM, and the hour after the true “last call” overlaps with the morning work-shift rush hour. Trips between 2:00AM and 3:00AM are thus likely to end in residential areas, providing an indicator of taxi passenger demographics.

The Mapbox GL JavaScript library was used to add interactive aspects, which allow users to explore this topic further. A slider shows spatiotemporal changes in taxi trip volume and popular destinations across 2020. Users can also filter centroids by income quintile, showing how these changes differed by income group.

The centroid colour scheme was chosen for legibility. A Viridis color scheme was used rather than a standard monochrome colormap, which communicates quantitative differences equally effectively while showing greater differentiation between income quintiles. Moreover, multiple layers were added to give the centroids a ‘glow’, making darker centroids more visible against a black basemap — and evoking a nightlife theme.

Data collection and processing

2020 yellow taxi trip data was collected from the NYC Taxi and Limousine Commission (2021), processed locally, then uploaded to Mapbox as a static tileset. Given the large volume of data, dynamic API access would have been preferable. However, taxi trip data from July to December was only available in CSV format until after the analysis had been completed.

Taxi zone income data was derived from the U.S. Census Bureau’s 2019 American Community Survey estimates of median household income for New York Census tracts (2020). Since Census tracts are not nested within taxi zones, the area-weighted average income was calculated for each taxi zone.

Both datasets were processed in Python, using the pandas and geopandas libraries. A Jupyter notebook containing the code for processing is included with this submission.

Word count: 398

References

NYC Taxi and Limousine Commission. (2021). *TLC Trip Record Data*. Available at: <https://www1.nyc.gov/site/tlc/about/tlc-trip-record-data.page> (Accessed: 2 March 2021).

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U.S. Census Bureau; American Community Survey, (2020). *2019 American Community Survey 1-Year Estimates, Table S1903* [Data set]. Generated by Cara Navarro using data.census.gov: <https://data.census.gov/cedsci/> (Accessed 3 March 2021).