

Identification of Optimal New Locations for Freshii - Analysis of MTA Turnstile Data

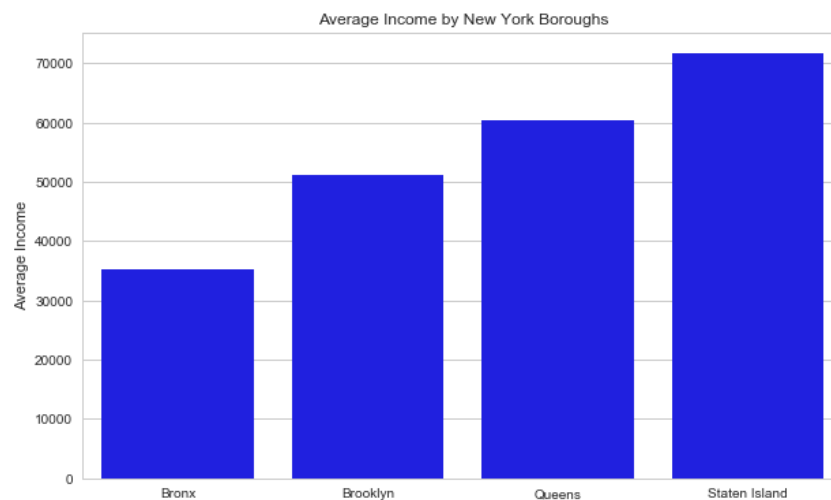
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Problem Statement

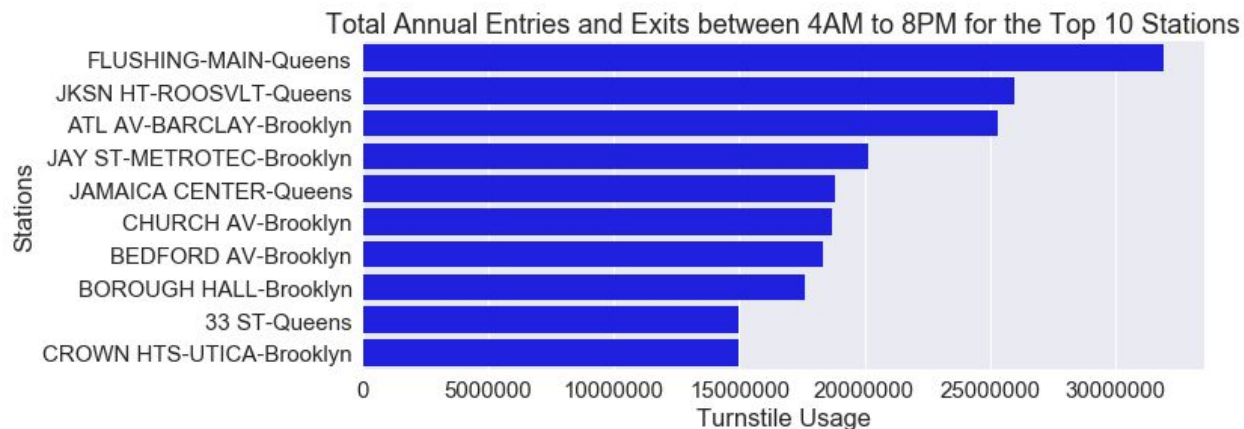
Freshii is a rapidly expanding fast casual national restaurant chain with 2 locations currently in New York City (NYC). Both locations are in Manhattan, and they plan to open 1-2 more location in new neighborhoods within the next year. Given their saturation in Manhattan, we will focus on other boroughs for placement recommendations.

Preliminary Analysis

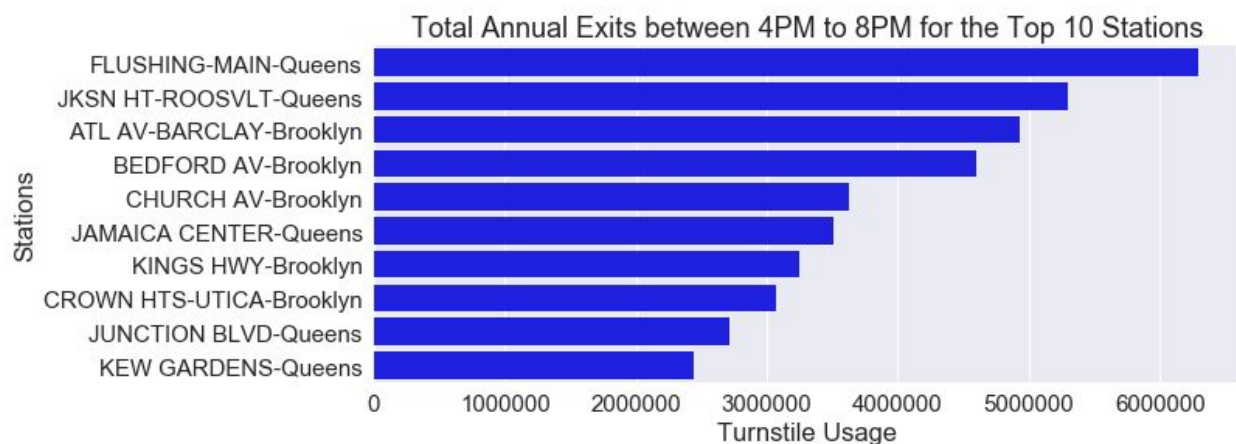
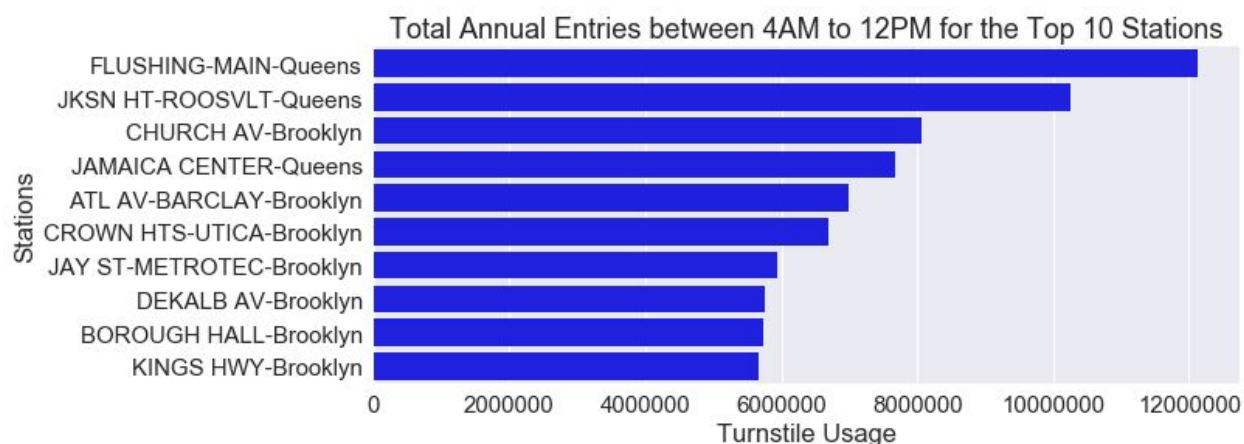
We identified Freshii's target market as middle income, health oriented individuals between the ages of 18 to 54 [1](#)[2](#). Given that target market and that Freshii's business relies heavily on pedestrian traffic to drive sales, we used NYC metro transit turnstile data to analyze foot traffic across middle income neighborhoods (Brooklyn and Queens) [3](#)[4](#). The following visual shows average income by borough and justifies the choices of middle income neighbourhoods.



We started by identifying the top stations in those neighborhoods by total entries and exits throughout the past year. Next, we took into account that Freshii has limited operating hours; the typical location is open from 5:00 am to 6:00 pm daily. We filtered the data down to total annual entries and exits between 4:00 am and 8:00 pm given the timeframes of the data set.



We assume that individuals entering a station in the morning or exiting in the evening are significantly more likely to be actual residents of that neighborhood and thus align to the neighborhood demographics previously identified. Given those assumptions, we chose to identify the top 10 stations based on total annual *entries* between 4:00 am and 12:00 pm as well as the top 10 stations based on total annual *exits* between 4:00 pm and 8:00 pm.



The stations highest across all of these top lists represent areas that both have high total pedestrian traffic and particularly high *local* pedestrian traffic during Freshii's operating hours. Restaurant and retail expansion benefit from concentrated expansion within a given market over expansion scattered across multiple neighborhoods ⁵. Given that strategy and our preliminary analysis, the Flushing-Main and Jackson Heights–Roosevelt Avenue intersections near MTA stations in Queens present optimal placement locations for Freshii's next two establishments.

These stations have high overall and local traffic as shown in the plots above, and they are located in the same NYC borough whose demographics closely match the target market.

Possible Additional MTA Data Analyses

If commissioned to complete a more thorough analysis, we would classify a borough for every station and whether a station is likely in residential or commercial/business districts based on timed entries and exits. Those areas with high entries in the morning and exits in the evening are more likely to be residential while the opposite will be true for commercial/business areas. This would give further insights around neighborhood demographics to help Freshii confirm if new location recommendations align to their target market. That classification along with an examination of more granular hourly data would allow us to recommend the best operating hours for new Freshii locations.

Restaurants face seasonal cycles in their business and often have their highest sales during summer months ⁶. By splitting the data into monthly counts instead of annual or hourly, we could recommend season hours for new locations as well determine which stations have disproportionately high traffic during different seasons.

Lastly, we would filter the data by a single borough to identify additional expansion areas for their 3rd and 4th stores within Manhattan or Queens, or to focus on expansion into Brooklyn when appropriate for the business.

Possible Alternative Data Source Analyses

This analysis has limitations as the MTA data source includes limited information. We recommend incorporating additional views before making a final decision.

New York City produces crime statistics by every precinct ⁷ and this data is useful for understanding business interruption costs to the business from crimes like theft, burglary, vandalism etc. Business interruption is one of the top 5 risks to any business hence should be considered in this location placement decision ⁸. Additional analysis of crime data by precinct in conjunction with the MTA turnstile data would allow us to evaluate the crime risk for each potential new high traffic location.

We have a smart business intelligence solution under development which measures the foot traffic through our video cameras installed near major districts in New York City. It quantifies the foot traffic in real time by accessing millions of video streams that our cameras capture

everyday. They not only focus on pedestrians, but also on bicyclist, motorcycles, cars and large vehicles. This placement solution is available to our clients at an additional cost.

Another consideration for making final decision would be to look at commercial rental value data near each recommended location.

Conclusion

New York City is a prime region for expansion by Freshii. The outer boroughs currently have no Freshii locations but hold the greatest population that we believe would be interested in patroning new locations. The middle income demographic is evolving to be more aware of healthy choices while continuing to appreciate good value, and Freshii is well positioned to take advantage of these factors. Competitors are few and far between in Brooklyn and Queens: Panera has one in each borough, Just Salad has one in Brooklyn, Hale and Hearty has two in Brooklyn, but Sweetgreen, Chopt, Fresh and Company and Saladworks, to name some top competitors, have no stores in either Brooklyn or Queens.

We look forward to helping you with an incremental and manageable expansion into great new locations in the outer boroughs of New York City.