

Finding optimal locations for an Adult Day Care Center in Queens

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1. Introduction/Business Problem

1.1 Background

According to a 2018 U.S. Census Bureau report, in 2035 “there will be 78 million people 65 years and older compared to 76.4 million under the age of 18.” [1]. With the growing aging population, the need for adult day care is also growing. Adult day care is basically the same as child care, except that here we deal with adults. People who attend adult day care live at home and can take care of themselves. They are looking for a place to go where they can spend their time and meet other people. It has been known that recreational activities and social stimulation improve or maintain physical and cognitive functions, so this will help them stay active and healthier longer, both physically and mentally. At the adult day care centers seniors will be provided with meals, have activities, do exercises, socialize, and some would provide transportation to and from the home.

1.2 Problem

In this project we will try to find an optimal location for an adult day care center in the Queens Borough of New York City whose main focus will be on recreational activities and social stimulation for the elderly population who would otherwise stay at home alone. The recreational activities would include: daily exercise regimes in a local park (tai chi, yoga, pilates, walking), while the social stimulation would consist of arts and crafts, music, games (bingo, scrabble, etc.) and general socialization and conversations to form friendly relationships. Only in case of a bad weather daily exercise regimes would be performed indoor. The center would have a nurse on-site so that participants’ vital signs can be checked and evaluated regularly. The center would also fill prescriptions at a local pharmacy if participants request such service. In addition, the center would provide healthy meals and snacks and transportation to participants.

Since the center would provide daily exercise regimes, we prefer locations as close to parks as possible. To avoid competition, we don't want to be in a proximity of existing adult day care centers. To be able to fill prescriptions we want to be in a proximity of a pharmacy.

Specifically, since we want to be as close to parks as possible our problem will be to identify parks in Queens satisfying the following 2 conditions:

1. No existing adult day care center within 1 km of the park latitude and longitude coordinates.
2. At least one pharmacy within 2 km of the park latitude and longitude coordinates.

1.3 Interest

This report will be targeted to stakeholders interested in opening such adult day care center in Queens. It may be of interest also to entrepreneurs who want to start adult day care business. According to the Administration on Aging, one out of every eight Americans is over the age of 65 [2]. This increase of the senior population in America offers excellent opportunities in the adult day care industry.

2. Data

Based on definition of our problem, we need locations of parks, pharmacies and adult day care centers in Queens, New York City. To limit neighborhoods to Queens we will use New York City Neighborhood dataset (https://geo.nyu.edu/catalog/nyu_2451_34572). This dataset contains 5 boroughs and neighborhoods that exist in each borough as well as the latitude and longitude coordinates of each neighborhood. We can conveniently access this data from this web address: https://cocl.us/new_york_dataset. Foursquare location data will be used to get locations of parks and pharmacies venues in Queens. Since the Foursquare data does not list adult day care centers in Queens we will obtain locations of these centers from this <https://data.cityofnewyork.us/Social-Services/Department-for-the-Aging-DFTA-Social-Adult-Day-Car/32cj-z7va> dataset on the NYC OpenData website. This dataset is a listing of registered agencies providing Social Adult Day Care Services with hours of operation in New York City. It currently has 328 rows and 34 columns. We will limit this data to the Queens Borough locations.

Below is a small snapshot for the first 9 columns:

ProviderType	DFTA ID	ProgramName	SponsorName	ProgramAddress	ProgramCity	ProgramState	Postcode	Borough
SOCIAL ADULT DAY CARE SERVICES	S53601	ROYAL COMMUNITY CARE CENTER INC.	Royal Community Care Center Inc.	192-08 JAMAICA AVE	HOLLIS	NY	11423	Queens
SOCIAL ADULT DAY CARE SERVICES	S5101	WOODHAVEN ADULT DAYCARE INC	Woodhaven Adult Daycare Inc	96-01 JAMAICA AVE	WOODHAVEN	NY	11421	Queens

References

1. <https://news.usc.edu/143675/aging-u-s-population-unique-health-challenges/>
2. <https://bizfluent.com/about-5479617-requirements-adult-day-care-business.html>