Identifying ideal Restaurant Location

Introduction

Houston is a city of eats, plain and simple. With a plethora of restaurants, cafes, food trucks and eateries covering all cuisines imaginable, a restaurant looking to open its doors needs choose a location strategically and wisely.

Business Problem

As a restaurant entrepreneur, you are looking to open a new restaurant to specifically tap into the Energy, Medical, or both sectors' dining needs. In order for your new endeavor to survive and thrive, the following factors needs to be studied in order to decide on a proper location.

These include:

- Location of the Energy Corridor and Medical Center
- Types of available cuisines and menus surrounding the Energy and Medical hubs
- Who are the competitors in these locations
- Availability of associated venues, such as gyms, entertainment, parks
- Availability of food suppliers, farmer's markets, etc. in order to maintain quality and costs, as well as advertise freshness and quality of ingredients

The funding for the restaurant is secure and the stakeholder, Yummy-Yummy, Inc., is willing to endure troubles at the onset of the venture to build a thriving business. The first step is crucial - choosing the location needs to be carefully analyzed and planned out so that future expansion is possible.

Data Section

Data used in our analysis will come from Google Maps and from FourSquare. The combination of these two data sources will provide the needed data set to perform an analysis of the available competition in the sectors that are the target of the restaurant location. When collecting venue data using FourSquare, the radius of collection, also referred to throughout the analysis as vicinity, will be set to 500m.

Methodology Section

The main component of data collection and analysis is composed of the following steeps/stages:

1. Identify predominant businesses/institutions within each sector to be used as a reference point. Addresses for each business/institution will be collected using Google Maps (www.maps.google.com).

a. M.D. Anderson Cancer Center is a cancer and research hospital located at the heart of the Texas Medical Center (TMC) in Houston
b. Texas Children's Hospital is a fixture of TMC and houses many patients, and medical staff
c. Dow Chemical is major company situated in the Energy Corridor located in West Houston
d. BP Energy Company is a major oil company also located in the Energy Corridor

2. The coordinates for each business/institution are acquired from the MapCoordinates website (mapcoordinates.net). The address of the location is entered and the latitude and longitude coordinates are returned.

The data collected is as follows.

Business/Institution	Address	Sector	Latitude	Longitude
M.D. Anderson Cancer Center	1515 Holcombe Blvd., Houston, TX 77030	Texas Medical Center	29.707	-95.397
Texas Children's Hospital	6621 Fannin St, Houston, TX 77030	Texas Medical Center	29.782	-95.636
Dow Chemical	1254 Enclave Pkwy, Houston, TX 77077	Energy Corridor	29.825	-95.621
BP Energy Company	201 Helios Way, Houston, TX 77079	Energy Corridor	29.782	-95.636

3. Venue data will be obtained using FourSquare and the business/institution coordinates above.
4. The obtained venue data will be collected and then organized into a data frame with its associated business/institution. The total unique venue categories will be determined along with the number of venues in the vicinity of each business/institution. The frequency of venues will also be calculated to provide an assessment of food competition as well as surrounding amenities.
5. The venues in the vicinity of each business/institution will be ranked and the top 10 most common venue category for each will be determined.

Results Section

Upon completion of data collection and performing of the analysis presented in the methodology above, the following have been produced. A total of 44 venues were collected, representing a total of 21 unique categories. The categories included the following:

American Restaurant	Coffee Shop	Park
ATM	Donut Shop	Restaurant
Bagel Shop	Event Space	Sandwich Place
Breakfast Spot	Fast Food Restaurant	Smoothie Shop
Bus Station	Food Court	Sushi Restaurant
Café	Gym	Vietnamese Restaurant
Cajun / Creole Restaurant	Gym / Fitness Center	Park
American Restaurant	Hotel	Restaurant

M.D. Anderson Cancer Center had the most venues within 500m, a total of 20 venues. The Dow Chemical company was second with 9. Texas Children's Hospital and BP Energy Company both had 7 venues within 500m. Ranking the Top 10 most common venues for each site resulted in the following.

Ranked Venue Categories:

Business/ Institution	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
BP Energy Company	Coffee Shop	Park	Bus Station	Café	Gym	Event Space	Vietnamese Restaurant	Donut Shop	American Restaurant	Bagel Shop
Dow Chemical	Vietnamese Restaurant	Donut Shop	Sandwich Place	Bagel Shop	Café	Cajun / Creole Restaurant	Food Court	Sushi Restaurant	Coffee Shop	American Restaurant
M.D. Anderson Cancer Center	American Restaurant	Fast Food Restaurant	Sandwich Place	Coffee Shop	Restaurant	Food Court	Breakfast Spot	ATM	Gym / Fitness Center	Hotel
Texas Children's Hospital	Coffee Shop	Park	Bus Station	Café	Gym	Event Space	Vietnamese Restaurant	Donut Shop	American Restaurant	Bagel Shop

Frequency of Venue Categories:

Business/Institution	ATM	American Restaurant	Bagel Shop	Breakfast Spot	Bus Station	Café	Cajun / Creole Restaurant	Coffee Shop	Donut Shop
BP Energy Company	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.29	0.00
Dow Chemical	0.00	0.00	0.11	0.00	0.00	0.11	0.11	0.11	0.11
M.D. Anderson Cancer Center	0.05	0.19	0.00	0.05	0.00	0.00	0.00	0.14	0.00
Texas Children's Hospital	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.29	0.00

Business/Institution	Food Court	Gym	Gym / Fitness Center	Hotel	Park	Restaurant	Sandwich Place	Smoothie Shop	Sushi Restaurant	Vietnamese Restaurant
BP Energy Company	0.00	0.14	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00
Dow Chemical	0.11	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.11	0.11
M.D. Anderson Cancer Center	0.05	0.00	0.05	0.05	0.00	0.10	0.14	0.05	0.00	0.00
Texas Childrens Hospital	0.00	0.14	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00

Based on the current analysis findings, an ideal restaurant location would be best either in the vicinity of BP Energy Company or Texas Children's Hospital as both had the fewest venues and even fewer dining options.

Discussion Section

Interestingly, the types of customers for each business/institution leaves open the potential for further analysis. The visitors to a business, especially in the Energy/Oil & Gas sector would mostly be employees from these companies and any visitors, both clients and vendors that may be visiting or working out of the offices. Though this would be a large number, it would be possible that the number of customers resulting from not only employees at the medical institutions, but also patients, family and friends of patients, as well as supply vendors and others would potentially be greater. It would also be worth comparing the number of employees and visitors to each business/institution to complement our current analysis.

Additionally, further analysis with more businesses/institutions within each sector would provide a more granular location for a potential restaurant. The reasoning behind this is that the Texas Medical Center is closely clustered together and therefore venues would need to be within walking distance. The businesses in the Energy Corridor are more spread out and therefore are more accessible by automobiles.

Conclusion

As mentioned in the discussion section further analysis would be optimal in determining a precise restaurant location, or even two., would best optimize the earning potential of a new restaurant, simply given the availability of dining venues in each locale. The current analysis indicates that a restaurant within 500m of BP Energy Company or Texas Children's Hospital would be ideal given the number of competing and complementary venues.